The Impact of the Taung Dam Irrigation Scheme, South Africa, on Local People and the Environment, 1977-2023

A Smit

orcid.org 0000-0001-7918-0662

Dissertation accepted in fulfilment of the requirements for the degree *Master of Arts in History* at the North-West University

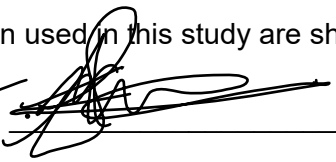
Supervisor: Prof ES van Eeden

Co-supervisor: Ms L van Vuuren

Graduation: May 2025

DECLARATION

I, Annadine Smit (University number: 23507810) declare that the dissertation titled "**The impact of the Taung Dam Irrigation Scheme, South Africa, on Local People and the Environment, 1977 – 2023**", which I hereby submit for the degree MA (History) at the North-West University, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution and that it has been through the process of language editing. All the sources that have been used in this study are shown and acknowledged.

SIGNATURE: 

DATE: 2 Dec 2024

DEDICATION

I dedicate this work to my grandmother and my father, whom I lost early on in this endeavour. I also dedicate it to all the persons who motivated me in their own way to keep going and to finish what I started.

ACKNOWLEDGEMENTS

- First and foremost, I thank God for answering my prayers when I lacked the concentration and willpower to keep going.
- I begin and end my acknowledgements with thanking my study leaders for the tremendous amount of support and patience they have shown me. To Mrs Lani van Vuuren, for her willingness to put up with a student with many (to my mind) silly questions. Her expertise and insight into the topic have been of immense value. She helped me back on the right path when my train of thought was distracted by topics in another field altogether. To Prof Elize van Eeden - there is not a container large enough in this world to hold the kindness and patience which you have shown me throughout this journey. You have more than guided me in my studies. The opportunities you afforded me in the work of academics, along with your dedication and passion are truly inspiring, and I hope to continue learning much more from you as my academic journey continues.
- Additionally, I would like to thank Cecilia Kruger who have so patiently received the copies of my work for language editing. It is highly valued and appreciated.
- A special word of thanks goes to the Faculty of Humanities who have allowed me to register and complete my studies year after year. I know this has taken long and the challenges along the way taught me a lot. Thank you for the patience and belief in me
- Stakeholders:
    - To Mr Gert Kruger, who so kindly and patiently answered all my questions relating to dams and explained their structures to me. Thank you for taking your time off from your farm to accompany me to Taung and introducing me to your wonderful colleagues at the Vaalharts Water User Association and visiting persons of interest regarding the Taung dam's history. Your insights and guidance have helped tremendously in remembering the people in this story.
    - I also extend my appreciation to the staff members of the Vaalharts Water User Association for facilitating access to their archives, to community members, and for arranging the opportunity to meet with *Kgosi* Nyoko Motlhabane. You each went out of your way to assist me in my endeavours.
    - I also thank all the interviewees and each of the three Batlhaping Chiefs who assisted me in giving a more nuanced view into the history and mechanics of the area they call home.
    - I also extend a heartfelt thanks to Dr David Berger who so patiently answered all my questions and provided me with extra resources to complete this study.

    - Mr Eric Stoch & Mr Keaobaka Tsholo. I thank each of you for your time spent accompanying me to interview persons in their native tongue. Without your assistance, I would never have been able to document their valuable contributions.
- I would also like to thank the Faculty of Theology who afforded me the time needed to complete my studies. A special thanks to Prof Hennie Goede, my director, who gave me advice to help me concentrate and keep at it.
- I extend my gratitude to my family and friends for their patience and support throughout the process. Your motivation has helped me when you might not have thought it did - especially my mother who had to contend with a very quiet house while I tried to stay focused.

ABSTRACT

This study is a historical analysis of the socio-environmental impact of the Taung Dam Irrigation Scheme on the region's people and environment dating from its inception in 1977 to 2023. To do this the historical method of inquiry was mainly followed while also engaging the multidisciplinary nature of regional history. The study relied on primary and secondary sources and was interpreted from a large corpus of historiography on dam irrigation projects from across the world. Additionally, a part of the approach included in the historical method was to cover diverse community and leadership perspectives from the top down and bottom-up, and to thoroughly scrutinise these voices through a process of internal and external source criticism. An important part of the research was to understand the purpose behind the irrigation scheme since its history shows that only the dam component of the irrigation scheme was completed. Other and especially recreational uses that have since been featured, are covered to some extent. The years between 1977 to 1990 which marks the period of planning the scheme are inundated with political, social, and agricultural nuances as the history of the movement of people and their livelihoods in agricultural practices are contextualised. The timeframe for the completion of the Taung Dam (1990-1993) raised suspicion among some community members (as interviewees) as they relay stories of illicit diamond mining in the vicinity of the Harts River near Manthe village. Additionally, some Environmental Impact Assessments published more than a decade after the completion of the Taung Dam revealed that the scheme could and would never be able to fulfil its intended purpose as a source of additional irrigation. This was due to the poor inflow rate from the Harts River that feeds into the dam. Key motivators for the Taung Dam were therefore captured within three main thoughts, which are, firstly, enshrined in the political socio-economic goals of the newly established Bophuthatswana government in 1977. Secondly, the growing irrigation agriculture sector in Taung features strongly, despite the under-developed state of the existing Taung Irrigation Scheme as part of the adjacent Vaalharts Irrigation Scheme. Lastly, and perhaps most controversial is a growing awareness of the role of illicit mining activities within the 20 km^2 radius of the Harts River near Manthe. The history of the socio-environmental impact of the Taung Dam Irrigation Scheme focuses mainly on the dam's development, subsequent loss of habitat and natural plant life, and its socio-economic outcome as other ventures towards its utilisation have been attempted until

2023 in planning reports and articles, and a displaced community's memories and recent views of it. This is done to add to the field of water and regional history as very little on the topic of irrigation histories for South Africa's homelands era has thus far featured.

Keywords

Taung, Irrigation scheme, Taung Dam, displacement, Batlhaping, Bophuthatswana, microspatial history, micro spatial regional history, water history, social impact, environmental impact, agriculture.

OPSOMMING

Hierdie studie is 'n historiese ontleding van die sosio-omgewingsimpak van die Taungdam-besproeiingskema op die streek se mense en omgewing sedert die beplanningsfase daarvan in 1977 tot 2023. Hiervoor is die historiese metode van ondersoek ingespan, terwyl die navorsingsbeginsels van streeksgeskiedenis (inaggenome die multidissiplinêre aard daarvan) gevolg is. Hierdie kwalitatief-gedrewe studie steun op primêre en sekondêre bronne. Die leiding en interpretasies daaruit verkry is moontlik gemaak deur die groot korpus geskiedskrywing oor dambesproeiingsprojekte van regoor die wêreld. Daarbenewens was 'n deel van die benadering wat in die historiese metode vir hierdie studie ingesluit is, om diverse perspektiewe “van bo af” en “van onder na bo” te dek. Hierdie perspektiewe is volgens historiese beginsels intensief deur 'n proses van interne en eksterne bronnekritiek ondersoek. 'n Belangrike deel van die navorsing was om die doel agter die trae ontwikkeling van die besproeiingskema te verstaan, aangesien die geskiedenis daarvan toon dat slegs die damkomponent van die besproeiingskema voltooi is. Ander voornemende ontspanningsgebruike daarvan het wel sedertdien manifesteer en dié is ook bespreek. Die jare 1977 tot 1990, gekenmerk as die beplanningstyd van die skema, is deur politieke, sosiale en landbou nuanses oorheers. Hoe die plaaslike landboupraktyke en menslike mobiliteit negatief daardeur beïnvloed is, is ook in die studie belig. Die tydsraamwerk vir die voltooiing van die Taungdam (1990-1993) het agterdog by sommige omliggende inwoners en belanghebbendes laat ontstaan omdat die dam nooit vir sy voornemende doeleindes gebruik was nie en daar onderlinge bespiegelinge bestaan rakende onwettige diamantmynbedrywighede. Gerugte van hierdie onwettige diamantmynboubedrywe in die omgewing van die Hartsrivier naby Manthe was flink in omloop en sommige hiervan word in die studie gedeel. Omgewingsimpakbepalingsverslae wat meer as ’n dekade ná die dam se voltooiing uitgereik is, het aan die lig gebring dat die skema nooit aan sy voorgenome doel as 'n bron vir bykomende besproeiing sou kon vervul nie. ’n Kritieke leemte was die bevinding dat die invloeitempo van die Hartsrivier in die reservoir te swak is om besproeiingsboerdery vanuit die dam enigsins lewensvatbaar te maak. Sleutelmotiveerders vir die Taungdam kan in drie hoofgedagtes vervat word: eerstens, is dit verskans in die politieke sosio-ekonomiese doelwitte van die eertyds nuutgestigte Bophuthatswana-regering (1977); tweedens was dit beskou as noodsaaklik vir die

groeiende besproeiingslandbousektor van Taung; laastens, en waarskynlik die mees kontroversiële saak, is die groeiende bewustheid van die rol van onwettige diamantmynbedrywighede in ’n 20 km^2 radius van die Hartsrivier naby Manthe. Die geskiedenis van die sosio-omgewingsimpak van die Taungdam-besproeiingskema fokus dus hoofsaaklik op die dam se ontwikkeling, die daaropvolgende verlies aan habitat en natuurlike plantlewe, die sosio-ekonomiese impakte (veral opgeneem in artikels en verslae wat deur die jare oor inisiatiewe gerapporteer het), asook 'n ontheemde gemeenskap se herinneringe en onlangse sieninge voor die Taungdam.

Sleutelwoorde

Taung, besproeiingskema, Taungdam, verplasing van mense, Batlhaping, Bophuthatswana, mikroruimtelike geskiedenis, streekgeskiedenis, watergeskiedenis, sosiale impak, omgewingsimpak, landbou.

LIST OF ABBREVIATIONS

BAO	Bantoe-Administrasie en-Ontwikkeling
NWU	North-West University
DWAF	Department of Water Affairs and Forestry
GTLM	Greater Taung Local Municipality
ICOLD	International Commission on Large Dams
MA-R	Municipal Archive at Reivilo
MA-T	Municipal Archive at Taung
NASA	National Archive of South Africa
OA	Oral Archive
PRC	Paul Roberts Collection
SAB	South African Breweries
SABM	South African Breweries Malting
SANCOLD	South African Commission on Large Dams
SAWHAR	South African Water History Archival Repository
SPA	Smit Personal Archive
VHWUA	Vaalharts Water User Association
WCA	Western Cape Archive
WRC	Water Research Commission

TABLE OF CONTENTS

LIST OF MAPS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 THE METHODOLOGICAL UNDERSTANDING AND MOTIVATION FOR THE HISTORICAL STUDY OF THE TAUNG DAM IRRIGATION SCHEME

1.1 Introduction

How does a large infrastructural investment made in the homelands era to uplift a historically marginalised community become a white elephant for nearly three decades? This was the question that tickled the author when she became aware of the existence of the Taung Dam during her research into the area's agricultural history as part of a regional history project by the NWU for the Greater Taung Local Municipal district.[1] Elaborating on this question in literary searches highlighted impact studies of dams on displaced communities of which the Taung Dam was no stranger. Although agriculture serves as an essential contributor to local economies in especially developing countries where domestic production enables employment and economic growth,[2] it is often in the most adverse arid climates that very sophisticated irrigation works are found. Its success is commonly dependent on a centralised political state.[3] Though the semi-arid region of Taung needed employment and endeavours for economic growth, the suggested ideal political circumstances were not something Bophuthatswana (1977-1994) were privy to at the time of the Taung Dam's planning and construction. The then National Party-led South African government implemented its apartheid-driven policy, which sought to divide the country's populations into nation-states, otherwise known as Bantustans, reserves or homelands.[4] The purpose of these areas was to divide the peoples of South Africa based

---

[1] A regional history project was launched in 2019 of which the author was a co-writer and contributor. Much of the field research for that project coincided with this research study. *See* ES Van Eeden, & A Manson (eds.), *Taung in History: Moments, Memories & Human Encounters* (Ivyline: Vanderbijlpark, 2024).

[2] World Bank, *World Development Report 2008: Agriculture for Development* (The World Bank : Washington DC, 2007), [online source, accessed: 21 Dec. 2023, https://openknowledge.worldbank.org/entities/publication/ba969388-b5eb-5155-b8f2-6d323a6e5a52], p. 2.

[3] RL Heathcote, *Drought and the human story: Braving the bull of heaven* (Ashgate: Surrey, England, 2013), p. 224.

[4] J Drummond, & AH Manson, The evolution and contemporary significance of the Bophuthatswana-Border landscape *in* D Rumley, & JV Minghi (eds.), *The geography of border landscapes* (Routledge: London, 1991), p. 233; ACG Best, South Africa's border industries: The Tswana example, *Annals of the Association of American Geographers*, 61(2), 1971, pp. 329-330. *Also note:* The terminology changes as the concept for racially demarcated areas are understood and implemented throughout

on racial lines. Africans not of European decent all had to stay in reserves based on their ethnicity. For this reason, those classified as Tswana moved or were moved to live in an area that was then referred to as Bophuthatswana. After years of negotiation, this homeland received its independence in 1977.[5] With their independence, the goal of the Bophuthatswana leadership was to free itself from political and economic submissiveness s to South Africa, which included working towards economic independence albeit with support from the South African Development Bank.[6] In the process, the growth of the agricultural sector was key to the plans of the Bophuthatswana government.[7] Supporting the growth of irrigation farming was prominent in the planning process. The Taung Dam Irrigation Scheme was speculated to be a copy of the success story of the Vaal Harts Irrigation Scheme (VHIS) (implemented in 1934) from which the Taung area had greatly benefited since 1939.[8] The additional irrigation scheme was to be built in the region of Taung, complete with its own dam and canal system. Though soil preparation and irrigation viability plans for an irrigation scheme traditionally precede that of the dam,[9] it was the dam that would ultimately be completed first in the case of the Taung Dam (completed in 1993).[10] The planning of both projects (the irrigation scheme and the dam) was said to involve many considerations and much talk between various stakeholders and those that would be affected. However, the dam was never really used for its intended purposes and existing irrigation farming largely obtained its water from the original negotiations with the VHIS.[11] In the first decade of the 21st century, new

---

South Africa's history, *see* J Drummond, Rural land use and agricultural production in Dinokana Village, Bophuthatswana, *GeoJournal*, 22(3), Nov. 1990, p. 337.

[5] J Dugard, South Africa's Independent Homelands: An Exercise in Denationalization, *Denver Journal of International Law and Policy*, 10(1), 1980, p. 15.

[6] K Magyar, Planning for Economic Development in Bophuthatswana, *Indicator South Africa*, 2(1), 1984, pp. 11-13; Reference of this is also made in CA du Toit, 'N Koste Analise van Besproeiingsboerdery in die Taung-Distrik Van Bophuthatswana (MA, Potchefstroomse Universiteit van Christelike Hoër Onderwys (PUvCHO), 1985), p. 2.

[7] J Cowley, & A Lemon, Bophuthatswana: Dependent Development in a Black 'Homeland', *Geography*, 71(3), Jun. 1986, pp. 252-254.

[8] AM van A de Jager, & AH Marais, Die Aanloop tot die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), Jan. 1994, pp. 10-11; Tempelhoff also reflects on the Vaalharts Irrigation Scheme in general and mentions the benefits the Taung reserve received from this scheme in terms of irrigation water, *see* JWN Tempelhoff, *South Africa's water governance hydraulic mission (1912-2008) in a WEF nexus context* (Aosis: Durbanville, 2018), pp. 114-116, 156.

[9] GE Acha, Problems Faced by Small-scale Farmers in Taung Irrigation Scheme in the North-West Province, South Africa (MA, North-West University (NWU), 2019), pp. 85-86.

[10] Anon, Taung: A Dam for the People, *Civil Engineering,* 2(7), Jul. 1994, p. 11.

[11] L van Vuuren, In the Footsteps of Giants: Exploring the History of South Africa's Large Dams (Water Research Commission: Pretoria, 2012), pp. 130, 323.

initiatives were launched to once more investigate the feasibility and use of the Taung Dam.[12] This continuous revisiting of the purpose of the unused dam has raised interest in its history as its historical impact on the environment and people until now has been largely undocumented in secondary sources. Therefore, the study revisits this area to investigate the Taung Dam and related irrigation projects' historical impact on the people and the surrounding environment.

1.2 Orientation and background

1.2.1 A concise spatial and historical orientation[13]

Historically, the borders of the Taung area have moved (not significantly) as 'ownership' dictated. The area is largely a cross-border area, on a cultural level (with the movement of people) and politically (with the change of land 'ownership').[14] For the largest part of the period of this study (1977-2023), Taung falls within the borders of the former Bophuthatswana homeland, except for the period after South Africa gained its independence from the apartheid regime in 1994. After 1994, Taung, became largely known as an area within the borders of the Greater Taung Local Municipality (GTLM) situated in the North-West Province, South Africa. The small town of Taung dates back some 200 years with the Taung people, a branch of the Batlhaping permanently establishing themselves in this region during the early 19th century.[15] The governmental rulers in 20th century South Africa, would in later years, with successive legislative measures seek to establish racial divisions of which the nuances of these complex transitions are captured in Chapter Three.[16] In the time of the South African Government's

---

[12] Consider the various reports by Department of Water Affairs and Forestry (DWAF) *in* M Copeland, Vaal River System: Feasibility Study for Utilization of Taung Dam Water, Irrigation Planning and Design – Final report, Report Number: P WMA 10/C31/00/0908, (DWAF, 2008).

[13] A much-deepened historical context on the region will feature in Chapter Three of this study.

[14] Taking into account that the Batlhaping were the group of Batswana that mainly settled in Taung despite the movement of other groups of people in and around the area. I Schapera, *The Tswana* (International African Institute: London, 1984), pp. 9-10; GY Okihiro, Precolonial Economic Change Among the Tlhaping, ca. 1795-1817, *The International Journal of African Historical Studies*, 17(1), 1984, pp. 59-79; PHR Snyman, Die Langeberg-Rebellie en die Totstandkoming van Olifantshoek, *Contree*, 20, 1986, pp. 16-26.

[15] WF Lye, & C Murray, *Transformations on the Highveld: The Tswana and Southern Sotho* (David Phillip: Cape Town, 1980), p. 29; I Schapera, *The Tswana* (1984), pp. 9-10.

[16] J Butler, IR Rotberg, & J Adams, The Black Homelands of South Africa: The Political and Economic Development of Bophuthatswana and Kwa-Zulu (University of California Press: Berkeley, c1977), pp. 9-10.

policy of apartheid (1948-1994) the evolving organisation of people into homelands commenced under the auspices of separate development based on cultural, ethnical, or racial heritage.[17] Bophuthatswana was to be the homeland of all people classified as belonging to the Tswana cultural group, which also included the Taung region (today known as the Greater Taung Local Municipality (GTLM)). In addition to these legislative constraints of the 20th century, betterment policies saw to the area's main focus for development, which was agriculture.[18] Administratively situated in the then Cape Province, Taung was one of the fragmented parts of land that belonged to Bophuthatswana from roughly 1959 with the inception of the Bantu Self-Government Act of 1959.[19] Bophuthatswana (including the Taung area) gained its independence from South Africa in 1977.[20] Taung formed part of Bophuthatswana until 1994 with the dismantling of apartheid and the end the Bophuthatswana government and Mr Lucas Mangope's rule as president.[21]

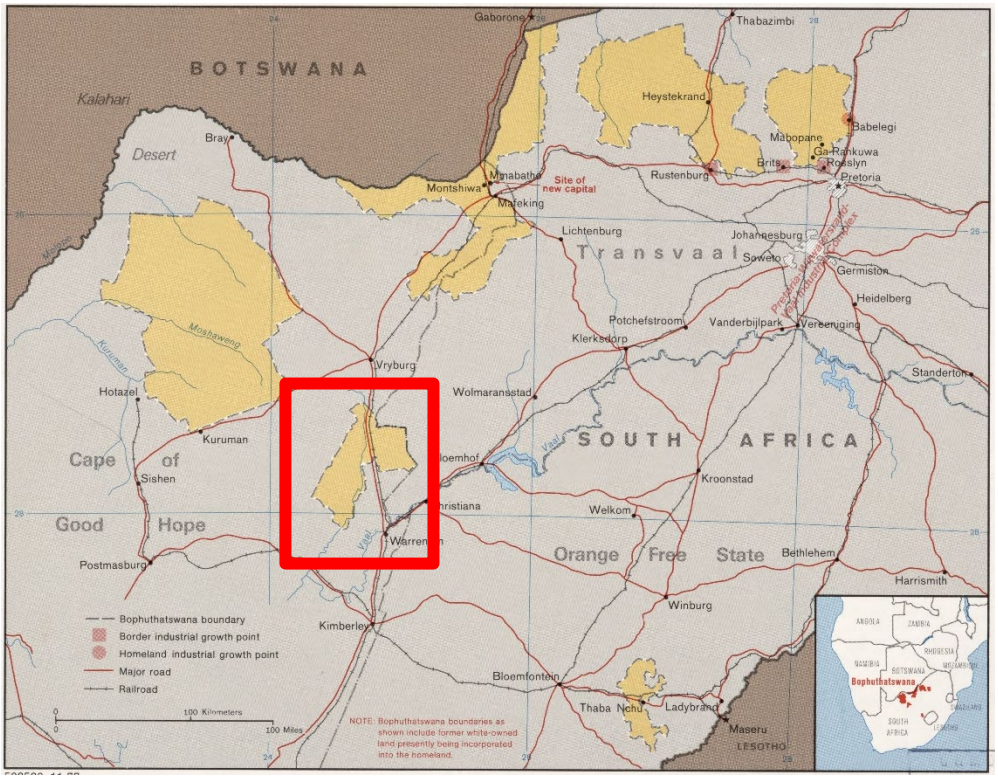
[17] J Dugard, South Africa's Independent Homelands …, *Denver Journal of International Law and Policy*, 10(1), 1980, pp. 11-15.

[18] National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 5760, Ref. H128-1665, Ad hoc Committee's report on the Lower Taung Reserve, Comments by Chief Agricultural Officer – Taung, 18 Nov. 1954, pp. 111-112.

[19] J Dugard, South Africa's Independent Homelands …, *Denver Journal of International Law and Policy*, 10(1), 1980, pp. 12-13.

[20] CJ Maritz, The Political System of Bophuthatswana, *African Insight,* (7)2, 1977, p. 203.

[21] A Manson, & B Mbenga, Bophuthatswana and the North-West Province: From Pan-Tswanaism to Mineral-Based Ethnic Assertiveness, *South African Historical Journal*, 64(1), 2012, pp. 96, & 99; PS Jones, 'To Come Together for Progress': Modernization and Nation-Building in South Africa's Bantustan Periphery - The Case of Bophuthatswana, *Journal of Southern African Studies*, 25(4), 1999, pp. 579, 583, & 604.



Map 1-1: Bophuthatswana (1977) Taung area outlined in red[22]

The homeland consisted of seven units of a combined area of 44,109 km^2 spread over three of the four South African provinces at the time (see Map 1-1). Along with its unique inclusion of an intricate irrigation scheme, compared to the other homeland states, it was (as shown in Chapter Five) one of the most economically successful reserves and later homelands of its time (1977-1994).[23] It had strong mineral reserves and tourist attractions such as its various casinos (Sun City and Thaba 'Nchu) which were at that point still illegal in South Africa.[24] In an attempt to further their independence from South Africa after 1977, especially economically, the Bophuthatswana government made it their particular goal to continue developing. One of the cornerstones for this development was in the agricultural sector, with irrigation farming playing an important role.[25] The area chosen to be ideal for

[22] United States Central Intelligence Agency, Bophuthatswana, [online source, accessed: 16 May 2020, https://commons.wikimedia.org/wiki/File:Bophuthatswana._LOC_80692110.jpg, (Source origin website: Library of Congress Web site: https://www.loc.gov/item/80692110/, 1977)].

[23] Anon, Bophuthatswana, *African Insight*, 14(2), Jan. 1984, p. 133; J Cowley, & A Lemon, Bophuthatswana …, *Geography*, 71(3), Jun. 1986, p. 252; A Manson, The Batlhaping of the Taung District: From Independence to Colonisation ca 1750-1895: Strangers, Missionaries, Guns, Gems and Enterprise, *in* ES Van Eeden, & A Manson (eds.), *Taung in history: Moments, Memories & Human Encounters* (Ivyline: Vanderbijlpark, 2024), p. 86.

[24] J Cowley, & A Lemon, Bophuthatswana ... *Geography*, 71(3), Jun. 1986, p. 254.

[25] CA du Toit, 'n Koste Analise van Besproeiingsboerdery ... (MA, PUvCHO, 1985), p. 2.

this venture was Taung. This decision was made based on its proximity to the suitable terrain within which the existing VHIS was constructed and from which it has benefitted since 1939.[26] See Chapters Three and Four for a fuller elaboration on these arrangements as an integral part in the development of this area's identity as not only an agricultural hub but more specifically an irrigation centre for the Bophuthatswana homeland.

The area's climate and soil compositions (see Chapter Three for more detail) though conducive to extensive animal husbandry (as had been the practice for centuries before)[27] was also classified as highly suitable for irrigation crop farming. Despite its seasonal and sparse rainfall, surface water was supplemented by relatively well-supplied groundwater sources obtained through boreholes and digging at sandy riverbeds.[28] Furthermore, Agricor, a parastatal agricultural development corporation, established in 1978 initiated large-scale farming projects such as overhead irrigation at Taung as part of the initial Taung Irrigation Scheme.[29] Once the potential for a similar scheme was identified in Taung, the local administration of Bophuthatswana sought to build their independent irrigation scheme in 1989, which would realise the possibility of more water being allocated to the areas of Magogong, Pampierstad, Pudimoe and Taung.[30] This was encapsulated within this latter timeframe of the Taung Dam Irrigation Scheme (see Chapters Five and Six).

---

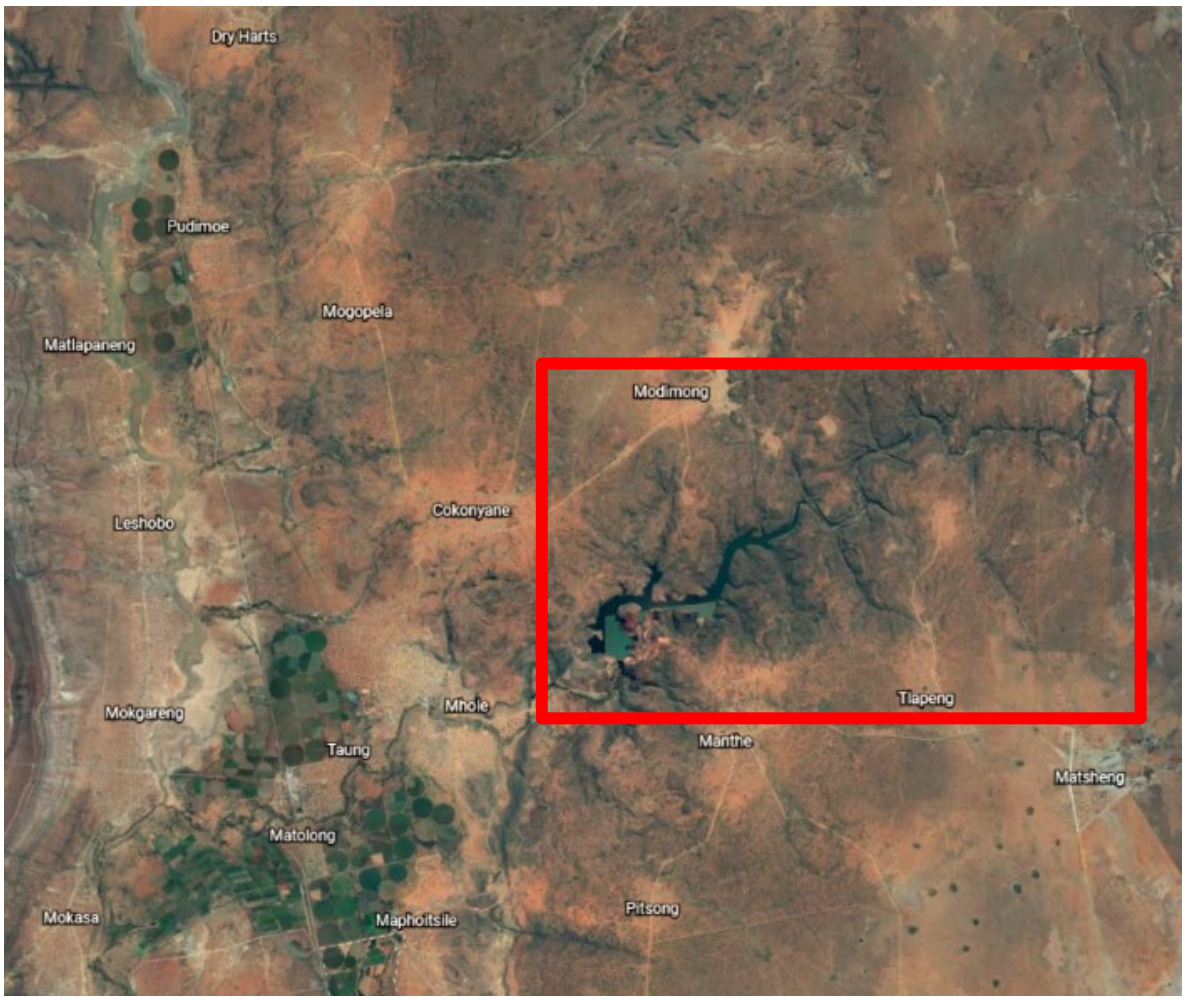
[26] See Chapters Three and Four for a fuller elaboration on these arrangements as an integral part in the development of this area's identity as not only an agricultural hub, but more specifically and irrigation centre for the Bophuthatswana homeland.

[27] CA du Toit, 'n Koste Analise van Besproeiingsboerdery ... (MA, PUvCHO, 1985) pp. 2, & 71-77; J Cowley, & A Lemon, Bophuthatswana: ... *Geography*, 71(3), Jun. 1986, p. 254.

[28] K Shillington, Irrigation, Agriculture and the State: The Harts Valley in Historical Perspective, *In* W Beinart, *et. al.* (eds.), *Putting a Plough to the Ground: Accumulation and Dispossession in Total South Africa, 1850 – 1930* (Ravan Press: Braamfontein, 1986), p. 312.

[29] JW Hudson, Responses to Climate Variability of the Livestock Sector in the North-West Province, South Africa, (MA, Colorado State University, 2002), p. 16.

[30] J Jordaan, The Civil Engineering Aspects of Improvements to the Vaalharts Water Scheme, *Civil Engineering,* 2(3), 1994, pp. 21, & 24.



Map 1-2: Satellite view of Taung Dam, 2020[31]

The Taung Dam was a project for the people commissioned by the Bophuthatswana Government under their Department of Water Affairs and completed in 1993. It was planned and built in consultation with the South African Department of Lands.[32] It was claimed that local communities were extensively consulted leading up to the project, but documentation proof of the statement could not be obtained.[33] Details of its planning and construction are elaborated on in Chapter Five in answer to the fourth research question listed further below. Additionally, even after the Taung Dam was completed, the VHIS continued to supply large amounts of irrigation water to various sectors in Taung and its surrounding areas, whilst irrigation water from the Taung Dam Irrigation Scheme never

[31] Source: Screenshot from Google Earth by author, dated: 16 June 2020.
[32] Smit Personal Archive (SPA), Oral Archive (OA)-26, Mr Ian Smit, Retired employee of Department of Lands, Hartswater: 18 April 2024.
[33] Anon, Taung: A Dam for the People, *Civil Engineer in South Africa,* (2(7), 1994, p. 11.

realised.[34] The main source of water for household use was obtained through one or more community boreholes, powered either by wind or fuel.[35] In 2017 pipelines were installed at Taung Dam to pump water to the Pudimoe Water Works to supply domestic water to surrounding areas, including Taung. This initiative commenced from a feasibility study already launched in 2006 with the involvement of the Vaalharts Water User Association (VHWUA).[36] The Taung Dam Irrigation Scheme should have formed an integral part of the area's agricultural and economic developments, even after the end of apartheid. It seems though that the dam never served one of its main its intended purpose as an irrigation dam.[37] It is for this reason that this historical study investigates various themes in which the project had impacted the people and the environment and may even reveal possible reasons for its disuse.

1.2.2 Background

This study mainly contributes to the field of water history and regional history. In both, the socio-environmental relatedness with community strongly features. Within the diversity that could be covered in the field of water history, the selected focus is on the histories of irrigation scheme developments and related dam construction projects. Dam construction to secure water supplies for various industries in its global and national capacity is appreciated. The impacts of these large economic-driven structures on humans and the environment matters are contextualised, as a short intellectual interest in the history of dams is drawn. Its contribution to and from regional history understanding is largely enshrined in the methodology, as much of the research has formed part of a regional history project of the Taung area.[38]

Investigating possible available sources on various platforms (publishing platforms, online or otherwise), it is apparent that there has been a growing interest in understanding the relationship between humans and water. Some studies look into how water has become

---

[34] JJ Jordaan, The Civil Engineering Aspects of Improvements to the Vaalharts Water Scheme, *Civil Engineer in South Africa*, 2(3), Mar. 1994, p. 21.
[35] JW Hudson, Responses to Climate Variability ... (MA, Colorado State University, 2002), p. 16.
[36] SPA, OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023.
[37] B Haasbroek, Orange-Senqu Infrastructure Catalogue: The Taung Dam, (2013) [online source, accessed: 16 Jun. 2020, http://wis.orasecom.org/orange-senqu-infrastructure-catalogue-reservoirs/].
[38] ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024).

an agent of change as political leaders sought to uplift their people from poverty.[39] Other studies preferred to understand the need and innovative measures humans have applied in securing this life-giving source such as in the broadly covered investigation of water management by Tempelhoff.[40] Oral and written histories also capture various social aspects focusing on the experience of those involved in dam construction.[41] In some instances, the dam construction histories reveal the rosy coloured histories and the dark side of this industry, as seen in Einbinder's book on the history of the Chixoy Dam in Guatemala and Isaacman and Isaacman's history of the Cahora Bassa dam in Mozambique.[42] Considering South Africa's volatile political past, the social impact of the Taung Dam's construction remains of interest. As such, hydro-politics cannot be ignored in a study that seeks to also understand the role of the governments involved in securing and supplying water.[43] Tempelhoff, Turton and Meissner are but some of the experts who have done in-depth research on South Africa's hydro-political history in various water-related fields and its governance.[44] Cross-border, interbasin and transboundary water governance projects have long been part of South Africa's water management attempts. Consider for example the Lesotho Highlands Water Project (LHWP) dating from around 1986 that was planned as a means for more secure water supplies to the South African economic heart, the Pretoria-Witswatersrand-Vereeniging (PWV) area.[45] Though several articles capture the Water Act of 1956 and of 1998 as its respective implementation from the South African government of pre- & post-1994 has been investigated (notably from

---

[39] W Visser, Water as Agent for Social Change, 1900–1939: Two Case Studies of Developmental State Approaches in Establishing Irrigation Schemes, *Historia*, 63(2), Nov. 2018, pp. 40-61; RTJ Lombard, Stigting van die Vaalhartsbesproeiingskema as Heenkome vir Hawelose Armblankes, *Contree*, (24), 1988, pp. 13-20.

[40] JWN Tempelhoff, *South Africa's Water Governance …* (2018); W Scheumann, & O Hensengerth (eds.), *Evolution of Dam Policies: Evidence from the Big Hydropower States* (Springer: Heidelberg, 2014).

[41] C Ammirati, "You'll See Our Tracks": The Raquette River Dams Oral History Project, *Voices: The Journal of New York Folklore,* 43(1-2), Spring-Summer 2017, pp. 24-31; A Mossallam, "We Are The Ones Who Made This Dam 'High'!" A Builders' History of the Aswan High Dam, *Water History*, 6, 2014, pp. 297-314.

[42] N Einbinder, Dams, Displacement and Development: Perspectives from Rio Negro, Guatamala (Springer: Switzerland, 2017), pp. 41-49; AF Isaacman, & BS Isaacman, Dams, Displacement, and the Delusion of Development: Cahora Bassa and its Legacies in Mozambique, 1965–2007 (Ohio University Press: Athens, 2010), pp. 157-158.

[43] R Jankielsohn, Defining hydropolitics: The politics of water in South Africa, *Journal of Contemporary History*, 37(1), 2012, pp. 123-125.

[44] JWN Tempelhoff, *South Africa's Water Governance …* (2018); AR Turton, R Meissner, PM Mampane, & O Seremo, *A Hydropolitical History of South Africa's International River Basins* (Water Research Commission: Gezina, 2004), Report No. 1220/1/04.

[45] R Meissner, *Interest groups, water politics and governance: The case of the Lesotho Highlands Water Project* (Springfield: Heidelberg, 2015), pp. 25-26.

outside the field of history),[46] there still seem to be a lack of scholarly work on understanding the negotiations and political nuances related to water management and its impact on people and the environment from a historical perspective between the South African government and the homeland governments of the previous century, especially regarding dams constructed for irrigation purposes.[47]

One of the biggest sectors that have been impacted by more secure water supplies is agriculture. It was a cornerstone of development and a reason for many of the irrigation projects launched throughout South Africa in the last 150 years.[48] Many of these projects were launched in the mid-20th century as part of government-funded projects.[49] Local and international organisations that had interests in research on related irrigation dam projects included, among others, the International Commission on Large Dams (ICOLD) and the South African National Committee on Large Dams (SANCOLD).[50] The Paul Roberts Collection (PRC) in the South African Water History Archival Repository (SAWHAR) contains several documents regarding the shifts that are visible in the evolution of dam construction in the 20th to 21st centuries.[51] These shifts have mostly coincided with more

---

[46] N Funke, K Nortje, K Findlater, M Burns, A Turton, A Weaver, & H Hattingh, Redressing Inequality: South Africa's New Water Policy, *Environment*, 49(3), Apr. 2007, pp. 12-14; AR Turton, R Meissner, PM Mampane, & O Seremo, A Hydropolitical History … (2004), Report No. 1220/1/04; JWN Tempelhoff, The Water Act, No. 54 of 1956 and The First Phase of Apartheid in South Africa (1948–1960), *Water History*, 9, 2017, pp. 189–213.

[47] One paper referring to the homelands being in charge of their own water supply was South Africa, Department of Water Affairs and Forestry, 2004, *A History of the First Decade of Water Service Delivery in South Africa, 1994 to 2004* (Department: Water Affairs and Forestry), [online source, accessed: 18 October 2020, https://www.gov.za/sites/default/files/gcis_document/201409/dwafirstdecade070720060.pdf], p. 4.

[48] AM van A de Jager, & AH Marais, Die Aanloop tot die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), Jan. 1994, p. 9; FE Kanthack, Irrigation development in South Africa with state aid, *Agricultural Journal of the Union of South Africa*, 36(5), May 1910, pp. 531-539; W Visser, Water as Agent for Social Change …, *Historia*, 63(2), Nov. 2018, pp. 40-61.

[49] SAWHAR/ Department Heads of Water (DHW)/ LA MacKenzie (LM) [2-011], Cost of Dams, correspondence letters dated between 29 April 1952 – 12 May 1952.

[50] International Commission on Large Dams, Publications, [online source, accessed: 15 July 2020, https://www.icold-cigb.org/GB/publications/publications.asp]; South African National Committee on Large Dams, Publications, [online source, accessed 15 July 2020, https://sancold.org.za/publications/]. Another organisation of interest includes the World Commission on Large Dams.

[51] For a glimpse into the types of work done by this organisation and its sub-committees see SAWHAR/ Paul Roberts Collection (PRC)/ ICOLD (PRCIC); SAWHAR/ PRC/ SANCOLD (PRCSC).

secure water supplies and a need for secure food supplies, as well as cleaner forms of electricity generation.[52]

One of the biggest concerns raised by the public and documented in plans for dam construction was the environmental impact of large dams.[53] South Africa was a leading figure in the environmental concerns and solutions to large dam construction projects with the inclusion of the 'Ecological Reserve' into its water laws.[54] Much of the concerns related to large dams caused a slowing down in the rate at which these structures were built towards the end of the 20th century.[55] Despite this, the Taung Dam was still constructed in the early 1990s. Its environmental impact, especially considering the lack of use for its intended purpose, remains a mystery as far as available sources are concerned from the time of its planning.

Adaptation and resettlement of people is a common theme in researching the impacts of dams and often coincides with cries for political outreach, emphasising their social impacts.[56] This also includes those communities involved in the actual construction of dams.[57] However, the effects of dams are also often dependant on their intended purpose,[58] such as dams earmarked for irrigation purposes. Additional impacts relate to how various projects further impacted on, for example, female headed communities.[59] In

---

[52] As captured in the first chapter's introduction: "Food, water, and energy, three of the most critical issues of human development, are all connected with one facility – large dams", *see* P Wang, S Dong, & JP Lassoie, *The Large Dam Dilemma: An Exploration of the Impacts of Hydro Projects on People and the Environment in China* (Springer: New York, 2014), p. xiii.

[53] SAWHAR/ PRC/ PRCIC [3-022], ICOLD, Position paper on dams and environment, pp. 1-7.

[54] The laws related to the ecological reserve had various impacts on the planning, design, construction, use and eventual closure of especially large dam construction projects. *See* L van Vuuren, *In the Footsteps of Giants:* ... (2012), pp. 7-8.

[55] South Africa started with Environmental Impact Assessments on its dams from the 1970s already. *See* JWN Tempelhoff, *South Africa's water governance* ... (2018), pp. 272-273.

[56] N Einbinder, Dams, Displacement and Development: ... (2017); T Scudder, *Aswan High Dam Resettlement of Egyptian Nubians* (Springer: California, 2016); AF Isaacman, & BS Isaacman, *Dams, Displacement, and the Delusion of Development: …* (2010), pp. 91-114.

[57] C Ammirati, "You'll See Our Tracks" …, *Voices: The Journal of New York Folklore*, 43(1-2), Summer-Spring 2017, pp. 24-31; A Mossallam, "We are The Ones Who Made This Dam 'High'!" …, *Water History*, 6, 2014, pp. 297-314; AA Jibowo, & M Mncina, Benefits and Challenges of Maguga Dam Resettlement Scheme to Displaced People in Hhohho Region of Eswatini, *South African Journal of Agricultural Extension*, 47(4), 2019, p. 18-28.

[58] P Wang, S Dong, & JP Lassoie, *The Large Dam Dilemma:* ... (2014) p. xiii.

[59] BP Mogogana, OD Olorunfemi, & OI Oladele, Knowledge and Adoption of Water Use Efficiency Techniques Among Women Irrigators: Evidence from South Africa, *Journal of Agriculture and Environment for International Development*, 112(2), 2018, pp. 271-295; SS Tekana, Impact of Irrigation Farming on Women Empowerment, Food Security and Poverty Status in North-West Province, South Africa (PhD, NWU, 2014).

this case, irrigation may bring more food to the table, but on the other hand bring about more topsoil erosion as new farming methods are implemented on lands that may never have been farmed in a particular manner before.[60]

Though the study aims to contribute to the fields of water and regional history, the socio-environmental, agricultural, economic and political themes interrelate significantly, to such a degree they are essential considerations for an in-depth study of the historical impact of the Taung Dam Irrigation Scheme on the people and their environment. Whether sufficient information is available to undertake a historical study on this topic in the Taung region will be further explored in the problem statement.

1.3 Problem statement

Water-related scholarly work on the Taung area is largely linked to the adjacent water scheme and well-documented VHIS. The VHIS had a significant impact on the area in terms of securing water availability and alternating the overall agricultural practices within Taung.[61] Identifying sources becomes more challenging when doing scholarly research on the Taung Dam Irrigation Scheme in the latter part of the 20th century. A few social sciences and related scientific field researchers, such as Tekana and Acha have attempted to fill this gap in recent years.[62] Mainly focusing on irrigation farming concerning gender studies and empowerment of women as well as the many challenges faced by small-scale farmers, these authors' work contribute to the knowledge of the existing and operational Taung Irrigation Scheme. These studies, however, rely on interviews, which showcases a need for more research on this topic. It also highlights a lack of either available primary material (highly likely) or a lack of interpretation of existing

---

[60] See the growth in genetic manipulation of seeds and other advances in the agricultural sector *in* AN Penna, *The Human Footprint: A Global Environmental History* (Wiley-Blackwell: West Sussex, 2010), pp. 75-81. Changes in biodiversity is also considered *in* GE Acha, Problems faced by small-scale farmers in Taung … (MA, NWU, 2019), pp. 48-50.

[61] AL Claassens, Exploring Water Quality and Farmers' Perceptions About Water and Food Security in the Vaalharts Irrigation Scheme (MA, NWU, 2018); TH Kabanda, Land Use/Cover Changes and Vulnerability to Flooding in the Harts Catchment, South Africa (MA, NWU, 2012); WM Pretorius, Vaalharts: Environmental Aspects of Agricultural Land and Water Use Practices (MA, NWU, 2018). Also consider the impactful changes in society structures and agricultural practices: NASA, BAO, Vol. 5760, Ref. H128-1665, Beplanning - Taung (the file as a whole relates to betterment planning implemented in the Taung region).

[62] SS Tekana, Impact of Irrigation Farming on Women Empowerment … (PhD, NWU, 2014); GE Acha, Problems Faced by Small-Scale Farmers in Taung (MA, NWU, 2014).

primary (archival) material. Their contributions also provide a method of approach to interviews for this research.

Some contributions guide dam history in South Africa, though only a short piece appears in Van Vuuren on the Taung Dam, aptly called 'the forgotten dam'.[63] The lack of scholarly information on the Taung Dam Irrigation Scheme planned in the latter part of the 20th century to sufficiently inform researchers and the people of the region, is clear. The focus of this study therefore aimed to fill this research void.

1.4 Research questions

To properly engage in the topic, some research questions were developed which are intensively discussed as objectives (Section 1.5) in the chapters that follow:

- What would the key methodological understandings required for a historical study of the Taung Dam Irrigation Scheme be?
- What does scholarly research inform on the history of dam construction projects linked to the establishment of irrigation schemes in socially depressed and environmentally sensitive contexts with special reference to the Taung Dam Irrigation Scheme?
- Who were the people that settled in Taung and how has their history shaped their environment and vice versa?
- In what way does Taung's history inform on the status and impact of water use on the agricultural sector since early settlement up to the late 20th century?
- How did the establishment of the Taung Dam Irrigation Scheme unfold, and which motivators served as inspiration?
- How has the Taung Dam Irrigation Scheme impacted the people and the surrounding environment?

---

[63] L van Vuuren, *In the Footsteps of Giants: ...* (2012), p. 323. In a consultation with the author of *In the Footsteps of Giants …* on South Africa's largest dams it became evident that any possibility to get a refined informative reflection on the Taung dam is rare if not impossible in a secondary source, and any documentation still remains of a primary nature in either archives or personal collections: Personal Collection, Nadine Smit (PCNS), e-mail Communication, N Smit/L van Vuuren, 8-9 October 2019.

1.5 Research objectives

- Describe the methodological understandings and motivation for the historical study of the Taung Dam Irrigation Scheme.
- Contextualise the historiography of dam construction projects linked to irrigation schemes in socially depressed and environmentally sensitive contexts with special reference to the Taung Dam Irrigation Scheme.
- Explore the people who settled in Taung and how the environment has impacted their livelihoods, and their activities impacted the environment.
- Inform on Taung's historical status and impact of water use on the agricultural sector from early settlement up to the late 20th century.
- Identify and discuss the key motivators for the establishment of the Taung Dam Irrigation Scheme in its space and time.
- Explore how the Taung Dam Irrigation Scheme has impacted the natural and the human environments.

1.6 Central theoretical statement

Though several scientific and social research studies already reported on the impact and effect of dams on various environments and people around the world, not much has been written on the area of Taung and its dam or irrigation scheme. It is expected that the research will reveal that the dam has not been used much, especially not for its intended purposes, including its environmental impact for irrigation purposes. However, it is foreseen that its social impact will be a different story altogether. Furthermore, it is expected that this study will highlight other features that have played a role in the planning, construction and use of the Taung Dam, including hydro-politics and the political nature of negotiations for the project. Lastly, this study will bring to the fore and add to the repertoire of historical literature seeking to understand the impact of a particular dam irrigation project on a particular people and their immediate environment within a unique political historical timeframe.

1.7 Methodology

As this is a historical inquiry, the central form of the methodology followed relies on the traditional historical method that emphasises the value of primary source material and,

above all, source criticism.[64] The study was further enriched by adaptations of other disciplines, such as anthropology and ethnography. These two disciplines' methods of inquiry add to the understanding of the people in the area.[65] Water history formed a cornerstone of this study and various authors' work in this field, with a particular interest in dam irrigation history, was relied upon for guidance and is referred to. Additionally, regional history approaches flowed naturally as the research coincided with a larger study into the regional history of Taung in which the author has participated. In this section, an overview of the research design is given along with a short literature review with references to Chapter Two.

1.7.1 Research design

The study relied on critical source analysis in its attempt to sift through several primary sources as very little secondary material on the Taung Dam Irrigation Scheme exists. Much of the primary research relied on archival sources, interviews and the potential of desktop research hosting secondary sources. All sources were exposed to internal and external source criticism as deduced from the historical methodology.[66] The research was conducted within a focused historical theme namely the water - and regional history of a particular area. The study area has a dynamic regional history, especially regarding its shifting political borders and the 'owners' and users of the said land.[67] It is along this line of thought that Turton, *et al.* and Jacobs respectively reflect on the impact politics and power have on shaping the environment and the people that live in it.[68] The socio-

---

[64] S Fellman, & M Rahikainen, *Historical Knowledge: In Quest of Theory, Method and Evidence* (Cambridge Scholars Publisher: Newcastle upon Tyne, 2012), pp. 1-2. Marwick's understanding of sources (primary and secondary) and source criticism is also appreciated, *see* A Marwick, *The new Nature of History*, 3rd ed., (Palgrave: Houndsmill, 2001), pp. 22-28.

[65] Instead of relying on the limiting understanding of Marwick to the contributions anthropology as a field of study hold for the historian, the author prefers to look towards the suggested anthropology of mentality in its possible contribution (through methodology) to this study as explained by J Tosh, *The Pursuit of History: Aims, Methods and New Directions in The Study of History*, 6th ed. (Routledge: London, 2015), pp. 221-224.

[66] A Marwick, *The Nature of History*, 3rd ed. (MacMillan: London, 1989), pp. 221-229.

[67] S Riukulehto, Regional History Between Time and Space, *In* S Riukulehto (ed.) *Between Time and Space* (Cambridge Scholars: Newcastle upon Tyne, 2015), p. 3.

[68] Consider Meissner's statement in his executive summary: "Where the Hydropolitical Histories are Similar, is Where The Rivers' Development Follows The General Socio-Economic And Political Progression if South African Society.", *see* AR Turton, R Meissner, PM Mampane, & O Seremo, A Hydropolitical History … (2004) Report No.: 1220/1/04, p. i; and Jacobs critically evaluate the influences of 'man' on environment and those with power on the marginalised people within those environments. *See* NJ Jacobs, *Environment, Power & Injustice: A South African History* (Cambridge: UK, 2003), pp. 217-221.

environmental interest for this study, however, is not so much on the impact of people on the environment but rather the impact the dam and intended irrigation scheme had on the people and their interpretation of their surrounding environment. It is for this reason, along with an interest in the role that the movement of people played in their interpretation of the dam and its impact on them, that the study also relied upon methods of interpretation from regional historians Van Eeden and Riukulehto.[69]

Van Eeden suggests a framework that calls to write regional history from below and from the top because an overreliance on only one approach may not give as complete a picture as a combination of the two.[70] This study thus aimed to tell the story of the people affected, and of those visionaries who planned for the dam irrigation project. Though the study could benefit from a mixed method, it followed a qualitative approach with only limited reference to quantitative data as interviews and archival research in their primary form are relied on and weighed against each other. This is how the author aimed to cover the full developmental aspects of the construction of the planned irrigation scheme and accompanying dam within the framework of a water – and regional history and all that it entails as suggested by Van Eeden.[71] But it is not only the aspect of regional history from fellow regional historian Riukulehto that is of interest. An understanding of his and Rinne-Koski's work on homeliness also aided in providing a better historical context of the people in the area and their relationship with the Taung Dam.[72] The essence of homeliness as understood in their methodology does not specifically form the basis of this study's methodology, but rather aided in looking into the historical consciousness of Taung's people before and after the completion of the dam. It is especially in the method used in his homeliness studies where ethnographic research comes to the fore that was of interest for this study's analysis of the social impact of the dam.[73] It was expected and

---

[69] ES van Eeden, Challenging Traditional Ways of Constructing Local/Regional History Research in South Africa: Some global learning and sharing, *International Journal of Regional and Local History,* 9(1), 2014, pp. 27-43; S Riukulehto, Regional history between time and space, *In* S Riukulehto (ed.) *Between time and space …* (2015), pp. 1-21.

[70] ES van Eeden, Challenging Traditional Ways of Constructing Local/Regional History..., *International Journal of Regional and Local History,* 9(1), 2014, pp. 35-36.

[71] ES van Eeden, Challenging Traditional Ways of Constructing Local/Regional History..., *International Journal of Regional and Local History,* 9(1), 2014, pp. 36-37.

[72] S Riukulehto, & K Rinne-Koski, Historical Consciousness and The Experimental Idea of Home, *in* S Riukulehto (ed.) *Between Time and Space …* (2015), pp. 115-134.

[73] S Riukulehto, & K Rinne-Koski, Historical consciousness …, *In* S Riukulehto (ed.) *Between time and space …* (2015), pp. 115-116.

found that the use of interviews drew from participants a sense of what they knew of the dam and irrigation works; their relation to it and the meaning of its presence in their lives. By also understanding the people's relationship with water as an essential source for agricultural practices in the Taung area better, the researcher attempted to evaluate the historical relationship people in this semi-arid region share with water and the environment.

Understanding the movement and settlement of people and the influence of hydro-politics on human relations and the area's water infrastructure development as a border district formed part of the qualitative investigation. Quantitative information was largely limited to demographic statistics and those statistics related to the dam and the relevant agricultural sector's reliance thereon. The methods of analyses also drew from scholars in water and regional history that touch upon various sub-themes such as hydro-politics, environmental history and impact studies from schools of the social sciences. The history of the Taung Dam is thus not an endeavour to purely capture its construction, use and disuse, but this study sought to understand the historical impact of a particular irrigation dam project on the relationships between the surrounding environment and subsequently the people. Some understanding of this line of thought has been obtained from Van Eeden in the search for a better socio-cultural understanding of people and how they have integrated with their changing environment.[74] Drawing from hydro-political studies such as Jankielsohn, the author investigated different perspectives on the influence good water management may have on people and their mindset toward water and water infrastructure from a political viewpoint.[75] Thus looking at the influence of good or poor service delivery on the acceptance of the presence of the unfinished Taung Dam Irrigation Scheme and how this changed from the beginning of construction, to becoming a proverbial 'white elephant', to once again forming part of plans for economic growth. It was hoped that with the interpretation of many primary sources, this study will add to the richness of the available sources on Taung as a region in its historical essence, and to the theme of water and regional history, specifically irrigation and dam history in general.

---

[74] ES van Eeden, Challenging Traditional Ways of Constructing Local/Regional History ..., *International Journal of Regional and Local History*, 9(1), May 2014, pp. 27–43.

[75] R Jankielsohn, Defining Hydropolitics: The Politics of Water in South Africa, *Journal of Contemporary History*, 37(1), Jun. 2012, pp. 123-141.

1.7.2 Literature review

The impact of the work on the Taung Dam Irrigation Scheme, as far as it was completed, is not well documented, especially regarding agricultural, environmental, or social aspects. Secondary sources on these related topics were difficult to find. There does, however, seem to be a relatively strong indication of primary source material to work from, especially in the form of archives and interviews. For this reason, the historical approach of external and internal source criticism was important. In this section, a brief overview of potential and available sources is presented.

1.7.2.1 Secondary source research

As mentioned before, the research topic of this study is linked to the themes of water and regional history and leans on the methodology of history and various other fields for the interpretation of available sources. Agriculture and water may be regarded as the best-suited themes for this study, however, Pienaar argues in his introductory notes that no amount of planning for secure water supplies could or should be done in isolation.[76] Though his reason was to promote the sustainable use of water, the lesson is also reflected in research since water significantly interrelates with other fields of study. The social and political impact of irrigation schemes on communities are captured by authors such as Visser.[77] He weighs the influence of political investment made in the success of the respective irrigation schemes implemented in the Kammanassie and Buchuberg Dams in the first half of the 20th century. That is why sources for the interpretation of this study's research topic include social impact studies such as Visser's representation of older schemes and Tekana and Oladele's study of more recent schemes such as that of Taung itself.[78]

Tekana and Oladele's research on the Taung scheme brings another social impact study relating to gender to the fore as they investigate the presence of men in male-headed households within the parameters of the scheme. The author's attention is, therefore, also drawn to various gender studies concerning irrigation schemes and their impact on the

---

[76] PG Pienaar, Water for Agriculture, *Aqua*, (3), 1987, p. 1.
[77] W Visser, Water as Agent for Social Change, 1900–1939 …, *Historia*, 63(2), Nov. 2018, pp. 40-61.
[78] SS Tekana, & OI Oladele, Impact Analysis of Taung Irrigation Scheme …, *Journal of Human Ecology*, 36(1), 2011, pp. 69-77.

social structures within communities. For example, Mogogana, Olorunfemi and Oladele note how irrigation schemes play a positive role in the empowerment of female-headed households.[79] They also argue that secure water supplies bring forth food security and a more sustainable environment. With this, the environmental impact of irrigation schemes has been brought to the author's attention.

Various international and local researchers have done environmental impact studies on irrigation schemes and dams.[80] These include official reports by institutions such as the United Nations Environment Programme (UNEP). In one of their reports, interest is shown in the biodiversity impacts of dams with researched recommendations for future, more environmentally sustainable construction projects.[81] Of similar interest is work done by international experts on the changing policy developments for dam construction around the globe with foci ranging from current practices to sustainable development as well as transnational agreements.[82] Various studies of this nature have deduced that the negative impact of large dam projects sometimes outweighs the positives. One such study, though excluding an irrigation scheme, refers to the direct environmental impact and brings to the attention secondary impacts such as the political nature of large projects that are often transboundary (requiring official agreements between two nations or governments).[83] It is secondary impacts such as these that may be more relevant to the historical impact of the Taung Dam Irrigation Scheme.

The politics of water history is a field almost onto itself, known better as hydro-politics or even hydro-political history. Meissner and Turton are among some of the fervent researchers in the field of water politics with a specific focus on water management and

---

[79] BP Mogogana, OD Olorunfemi, & OI Oladele, Knowledge and Adoption of Water Use Efficiency …, *Journal of Agriculture and Environment for International Development*, 112(2), pp. 271-295.

[80] *Consider* A Isaacman, & C Sneddon, Toward a Social Environmental History of The Building of Cahora Bassa Dam, *Journal of Southern African Studies,* 26(4), Dec. 2000, pp. 597-632; PMJ Verwey, & PD Vermeulen, Influence of Irrigation on The Level, Salinity and Flow of Groundwater at Vaalharts Irrigation Scheme, *Water SA*, 37(2), Apr. 2011, pp. 155-164; L van Vuuren, Together We Can Do More – Environmental Consciousness in The South African Dam Construction Sector (1945-1980), *TD: The Journal of Transdisciplinary Research in Southern Africa,* 9(1), Jul. 2013, pp. 51-80.

[81] DE McAllister, *et al.*, Biodiversity Impacts of Large Dams, Background paper 1, (IUNC, 2001), pp. 53-58.

[82] W Scheumann, & O Hensengerth (eds.), *Evolution of Dam Policies* … (2014).

[83] *See* LB Lerer, & T Scudder, Health Impacts of Large Dams, *Environmental Impact Assessment Review*, 19(2), 1999, pp. 113-114, 119-120.

water transfer schemes such as the Lesotho Highlands Water Project.[84] Jankielsohn attempts at a definition. His study saw the use of sources including topics from environmental change to conflicts, water wars, political developments, legal rights, and even racial conflicts in America.[85] It is thus safe to say that hydro-politics by his understanding is not as simple an aspect as considering the politics of the day concerning water governance. Yet again, a more holistic approach is encouraged.

The level of the transdisciplinary nature of water studies is also captured by Nyandoro's historiography and reference to various authors' works in the field of water specifically the water history of southern Africa,[86] describing water as a life-giving source and a fundamental ingredient in the governance and maintenance of societies. Water historian Tempelhoff has made many contributions towards various historiographies of South Africa's water history, showcasing the rich plethora of secondary sources on dams and water studies.[87] Other historians and researchers in other fields who have added their voice and expertise to the field of water studies include Jacobs as an environmental historian; Turton, Meissner and Van Vuuren as experts in their respective fields of water management and dam history in South Africa, and Roberts that specialised mainly as dam engineer.[88] Da Costa is one of the researchers who also combined his research of water and dam management with that of the environmental impact of dams with a specific focus on the Brazilian situation and the processes involved in acquiring two major hydropower plants.[89] His study brings a refreshing perspective on how these structures

---

[84] R Meissner, *Interest Groups, Water Politics and Governance …* (2015); AR Turton, R Meissner, PM Mampane, & O Seremo, A Hydropolitical History … (2004), Report No.: 1220/1/04.

[85] R Jankielsohn, Defining Hydropolitics: ..., *Journal for Contemporary History*, 37(1) Jun. 2012, pp. 137-141.

[86] M Nyandoro, Water and The Environment in Southern Africa: A Review of The Literature Since 1990, *The Journal for Transdisciplinary Research in Southern Africa*, 15(1), 2019, pp. 1-2.

[87] As examples there is JWN Tempelhoff: JWN Tempelhoff, 'n Historiografiese Verkenning van Watergeskiedenis, *Koers*, 70(3) 2005, pp. 473-514 and JWN Tempelhoff, Recent Trends in South African Water Historiography, *TD: The Journal of Transdisciplinary Research in Southern Africa*, 4(1), Jul. 2008, pp. 271-296; A search in Google Scholar for the concept "Water History" also proved insightful with 3 770 000 search results (Date: 24 June 2020).

[88] JWN Tempelhoff, *South Africa's Water Governance* ... (2018); NJ Jacobs, *Environment, Power & Injustice: …* (2003); AR Turton, R Meissner, PM Mampane, & O Seremo, A Hydropolitical History … (2004), Report No.: 1220/1/04; L Van Vuuren, Large Dams and The Environment: SA's Cooperative History (1945-1980), *Civil Engineering*, Aug. 2013, pp. 40-45; SAWHAR/ PRC/ Personal (PRCP) [6-006], CPR Roberts, Environmental geotechnics for water projects, pp. 58-68, *in* Course on Environmental Engineering with Geotechnics.

[89] A da Costa, Sustainable Dam Development in Brazil: The Roles of Environmentalism, Participation and Planning, *in* W Scheumann, & O Hensengerth (eds.), *Evolution of Dam Policies* … (2014), pp. 13-53.

have historically been understood. Studies into dams built for irrigation purposes in South Africa date back as far as 1910 with Kanthack investigating state aid and irrigation development.[90] In 2017 Van Averbeke, Denison and Mnkeni attempted a better understanding of the workings of and gaps in the research of smallholder irrigation schemes in South Africa.[91] For a better understanding of the contexts of irrigation works sources such as these and others mentioned have been considered, especially regarding their impact on communities.

The history of dams is visible in various studies reflecting many of the numerical statistics on dams, their types and construction as captured in engineering magazines and annual reports from national and international institutions such as SANCOLD and ICOLD respectively.[92] A recent, more dualistic attempt, was made into the national history of dams in South Africa by Van Vuuren that includes statistics, but also the social history of dams.[93] It enshrines the dependency of a successful nation on secure water supplies and a need for more research into the impact of dam construction on the human and natural environment. Though some socio-environmental perspectives on the impact of irrigation development are recent endeavours,[94] hydro-political histories for South African scholars are not something new. Not with the large number of dams and financial investments made over the last hundred or so years in the development of water and irrigation infrastructure.[95] However, for the Taung Dam and its controversial political past much of its history still lies untouched in archives such as the National Archive of South Africa and the provincial archive of the North-West Province. Many other related archival sources are available from within the South African Water History Archival Repository

---

[90] FE Kanthack, Irrigation Development …, *Agricultural Journal of the Union of South Africa*, 36(5), May 1910, pp. 531-539.

[91] W van Averbeke, J Denison, & PNS Mnkeni, Smallholder Irrigation Schemes in South Africa: A Review of Knowledge Generated by The Water Research Commission, *Water SA*, 37(5), pp. 797-808.

[92] Also obtained from SAWHAR.

[93] L van Vuuren, *In the Footsteps of Giants* ... (2012), pp. 1-2.

[94] W Visser, Water as An Agent for Social Change …, *Historia,* 63(2), Nov. 2018, pp. 40-61; SS Tekana, & OI Oladele, Impact analysis of Taung Irrigation Scheme …, *Journal of Human Ecology*, 36(1), 2011, pp. 69-77.

[95] AM van A de Jager, & AH Marais, Die Aanloop Tot Die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), Jan. 1994, p. 9; FE Kanthack, Irrigation Development …, *Agricultural Journal of the Union of South Africa*, 36(5), May 1910, pp. 531-539; W Visser, Water as Agent for Social Change …, *Historia*, 63(2), Nov. 2018, pp. 40-61.

(SAWHAR).[96] Various personal collections of engineers from within (but also outside) this archive have brought valid information to the fore. Though archival research as a primary source holds much value, aspects of water history in South Africa are still unexplored. Research potentialities are also held in the oral histories and stories[97] that are encapsulated in the social histories of dam construction workers[98] and even further environmental histories[99] of dams in South Africa.

1.7.2.2 Primary source research - archival data collection

Data collections were in the form of desktop and archival research, visiting libraries, and semi-structured and spontaneous interviews. Desktop research includes the traditional search for available online information but also extended to exploring local social media pages such as Facebook and YouTube. Though the former largely yielded secondary source information, the latter along with the other sources of information lead to more primary source information. It was also hoped that much can be brought to the fore by reaching out to persons or parties involved in the construction of the dam and visiting various archives. As such, the National Archive of South Africa was an important source of information, though locally held archives in Taung and the provincial city of North-West Province, Mafikeng were also important for this study. Though archival information from the Cape Town archives were hoped to yield information sensitive to a political atmosphere it should be noted that the author did not personally visit it, and it may prove to be a gap in this study. It can also be assumed that after these initial sources of information have been investigated, they may each lead to more potential sources of information. One example is that the North-West University in its previous capacity as the *Potchefstroomse Universiteit vir Christelike Hoër Onderwys* (PUvCHO) was somehow involved in the investigations and feasibility studies of the Taung irrigation works.[100] Thus, archival research also extended to this entity. Research from these primary sources may

---

[96] *See for example* SAWHAR/ WaterLit Collection/ C2186, Proceedings from the southern African irrigation symposium from June 1991 held in Durban, (WRC: Pretoria, 1995).

[97] C Ammirati, "You'll see our tracks": …, *Voices: The Journal of New York Folklore,* 43(1-2), Spring-Summer 2017, pp. 24-31.

[98] A Mossallam, "We're the ones who made this dam High!": …, *Water History,* (6), 2014, pp. 297-314.

[99] A Isaacman, & C Sneddon, Toward a Social and Environmental History of The Building of Cahora Bassa Dam, *Journal of Southern African Studies*, 26(4), Aug. 2010, pp. 597-632; L van Vuuren, Large Dams and The Environment: …, *Civil Engineering*, Aug. 2013, pp. 40-45.

[100] NASA/ BAO/ Vol. 3/4835, Ref. A14/12/7/2/T4, Ontwikkelingswerk Watervoorsiening Besproeiing Taung: Samewerking en Ontwikkeling, Deel 1, p. 251.

highlight matters related to the planning and construction of the Taung Dam Irrigation Scheme. For impact studies before, during, and after the completion of the Taung Dam, interviews proved to be the most fruitful of sources.

1.7.2.3 Primary source research - interviews

Informal, unstructured interviews included those conversations that lead to building trusted relationships with potential research participants (interviewees) as sources of reliable information. Semi-structured interviews allowed the researcher to ask immediate follow-up questions for better clarification of the structured questions. The latter were phrased as probing (open-ended) questions to allow participants to lead the conversation. Follow-up questions were then used to steer the conversation to stay on the topic. This allowed for a flexible mode of data-gathering without losing the credibility and trust of the participants.[101] The study also borrows from Riukulehto and Rinne-Koski as attempts were made to understand local inhabitants' relationship with water in general, the Taung Dam and also water used for agricultural purposes and its origins.[102] Their attempt at obtaining interviewees' historical sense of place brings forward an interesting perspective and allows the author to put the person and their sense of place (though focusing on water rather than homeliness) in perspective, historically and presently.[103] Visits to the area and its related people provided an opportunity for interviews. Gatekeepers were identified beforehand to ensure the relevant information were gathered in a timely, and ethical manner. For a more detailed understanding of potential interviewees and how these interviews were held, consult the section on ethical considerations.

1.8 Ethical considerations

As previously mentioned, the study formed part of a larger research project entailing a regional history of Taung.[104] The project is done under the auspices of the North-West

---

[101] J Cresswell, *Qualitative Inquiry and Research Design: Choosing Among Five Traditions* (Sage: Thousand Oaks, CA, 2008), *as referred to by* H Coetzee, W Nell, & C Bezuidenhout, An Assessment Of Perceptions, Sources and Uses of Water Among Six African Communities in The North West Province of South Africa, *Water SA*, 42(3), Jul. 2016, pp. 434-435.

[102] S Riukulehto, & K Rinne-Koski, Historical Consciousness and The Experimental Idea of Home *in* S Riukulehto (ed.) *Between Time and Space …* (2015), pp. 115-121.

[103] S Riukulehto, & K Rinne-Koski, Historical Consciousness and The Experimental Idea of Home *in* S Riukulehto (ed.) *Between Time and Space …* (2015), pp. 121-131.

[104] *See* ES Van Eeden, & A Manson (eds.), *Taung in history …* (2024)

University (NWU), School of Social Sciences under the leadership of Professor Elize van Eeden from the Department of History. Information obtained during this study may thus be used for the larger research project, and vice versa. The following section covers some ethical issues that were necessary to consider as this study progressed.

Though the study is historic, interviews were necessary to better formulate an understanding of how people have historically viewed and currently view the Taung Dam Irrigation Scheme and its historical impact. These interviews were considered low risk since the purpose was mainly enshrined in finding out how they remember the initial stages of the dam's existence and the feelings (such as hope) that were harboured by its construction. Research participants (interviewees) were identified by gatekeepers and contacted. The interviewees were mostly spontaneously selected, except where gatekeepers purposefully identified possible persons for an interview. The criteria were that they should be well informed on the topic and the general area's historic, socio-cultural and political context in which the research is embedded. It is acknowledged that language constraints[105] could hinder the full and truthful interpretation of potential interviews and other sources of locals. To overcome this potential problem, the assistance of well-equipped translators was used.

Each potential interviewee was required to fill in a permission and informed consent form for the use of any information that may be gained from them. This was done after the researcher had fully explained the nature and purpose of the study. This information was also be captured on a cover letter as required by the NWU's ethics standards for research. Though the nature of the study does not seek to obtain information of a sensitive nature, interviewees were informed that they were at any point in time allowed to request that their contribution be kept anonymous or able to withdraw completely should they no longer wish to participate. It is noted that none of the interviewees has request anonymity.

All information obtained was always thoroughly analysed for its truthfulness and no false information was used for this study. Any information obtained in this terrain and for this study will be stored at a place chosen by the study leader at the University for a minimum

[105] Most of the indigenous local inhabitants are Tswana speaking. *See* StatsSA, 2011, Greater Taung. [online source, accessed: 9 June 2020, http://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality].

period of five years, as per ethics requirements. The study's ethical clearance number features as: NWU-00652-21-A7.

1.9 Limitations of the study

The impact of COVID-19 has caused abruption in the fieldwork process of this project. Having no face-to-face access to people for some time as well as minimal archival access (limited hours per day) were the dominating challenges. However, during the archival visits made to the National Archive of South Africa as well as during desktop research the researcher found that another limitation had to be explained. When searching for information on the word combination "Taung Irrigation Scheme", two references appeared. The period of the study focused on the Taung Dam Irrigation Scheme in the early 1990s which was never completed. However, many of the sources refer to another Taung Irrigation Scheme that dates to the 1930s. The latter scheme relates to the VHIS in which its stakeholders negotiated for land in the Taung Native Reserve (TNR). These negotiations as previously alluded to, resulted in the provision of irrigation water to a large portion of land within Taung, aptly named the Taung Irrigation Scheme. This is a constant confusion, and the researcher believes most of the information in the Mafeking Provincial Archive will help clarify this. The limitation of movement in 2020 greatly impeded this venture. Additionally, lost content due to the transfer of documents between magisterial departments, and damage to documents due to unsatisfactory climate control and other natural disasters have also been noted from especially the Mafikeng Provincial Archive. After the restrictions of Covid were lifted, interviews became a possibility but posed its own challenges as the availability of some interviewees proved troublesome. Even with the presence and assistance of translators during interviews with Tswana-speaking persons, language barriers remained a constraint.

1.10 Significance of the study

Apartheid South Africa and its former homelands have been much researched, especially regarding their political history.[106] This study, however, attempts to shift the focus to another theme that is just as important yet much under-discussed. The socio-

[106] A search in Google Scholar for the term "South African History" gave ample examples to this statement.

environmental history of the Taung area as enshrined within its water and regional history will be the main thematic approach of this study. The Taung Dam situated near the town after which it is named was built as part of the attempt of the Bophuthatswana homeland government to gain even further independence from the oppressive South African state of the time. Through entry-level research it is apparent that this study will add to the intellectual repertoire of the area's rich history as its historical context is brought to the fore. Key motivators for the establishment of the Taung Dam Irrigation Scheme are enshrined in the purposes for the dam. It was not only to serve as an attempt to promote agriculture for food production but also to establish economic growth through other sectors.[107] Its political agenda is, however, a theme not to be ignored. This study will showcase how a former homeland was able to successfully negotiate with the apartheid government to further its development. The impact of the Taung Dam Irrigation Scheme on the community and their environment was thus far still largely unexplored in historical works. With a deepened archival research effort, and a robust study of available secondary sources, this study aims to add value and a refreshing perspective on the history of dams and irrigation works and also to create an understanding of the socio and environmental impact of Taung's water history on its people.

1.11 Conclusion

This Chapter aimed at providing direction to the reader of the researcher's understanding on how the study can be best approached methodologically in order to do this historical study on the impact of the Taung Dam Irrigation Scheme from 1977 to 2023 in the best possible way/ The reader is introduced to the topic of the "white elephant" - the Taung Dam, as questions surrounding its origins and needs surfaced. Taung is briefly contextualised in its spatial and historical context as an area that has featured a strong presence of the Batlhaping (a tribal nation of the Batswana since the 18th century. Geographically, the area has been of interest to many who have passed through it, each impacting the agricultural endeavours of the local population. One such endeavour was the Taung Dam Irrigation Scheme as part of the political socio-economic goals of the Bophuthatswana homeland between 1977 and 1994. As part of an investigation into the

[107] AR Turton, R Meissner, PM Mampane, & O Seremo, A Hydropolitical History … (2004), Report No.: 1220/1/04, pp. 227-229.

agricultural past of the area, the nuances of the history of the incomplete scheme raised interest. To probe into this history the author committed to use the historical line of inquiry relying on the interpretation of primary and secondary sources by critically analysing everything which necessitated exploring the available scholarly research on the topic. For this reason, the next chapter discusses the research local and international experts have done concerning irrigation schemes and subsequent dam construction histories in general. This is done within the listed ethical considerations and limitations of the study.

CHAPTER 2 INTELLECTUAL PERSPECTIVES ON IRRIGATION SCHEME HISTORIES

2.1 Introduction

Though water is often considered essential to all life on earth, the concept of securing its supply for agricultural purposes is arguably as old as the practice of farming for food.[1] As engineering ingenuity developed, irrigation schemes became larger and more complex, often accompanied by storage facilities, such as large dams.[2] The intricacy of agriculturally driven irrigation schemes has been of interest to many scholars investigating the origins and demise of societies in days past.[3] The first chapter of this study provided a structural way forward to think about, scholarly understanding and approach the study. As a first aim, the search for intellectual perspective and context on topics such as irrigation scheme developments and the role of agriculture in it were explored. Thinking globally and continentally while intellectually travelling closer to the south, with Taung as a focal point, became both exciting and challenging. Exciting because of the large corpus of secondary knowledge the author could draw from, but challenging due to the enormity of the task to see where the gaps in knowledge for this study lie. The main interest is to draw from the scholarly work of historians, but where research interests in this multidisciplinary-driven environment overlap with other disciplines, attempts are made to infuse and acknowledge these contributions. The global debate is viewed from the scholarly field of irrigation history as a point of departure.

---

[1] A Baba, C Tsatsanifos, F El Gohary, J Palerm, S Khan, SA Mahmoudian, AT Ahmed, G Tayfur, YG Dialynas, & AN Angelakis, Developments in Water Dams and Water Harvesting Systems Throughout History in Different Civilizations, *International Journal of Hydrology,* 2(2), 2018, p. 150; A Leone, Water Management in Late Antique North Africa: Agricultural Irrigation, *Water History*, 4, 2012, pp. 119–120; R Meissner, Water As ‘n Bron Van Politieke Konflik en Samewerking: ‘n Vergelykende Studie Van Die Midde-Ooste en Suider-Afrika (MA, Randse Afrikaanse Universiteit (RAU), 1998), pp. 11-12.

[2] L van Vuuren, *In the Footsteps of Giants …* (2012), p. 1; JWN Tempelhoff, *South Africa’s Water Governance ...* (2018), pp. 1-3; M Ertsen, Irrigation and Landscape: An Interdisciplinary Approach, *in* SJ Kluiving & EB Guttmann-Bond, *Landscape Archaeology Between Art and Science: From a Multi- To an Interdisciplinary Approach Book* (Amsterdam University Press: Amsterdam, 2012), p. 46.

[3] J van Schilfgaarde, Irrigation - A Blessing Or a Curse (Review Article), *Agricultural Water Management,* 25, 1994, pp. 203-204.

2.2 Global perspectives on the development of irrigation schemes and dam histories

From biographies of irrigation pioneers,[4] and social control by despotic leaders,[5] to frontier histories[6] and histories of thriving ancient and modern societies and rivers.[7] These are but some of the key topics in research papers by scholars worldwide and seemingly (but not exclusively) dating back to approximately the 1930s.[8] No doubt the global drought of the time had a role to play in growing interest among scholars on topics relating to thriving societies, especially where secure food and water supplies are discussed. From an academic perspective reflecting on the interest in irrigation histories in the USA began in the early 20th century were several researchers with a distinct focus on frontier history, combined their focus with that of the expansion of irrigation agriculture in the American West. Ganoe[9] (in 1938) like Hess[10] (in 1912), wrote in their respective articles with the same title about the beginning stages of irrigation practices in the USA. Each, however, took a somewhat different angle with Hess very much focusing on the storyline of when and where irrigation practices started in the American West. Both authors (though Hess in much more detail) reflected on the evidential remnants of ancient historic irrigation practices dating to the 8th-9th century, after which they jumped to the late 18th century of Spanish missionary engagements in the area, and then both moved to their main reflections beginning in the mid-19th century to contemporary events. Ganoe's focus on

---

[4] Mention of international examples is made a little later in this chapter.

[5] Several authors picked this theme apart after the publication *of:* KA Wittfogel, *Oriental Despotism: A Comparative Study of Total Power*, (Yale University press: New Haven, 1957). *Example* LL Fuller, Irrigation and Tyranny, *Stanford Law Review*, 17(6), Jul. 1965, p. 1021.

[6] Many of these typical studies can be linked to frontier histories such as that of HT Lovin, Dreamers, Schemers, and Doers of Idaho Irrigation, *Agricultural History*, 76(2), Spring 2002, pp. 232-243. More examples are specifically referred to in this chapter.

[7] For example, Wulfhorst and Glenn reflects on the close relationship between people and water, especially in arid areas such as the dry American West. *See* JD Wulfhorst, & E Glenn, Irrigation, Community, and Historical Development Along the Upper Snake River, *Agricultural History, Water and Rural History*, 76(2), Spring 2002, pp. 434-447. Not to be excluded though are the thriving ancient civilizations under the Roman Empire. Consider for example the foci on ancient Roman aqueducts *in* HC Butler, The Roman Aqueducts as Monuments of Architecture, *American Journal of Archaeology*, 5(2), 1901, pp. 175-199; YA Lolos, The Hadrianic Aqueduct of Corinth (With an Appendix on The Roman Aqueducts in Greece), *Hesperia: The Journal of the American School of Classical Studies at Athens*, 66(2), 1997, pp. 271-314.

[8] Acknowledgement needs to be given to sources cited by especially Ganoe, which dated back to 1902. It seems academic interest in the topic can therefore be traced to the very beginning of the 20th century, e.g. (as cited by Ganoe) EE Sparks, Irrigation and The American Frontier, *Chatauquan,* 35, 1902, pp. 568-572.

[9] JT Ganoe, The Beginnings of Irrigation in The United States, *The Mississippi Valley Historical Review*, 25(1), Jun. 1938, pp. 59–78.

[10] RH Hess, The Beginnings of Irrigation…, *Journal of Political Economy,* 20(8), 1912, pp. 807–833.

the other hand was quite different for a historian of his time. His emphasis on how man's attempts to trump nature with their ingenuity as a delusion was quite evident, but the focus of his paper reflects on the legislative endeavours of those in governmental positions to manage water and subsequent regional development also features. Both, ultimately, reflect on the reasons for the expansion of irrigation agriculture in the previous few decades and like in the case of South Africa, could to some extent be assigned to the growth in mining interests in the involved areas.[11] Nearly three decades later (in 1940 and 1953 respectively), Sterling[12] and Kreshner[13] took this topic further, reflecting once more on frontier histories in the USA and also in Australia. Sterling's research (not unlike Ganoe[14]), once more brought the ever-present question of conflict over access to land and additionally access to water rights to the fore – a persistent theme in irrigation histories of many countries and places[15] – and usually visible in legislative proceedings and reports of possibly all countries. Lees visits the topic of irrigation and its impact on society at large by also re-reviewing the writing of Wittvogel's 'Hydraulic Theory' on despotic leaders and their control over a region's water resources.[16]

Biographies also contribute to understanding how, especially, engineers and directors of irrigation boards went about planning the implementation of successful irrigation settlement schemes. With an initial search into irrigation histories in online repositories, this seemed like a prevalent topic in Australia, with Kershner too relying quite heavily on biographies.[17] A likely reason may be due to its severe aridity and feats of success with

---

[11] L Thompson, *A History of South Africa*, (4th ed.), (Yale University Press: New Haven, 2014), pp. 110-115.

[12] EW Sterling, The Powell Irrigation Survey, 1888-1893, *The Mississippi Valley Historical Review*, 27(3), Dec. 1940, pp. 421–434.

[13] FD Kershner (Jr.), George Chaffey and The Irrigation Frontier, *Agricultural History*, 27(4), Oct. 1953, pp. 115-122.

[14] JT Ganoe, The Desert Land Act in Operation, 1877-1891, *Agricultural History*, (Washington), 11, 1937, pp. 142-157. Sterling himself also references Ganoe's contribution to better understanding the impact of legislature on irrigation prospects, *see* EW Sterling, The Powell Irrigation Survey, 1888-1893, *The Mississippi Valley Historical Review*, 27(3), Dec. 1940, p. 423.

[15] WE Willmott, Dujiangyan: Irrigation and Society in Sichuan, China, *The Australian Journal of Chinese Affairs*, (22), Jul. 1989, pp. 145-153; SS Elmusa, The Land-Water Nexus in The Israeli-Palestinian Conflict, *Journal of Palestine Studies*, 25(3), 1996, pp. 69-70; JV Mestaz, *Strength From The Waters: A History of Indigenous Mobilization in Northwest Mexico* (University of Nebraska Press: Lincoln, 2022).

[16] SH Lees, Irrigation and Society, *Journal of Archaeological Research*, 2(4), 1994, pp. 361-362.

[17] JA Alexander, *The Life of George Chaffey: The Story of Irrigation Beginnings in California and Australia* (Macmillan & Company Limited: Melbourne, 1928); W Murdoch, *Alfred Deakin: A Sketch* (Constable and Co: London, 1923); JH McColl, Hugh McColl and The Water Question in Northern Victoria, *Victorian Historical Magazine*, 5, Jun. 1917, pp. 145-163; AS Kenyon, Stuart Murray and Irrigation in

irrigation endeavours likely deemed worthy of investigation. A point that seems seems especially the case in the biography on the professional life and achievements of George Chaffey.[18] In the case of Pratt, however, it may be that a student felt it worthy to celebrate the life of his mentor with a 400-page biography.[19] Other countries expressing similar biographical interests include the USA,[20] Britain,[21] and India.[22] It proved rather difficult to find sources not of western origin, but language might prove the limiting factor. However, most of these cited were biographies celebrating the engineering ingenuity of the person in their time. It also provides a history of irrigation development for a particular area. Kershner's research, for example, presents a short biography of George Chaffey, an irrigation engineer of the late 19th century with interests in America and especially Australia.[23] For scholars (such as those cited by Ganoe and Sterling) in the first half of the 20th century, research into the success of irrigation schemes was part of an important political narrative to illustrate the success of land settlement. As such, much reference is made throughout the paper by Sterling of the level of involvement politics had in simply the completion of Powell's report.[24]

Many hidden political agendas emanating from irrigation schemes also surfaced in research narrations.[25] Some capture the dynamics and histories of those settled next to

---

Victoria, *Victorian Historical Magazine*, 10, Jun. 1925, pp. 113-117; M Bellanta, Engineering The Kingdom of God: Irrigation, Science and The Social Christian Millennium, 1880–1914, *Journal of Religious History,* 32(1), Mar. 2008, pp. 1-15.

[18] JA Alexander, *The Life of George Chaffey …* (1928), p. ix-x.

[19] A Deakin, & A Pratt, *David Syme, The Father of Protection in Australia* (Ward Lock & Co LTD: London, 1908).

[20] Apart from Alexander's source mentioned above, there is also C Brannstrom, John Shary, Charles Pease, and Contested Irrigation Landscapes in Early-Twentieth-Century South Texas, *Journal of Historical Geography,* 38(3), 2012, pp. 234–246; JM Aton, *John Wesley Powell: His Life and Legacy* (Bonneville Books: Salt Lake City, 2010); ST Black, *Biography of San Diego County, California: A Record of Settlement, Organization, Progress and Achievement,* (SJ Clark: Chicago, 1913), Several other biographies of American Engineers with irrigation projects can be found in Google Scholar. I limit the report on these mentioned here.

[21] J Brioch, Was It Really The 'White Man's Burden'?: The Non-British Engineers Who Engineered The British Empire, *Britain and the World*, 9(2), Sept. 2016, pp. 197-212.

[22] M Kottakkunnummal, TP Kuttiammu: How an Irrigation Engineer Shaped Our Present [online source, accessed: 12 August 2024, https://www.kuttiammusahib.com/research.pdf]; J Brown, A memoir of Colonel Sir Proby Cautley, F. R. S., 1802-1871, Engineer And Palaeontologist, *Notes & Records: The Royal Society of the History of Science*, 34, 1980, pp. 185–225.

[23] FD Kershner (Jr.), George Chaffey and The Irrigation Frontier, *Agricultural History*, 27(4), Oct. 1953, p. 115.

[24] EW Sterling, The Powell Irrigation Survey, 1888-1893, *The Mississippi Valley Historical Review*, 27(3), Dec. 1940, pp. 421–434.

[25] JM Banister, Are You Wittfogel or Against Him? Geophilosophy, Hydro-Sociality, and The State, *Geoforum*, (57), Nov. 2014, pp. 205-214; M Akhter, & KJ Ormerod, The Irrigation Technozone: State

rivers.[26] Wittfogel, for example, theorised that leaders often become despotic once they gain control over a region's irrigation infrastructure.[27] Some scholars have called this theory the "Hydraulic Theory" or "Hydraulic Hypothesis".[28] Attempting to better understand totalitarian power and how it originates, his study largely focuses on social studies, economics, and politics using a large corpus and variety of sources to map "big patterns of societal structure and change".[29] His contribution has captured the attention of a multitude of scholars from several disciplines. Some criticism, however, pointed to his one-sided view on the development of the societal growth of many Asiatic dynasties over the vast tracts of land he studied.[30] Despite critique against the application of the Hydraulic Theory, Lees, as an archaeologist saw its value as it supports the understanding of how technology within water security has impacted the development of societies, especially those settled near irrigation schemes, as a result of the irrigation schemes' development. He reminds readers of the environmental impact of irrigation which she rightly surmised as still an understudied research field at the time (1994).[31]

There are, however, scholars including historians who attempted to give a different perspective of the irrigation narrative in particularly eastern countries such as China, India, and Sri Lanka. Interestingly, in the case of China, studies by two different scholars, published thirty years apart, reflect on the Tukiangyien Irrigation Scheme (also referred to as Dujiangyan). Both scholars mark the irrigation scheme as "unsurpassed"[32] and "ingeniously constructed".[33] The engineering feat cannot be argued as it has survived the

---

Power, Expertise, and Agrarian Development in the U.S. West and British Punjab, 1880–1920, *Geoforum*, (60), Mar. 2015, pp. 123-132; K Matsui, *Native Peoples and Water Rights: Irrigation, Dams, and The Law in Western Canada* (McGill-Queen's University Press: Montreal [Que.], 2009), [online source, accessed: 12 August 2024, https://www.deslibris.ca/ID/432946].

[26] D Gilmartin, *Blood and Water: The Indus River Basin in Modern History* (University of California Press: Oakland, California, 2015); C Ammirati, "You'll See Our Tracks": The Raquette River Dams Oral History Project, *Voices: The Journal of New York Folklore*, 43(1–2), Spring–Summer 2017, pp. 24-31.

[27] KA Wittfogel, *Oriental Despotism …* (1957).

[28] AM Bailey, & JR Llobera, Karl A. Wittfogel and The Asiatic Mode of Production: A Reappraisal, *The Sociological Review*, 27(3), 1979, pp. 541-559.

[29] KA Wittfogel. *Oriental Despotism*… (1957), pp. iii-v.

[30] EG Pulleyblank, Review: Oriental Despotism, *Journal of the Economic and Social History of the Orient*, 1(3), Oct. 1958, pp. 351-353; FW Mote, The Growth of Chinese Despotism: A Critique of Wittfogel's Theory of Oriental Despotism as Applied to China, *Oriens Extremus*, 8(1), Aug. 1961, pp. 1–41.

[31] SH Lees, Irrigation and Society, *Journal of Archaeological Research*, 2(4), 1994, p. 368.

[32] FO Jones, Tukiangyien: China's Ancient Irrigation System, *Geographical Review*, 44(4), Oct 1954, p. 543.

[33] WE Willmott, Dujiangyan …, *The Australian Journal of Chinese Affairs*, (22), Jul. 1989, p. 143.

test of time and is still in use more than a thousand years after its initial construction. Working as a researcher for the United States Geological Survey (USGS), Jones' article reads more like a contribution towards understanding the engineering feat and initial construction and maintenance of the irrigation system. Wilmott, through undertaking a social study, cites Jones (among other scholars) and rightly remarks that simply due to the enormity of the scheme itself it is almost impossible not to have taken note of these technical aspects, regardless of the study's main purpose.[34] Their historical contribution lies in the fact that they both reflect on the initial stages of design and construction,[35] though Jones doesn't go into so much detail regarding the social, economic and political impact as Wilmott.

Chakraborti informs readers on ancient India's irrigation projects.[36] He cites renowned authors such as Childe who also wrote about the impact of irrigation systems on societies throughout the ancient world.[37] Chattopadhyaya, on the other hand, focuses on the irrigation endeavours within early medieval Rajasthan, northern India.[38] Relying on available information in inscriptions and evidence of archaeological surveys, the study is divided into three major parts: first, the geographical distribution of the different types of irrigation tools used, to explain the relationship between irrigation and different crop productions, and secondly to understand how irrigation impacted early medieval Rajasthan's social organisation of its agrarian structures. Many such studies were the result of the *Proceedings of the Indian History Congress* as a means to focus on the early endeavours of irrigation agriculture, albeit that some of these irrigation societies relied on wells, unlike the intricate systems of, for example, China.[39] Kumar notes that this may

---

[34] WE Willmott, Dujiangyan …, *The Australian Journal of Chinese Affairs*, (22), Jul. 1989, p. 145.
[35] FO Jones, Tukiangyien …, *Geographical Review*, 44(4), Oct. 1954, pp. 545-547, & 558-559; WE Willmott, Dujiangyan …, *The Australian Journal of Chinese Affairs*, (22), Jul. 1989, pp. 143-150.
[36] H Chakraborti, History of Irrigation in Ancient India, *Proceedings of the Indian History Congress*, 32(1), 1970, pp. 150-156, [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44141060].
[37] VG Childe, *New Light on The Most Ancient East* (Percy Lund and Humphries Co LTD: London, 1934).
[38] BD Chattopadhyaya, Irrigation in Early Medieval Rajasthan, *Journal of the Economic and Social History of the Orient*, 16(2/3), Dec. 1973, pp. 298-316.
[39] S Srivastava, Means of Irrigation in North Central India During The Early Medieval Period, *Proceedings of the Indian History Congress*, 66, 2005-2006, pp. 259-263, [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44145844]; R Kumar, Irrigation Technology in Medieval India: a Study of Satpula Weir, *Proceedings of the Indian History Congress*, Golden Jubilee Session, 50, 1989, pp. 850-854 [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44146147]; AK Ranade, Water Sources And Irrigation In Medieval Maharashtra, *Proceedings of the Indian History Congress*, 66, 2005-2006, pp. 330-333, [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44145849].

have been due to previous historians' preoccupation with evidence in the form of written text and that there has been an increased interest in archaeological evidence and iconography only since the late 20th century, though still not ignoring the value of etymological studies.[40] In their contribution, Passchier and Sürmelihindi continue to build on the archaeological methodology with their paper on the impact of calcium carbonate deposits (referred to as sinter) on Roman aqueducts.[41] More specifically how these deposits shed light on historical moments of political disruption, due to poor maintenance by the political state of the time. These service delivery disruptions would leave evidence in the form of larger deposits over time for archaeologists to study today, helping to date periods of unrest and moments of peace and prosperity.

Much attention has been paid to the ancient world and its successes especially in terms of large irrigation works, such as those found in China, India, Sri Lanka[42] and what Park refers to as "pre-Hispanic Peru".[43] Fernando pays homage to numerous authors, such as the contributions of historian E Tennent in his research of Ceylon (now Sri Lanka). Often referred to as tanks, Tennent has described man-made reservoirs of ancient Sri Lanka in their irrigation endeavours as "stupendous … monuments … of former greatness".[44] Interestingly, Fernando mentions the devastating impact of nature, perhaps more specifically earthquakes, on these marvellous irrigation schemes. In particular, he notes the changes brought on by earthquakes to river courses, disrupting irrigation flow.[45] Park, in turn, reflects on the impact the major irrigation works of pre-Hispanic Peruvians had on the natural previously arid environment of the Moche Valley. He provides a detailed chronology of its development, paying attention to the contributions of archaeologists

---

[40] R Kumar, Irrigation Technology in Medieval India …, *Proceedings of the Indian History Congress*, Golden Jubilee Session, 50, 1989, p. 850.

[41] CW Passchier, & G Sürmelihindi, Sinter deposits in Roman Aqueducts, *AOURAS*, 6, 2010, pp. 276-281, [online source, accessed: 13 August 2024, https://www.researchgate.net/publication/292099878_Sinter_deposits_in_Roman_aqueducts].

[42] AND Fernando, Major Ancient Irrigation Works of Sri Lanka, *Journal of the Sri Lanka Branch of the Royal Asiatic Society*, New Series, 22, 1980, pp. i-v, & 1-24; RAHL Gunawardana, Irrigation and Hydraulic Society in Early Medieval Ceylon, *Past & Present*, (53), Nov. 1971, pp. 3-27.

[43] CC Park, Water Resources and Irrigation Agriculture in Pre-Hispanic Peru, *The Geographical Journal*, 149(2), Jul. 1983, pp. 153-166.

[44] E Tennent, *Ceylon* (1889) *in* AND Fernando, Major Ancient Irrigation Works of Sri Lanka, *Journal of the Sri Lanka Branch of the Royal Asiatic Society*, New Series, 22, 1980, p. 5.

[45] AND Fernando, Major Ancient Irrigation Works of Sri Lanka, *Journal of the Sri Lanka Branch of the Royal Asiatic Society*, New Series, 22, 1980, pp. 9-11.

such as IS Farrington who, for decades in the late 20th century, studied the Inca Empire.[46] Cuomo, on the other hand, reflects on the many conclusions historians and archaeologists alike have had to make based on the limited amount of artefacts found on Roman aqueducts in for example the northern Algerian town called Tazoult.[47] The Roman military town dating to roughly 197 - 252 AD was home to an engineer who helped plan and craft an aqueduct and whose reflection on his experience in this process was cast onto a cippus (a stone column) that was discovered in 1866. His documented experience helped shed light on how aqueducts, as part of Roman water and agricultural management were maintained.

Non-history scholars, particularly environmentalists, have also contributed to the intellectual repertoire of irrigation studies, especially in recent times. Perret and Payen attempted to address this theme in their 2020 study on irrigation and its global role in environmental degradation.[48] Their article highlights the intricacies of irrigation system management, enabling the reader to reflect on its impact on society and on the environments within which these societies find themselves. Irrigation as agricultural technology has also served to alleviate poverty. This is the conclusion that Lipton, Litchfield, and Faure reached in their study on the impact of irrigation on poverty in societies around the world.[49] Their study largely draws data from statistics within the latter part of the 20th century and focuses on the main factors impacting the availability of irrigation. The construction projects themselves were said to be possible streams of income for local communities. Post-construction streams of income were identified from a "framework for analysis". The "framework" was not too clear, but various socioeconomic impacts are highlighted: such as the effect of pricing levels on produce; employment in the farming and non-farming sectors; urban migration; and environmental factors.[50] The latter was not delved into in too much detail, which was surprising as environmental

---

[46] IS Farrington, Land Use, Irrigation and Society on The North Coast of Peru in The Prehispanic Era, *Zeitschrift fur Bewasserungswirtschaft*, 12, 1977, pp. 157-186.
[47] S Cuomo, A Roman Engineer's Tales, *Journal of Roman Studies*, 101, 2011, pp. 143-147.
[48] SR Perret, & S Payen, Irrigation and The Environmental Tragedy: Pathways Towards Sustainability in Agricultural Water Use, *Irrigation and Drainage,* 69(2), Apr. 2020, pp. 263-271.
[49] M Lipton, J Litchfield, & J Faurès, The Effects of Irrigation on Poverty: A Framework for Analysis, *Water Policy*, 5(5-6), Oct. 2003, pp. 413-427.
[50] All in all, the study by Lipton, Litchfield, and Faure will be of great value to this current study in especially Chapters Five and Six when analysing the impact of the Taung Dam Irrigation Scheme is dealt with.

concerns in large dam projects were one of the major reasons for a decline in the industry towards the end of the 20th century.[51]

2.2.1 Historiography of dams globally

There appears to be quite some substantial literature globally on the history of dams (often also referred to as reservoirs[52]).[53] It is, however, perhaps prudent to acknowledge at this stage that there are various types of dams in the world, and it would be unwise to not comment on at least some types of dams that have been built in South Africa for context. According to ICOLD standards, a dam can be considered large when its wall is 15 meters or higher from its foundation upwards.[54] However, if a dam wall is between five and 15 meters high, its reservoir volume needs to be 3 million cubic meters (mcm) to also be classified as a large dam. According to the same FAO report, South Africa has 114 recorded large dams. By these standards, the Taung Dam, completed in 1993, can be regarded as a large dam.[55] The SANCOLD website lists five main types of dams: arch dams, buttress dams, embankment dams, gravity dams and tailings dams.[56] Below (Figure 2-1) is an image of the first four mentioned. Apart from tailings dams[57] that usually

---

[51] W Scheumann & O Hensengerth, Dams and Norms: Current Practices and The State of The Debate, *in*, W Scheumann & O Hensengerth (eds.), *Evolution of Dam Policies: Evidence from the Big Hydropower States* (Springer: Heidelberg, 2014), pp. 1-12.

[52] In South Africa the term 'dam' refers to both the dam wall and the water behind it. International literature distinguishes between the dam (or artificial wall) and the reservoir or captured water. See the definition given. *Also see* United States Society on Dams (USSD), Glossary, [online source, accessed: 20 Nov 2024, https://www.ussdams.org/glossary/].

[53] This statement is evident by the roughly three million results obtained from a basic search in Google Scholar as of the year 2022. If refining to Google Scholar only about 310 000 results appeared in July 2023 that covers "Dams and Reservoir histories".

[54] FAO, Dams and Agriculture in Africa. FAO AQUASTAT Dams Africa – 070524 (2007) [online source, accessed: 17 April 2022, https://www.fao.org/3/bc815e/bc815e.pdf], p. 1.

[55] According to the ORASECOM report the Taung Dam measures 44 meters in height with a dam capacity of over 60 million cubic meters. *See* A Bailey, The Orange-Senqu River Basin Infrastructure catalogue, ORASECOM Report 001/2013, [online source, accessed: 18 Apr 2022, https://wis.orasecom.org/content/study/UNDP-GEF/general/Documents/Techincal%20Reports/TR21_InfrastructureCatalogue_lowres_Dec2013.pdf], p. 151.

[56] SANCOLD, Dams in General, [online source, accessed: 25 September 2022, https://sancold.org.za/dams-in-general/].

[57] Two recent publications have however looked at the history of the failure of these structures as a means to predict the common denominator. *See* Z Lyu, J Chai, Z Xu, Y Qin, & J Cao, A Comprehensive Review On Reasons For Tailings Dam Failures Based On Case History, *Advances in Civil Engineering*, (1), 2019, pp. 1-18; and for a more global perspective *consider* RN Guimarães, VR Moreira, JR Cruz, AP Saliba, & MC Amaral, History of Tailings Dam Failure: Impacts on Access To Safe Water And Influence On The Legislative Framework, *Science of The Total Environment*, 15(852), Dec. 2022, 158536, pp. 1-9.

serve to gather water from activities such as mining, the four listed below are largely used to store water for human consumption (either directly or to serve for agricultural purposes), as flood controls, or as hydroelectricity dams.

Figure 2-1: Four most prominent types of dams in South Africa: 1- Buttress dam; 2- Arch dam; 3- Embankment dam; 4- Gravity dam[58]

Whereas arch dams are mainly made from concrete, buttress dams can be constructed from either concrete or masonry. Where the main support for the arch lies in its semi-circular form that pushes back into the water, the triangular foot supporting the structure for buttress dams absorbs the pressure from the water against its wall. That is why buttress and gravity dams are mainly built on strong stable rock foundations and why many gravity dams also contain elements of buttress dam design. The advantage is that

[58] Starting numerically from top-left: 1: Buttress dam example in Bulshoek Dam, *see* L Van Vuuren, *In the Footsteps of Giants …* (2012), p. 71; 2: Arch dam example in Paul-Sauer Dam, CC-licenced image, *see* Wikimedia Commons, 2012, South Africa-Eastern Cape-Paul Sauer Dam, [online source, accessed: 25 September 2022, https://commons.wikimedia.org/wiki/File:South_Africa-Eastern_Cape-Paul_Sauer_Dam01.jpg]; 3: Embankment dam example in Flag Boshielo dam, *see* PJ Botha, The Ecology and Population Dynamics of The Nile Crocodile Crocodylus Niloticus in the Flag Boshielo Dam, Mpumalanga Province, South Africa (MA, UP, 2005), [online resource, accessed: 25 September 2022, https://www.researchgate.net/publication/283721372_The_ecology_and_population_dynamics_of_the_Nile_crocodile_Crocodylus_niloticus_in_the_Flag_Boshielo_Dam_Mpumalanga_province_South_Africa], p. 12; 4: Gravity dam example in Clanwilliam Dam, *see* Wikimedia Commons, 2005, Clanwilliam Dam, [online source, accessed: 25 September 2022, https://commons.wikimedia.org/wiki/File:Clanwilliam_Dam_2005.jpg].

they can be built in narrow and wide valleys. Embankment dams take one of two forms as they are built from natural materials, e.g. earth- or rock-fill dams and therefore these dams are usually built within wide valleys on either hard rock or soft soils.[59]

From an international intellectual point of view, the focus on dam/reservoir histories ranges from biographies (notably of the dams and river systems themselves);[60] hydro-politics;[61] hydroelectricity;[62] dam construction (and its failures);[63] socio-environmentalism[64] and especially the historical impact of dams and reservoirs on communities,[65] among others[66]). Additionally, calling for a new method of analysis for a more modern environmental historic method by combining both historic analysis and

[59] SANCOLD, Dams in General, [online source, accessed: 25 September 2022, https://sancold.org.za/dams-in-general/].

[60] One of the few sources found not to focus on American dams include: A Mossallam, ‘‘We Are The Ones Who Made This Dam ‘High’!’’ …, *Water Hist*, 6, 2014, pp. 297–314. However, it was noted that most examples found from a Google Scholar search are focussed on Northern America along with two of the publications cited being post-graduate dissertations. *See* M Cioc, *The Rhine: An Eco-Biography, 1815-2000* (University of Washington Press: USA, 2002); DA Nesheim, *An Environmental Biography of Bde Ihanke-Lake Andes: History, science, and sovereignty converge with tribal, state, and federal power on the Yankton Sioux Reservation in South Dakota, 1858–1959* (PhD, The University of Nebraska-Lincoln, 2009); Q Scott, *The Mississippi: A Visual Biography* (University of Missouri Press: Missouri, 2010); GC Raynor, Jordan Lake: Biography of a Multi-Purpose North Carolina Reservoir 1945-2024 and Beyond (PhD, Duke University, 2024); RD Cornell, *The Chippewa: Biography of a Wisconsin Waterway* (Wisconsin Historical Society: Wisconsin, 2017).

[61] C Cookson-Hills, The Aswan Dam and Egyptian Water Control Policy, 1882 – 1902, *Radical History Review*, (116), 2013, pp. 59–85; M Nüsser, Political Ecology of Large Dams: A Critical Review, *Petermanns Geographische Mitteilungen*, 147(1), 2003, pp. 20-27; PC Rosier, Dam Building and Treaty Breaking: The Kinzua Dam Controversy, 1936-1958, *The Pennsylvania Magazine of History and Biography*, 119(4), 1995, pp. 345-368.

[62] W Scheumann, & O Hensengerth, (eds.), *Evolution of Dam Policies Evidence from the Big Hydropower States* (Springer: Heidelberg, 2014); JF De La Croix, Moving Metaphors We Live By: Water and Flow in The Social Sciences and Around Hydroelectric Dams in Kyrgyzstan, *in* M Reeves (ed.) *Movement, Power and Place in Central Asia and Beyond: Contested Trajectories* (Routledge: London, 2012); P Hirsch, The Changing Political Dynamics of Dam Building on the Mekong, *Water Alternatives*, 3(2), 2010, pp. 312-323.

[63] GD Holt, Historical Perspectives of engineering Project Design, Organisation and Management: Construction of The Elan Valley Dams, *Engineering Project Organization Journal*, *3*(4), 2013, pp. 213–226.

[64] P Wang, S Dong, & JP Lassoie, *The Large Dam Dilemma: An Exploration of the Impacts of Hydro Projects on People and the Environment in China* (Springer: Dordrecht, 2014.

[65] T Schudder, *Aswan High Dam Resettlement of Egyptian Nubians* (Springer: Singapore, 2016); TC Bisht, Development-Induced Displacement and Women: The Case of the Tehri Dam, India, *The Asia Pacific Journal of Anthropology*, 10(4), 2009, pp. 301-317; M Ziolkowski, *Mega-Dams in World Literature: Literary Responses to Twentieth-Century Dam Building* (University of Wyoming Press of Colorado: Denver, 2024).

[66] Of value here is Ammirati’s oral history project on the people affected and surrounding the Raquette River dams: C Ammirati, You’ll See Our Tracks: The Raquette River Dams Oral History Project, *Voices: The Journal of New York Folklore*, 43(1–2), Spring–Summer 2017, pp. 24-31.

inspirations from geologists is Stahl.[67] The history of hydroelectric dams has received much attention from scholars shortly after the beginning of the 21st century and seemingly coordinating their publications with decadal or centenary celebrations.[68] Despite the need for more sustainable forms of energy, especially large dams gained attention from the civil engineering sector and governments being pressurised to build dams of a more sustainable nature.[69] Hydro-politics and understanding the nuances of large construction projects from an "above"-perspective (meaning governmental) is prevalent throughout, but not exclusive to this viewpoint as more interest in their impact on resettled communities gains attention.[70] But also inclusive of this can be considered the construction histories where the history of the builders of the dams themselves are told.[71] Considering, however, viewpoints from above, whilst referring to large construction projects as "hero projects",[72] Josephson captures the essence of how world politicians have often tried to legitimise and, dare I say, abdicate their roles in the negative consequences of, for example, large dam and irrigation projects on nature and people alike.[73] In a more recent publication, Deverell and Sitton commented on the "hero"-role

---

[67] DJ Stahl, The Dam as Catastrophe: Connecting Geological Models to Modern History, *Water History*, 13, 2021, pp. 137–160.

[68] P Samarasin, BJ Shuter, & FH Rodd, After 100 Years: Hydroelectric Dam-Induced Life-History Divergence and Population Genetic Changes In Sockeye Salmon (Oncorhynchus Nerka), *Conservation Genetics*, 18, 2017, pp. 1449-1462; M Nelson, Viewpoint - Fifty Years of Hydroelectric Development in Chile: A History of Unlearned Lessons, *Water Alternatives,* 6(2), 2013, pp. 195-206; A Allerhand, Hydroelectric Power: The First 30 Years [History], *IEEE Power and Energy Magazine*, 18(5), 2020, pp. 76-87.

[69] Apart from the sources mentioned earlier that largely was published after 2000 the focus by researchers from the 20th century, especially so from the World Commission on Dams, are of value such as: S Robinson, The Experience With Dams and Resettlement in Mexico, *Contributing paper to Displacement, resettlement, rehabilitation, reparation and development, World Commission on Dams Thematic Review 1.3: Displacement, Resettlement, Rehabilitation, Reparation and Development*, 2000, pp. 1-12, [online source, accessed: 30 August 2024, https://www.irn.org/files/pdf/mexico/Resettlement.pdf]; J Jing, Rural Resettlement: Past Lessons for the Three Gorges Project, *The China Journal*, (38), 1997, pp. 65-92; J Colajacomo, & C Chen, The Chixoy Dam: The Maya Achi' Genocide - The Story of Forced Resettlement, *Contributing paper to Displacement, Resettlement, Rehabilitation, Reparation and Development. World Commission on Dams Thematic Review 1.2: Dams, Indigenous People and Vulnerable Ethnic Minorities*, 1999, pp. 1-20, [online source, accessed: 30 August 2024, http://che.rabinal.info/doc/ChixoyDam_StoryOfForcedResettlement.pdf].

[70] M Ponseti, & J López-Pujol, The Three Gorges Dam Project in China: History and Consequences, *HMiC: història moderna i contemporània*, 4, 2006, pp. 151-188.

[71] A Mossallam, ''We are the ones who made this dam 'High'!'' …, *Water History*, 6, 2014, pp. 297–314.

[72] A sentiment given to largely engineers who were celebrated for designing and constructing massive dam projects as a means to often alleviate years-long droughts and therefore help combat associated economic struggles. However, in this case "hero project" refers to the large-scale projects funded by government initiatives, in specifically Russia. *See* PR Josephson, *Hero Projects: The Russian Empire and Big Technology from Lenin to Putin* (Oxford University Press: New York, 2024).

[73] PR Josephson, *Hero Projects …* (2024), pp. 1-5, 15-21.

given to engineers of such large construction projects in especially the first half of the 20th century.[74] Two quotes from the same year (1928), however, juxtapose the sentiment, as though these large structures often played significant roles in securing livelihoods with more readily available water supplies, their failures had massive impacts on communities.[75] Towards the latter part of the 20th century publications reported regularly on the failures of these mega structures, though not necessarily from a historical perspective.[76] Much of these failures were linked to investigations in earth-moving events like earthquakes, as seen in Costa's referred source being linked to institutions such as the USGS. The focus, however, does continue among researchers within the 21st century, but with distinct attention paid to the impacts of these dams on humans and their downstream environs.[77] Crowell, in his re-examination of the history of the Chinese Quebei reservoir, considers the role of the historian.[78] He laments the need for historians to revisit historical sources and for the reconsideration of long-accepted local histories. This he notes as he found the origins of the Quebei reservoir to be of Western Han rather than the long-assumed Pre-Han origin.

2.3 Irrigation schemes and dam developments in African literature

It can be argued that large dams played an integral role in the development of Africa in the late 20th century as they contributed to impressive irrigation schemes and massive electricity-supply structures, despite the growing debates against large dams and their consequences. Excluding South Africa and Burkina Faso, more than a thousand large

---

[74] W Deverell, & T Sitton, *Water and Los Angeles: Tale of Three Rivers, 1900-1941* (University of California Press: California, 2017), pp. 81-116.

[75] The two quotes read: "'The construction and operation of a great dam should never be left to the sole judgment of one man, no matter how eminent.' —Los Angeles County Coroner's Inquest, 1928; 'Don't blame anybody else, you just fasten it on me. If there is an error in human judgment, I was the human.' —William Mulholland, 1928", *see* W Deverell, & T Sitton, *Water and Los Angeles …* (2017), pp. 81-82.

[76] See also JE Costa, *Floods from Dam Failures,* 85(560), (US Geological Survey: Vancouver: 1985); JE Costa, & RL Schuster, *Documented Historical Landslide Dams from Around the World*, 91(239), (US Geological Survey: Vancouver, 1991).

[77] M McCartney, Living with Dams: Managing the Environmental Impacts, *Water Policy*, 11(S1), 2009, pp. 121-139; BD Richter, S Postel, C Revenga, T Scudder, B Lehner, A Churchill, & M Chow, Lost in Development's Shadow: The Downstream Human Consequences of Dams, *Water Alternatives*, 3(2), 2010, pp. 14-42.

[78] WG Crowell, History and Tradition: The Origins of The Quebei Reservoir, *T'oung Pao*, *98*(4-5), 2012, pp. 349-384.

dams were built in Africa between 1945 and 1990.[79] In Africa, irrigation histories are said to precede dam histories, especially considering the techniques of some ancient civilizations dating back between 4000-1100 BC in the Mesopotamian regions.[80] Sutton further notes the uncelebrated (underrated) histories of traditional African irrigation techniques that have seemingly been forgotten.[81] Notably, these techniques have rather been supplanted by new adaptations throughout the ages, but Sutton revisits communities in eastern Zimbabwe (at the terraced hillsides of Inyanga of the later Iron Age) and the northern Tanzania rift region of Engaruka as a means to elaborate on how even in ancient African societies, specialisation in irrigation technologies took place. Well before the Roman invasions of Africa (and their technologies) the civilisations of, for example, ancient Egypt up to the Mesopotamian region (beyond African borders) were among the first irrigators roughly around 6000 BC.[82] It was also in Egypt, as further noted by Sojka, Bjorneberg, and Entry, that the first pictorial representation of irrigation was made.[83] Mays too dedicates a chapter of his work in *Ancient Water Technologies* to craftsmanship before the Roman influence was felt in (among others) northern Africa. He pays homage to the various types of irrigation systems (hydraulics) and ways in which those societies obtained their water, such as lift irrigation by drawing water from wells, particularly to highlight how these technologies preceded further hydraulic developments with evolving cities.[84]

However, this same area has also received much academic attention due to the historic impact of irrigation systems from the ancient Roman Empire on the surrounding and subsequent societies. A whole chapter, for example, is dedicated to agriculture in the publication by Raven with specific focus on irrigation practices by the Romans present in the North African regions during their reign in the beginning of the first millennium.[85]

---

[79] According to data produced by FAO, *cited by* HJ Hoag, The Damming of Africa: The Spread of River Basin Planning in Post-War Africa, *in* JWN Tempelhoff (ed.), *African Water Histories*, (2005), p. 172.
[80] L Mays, *Ancient Water Technologies* (Springer: Dordrecht, 2010), p. 7.
[81] JEG Sutton, Irrigation and Soil-Conservation in African Agricultural History: With a Reconsideration of the Inyanga Terracing (Zimbabwe) and Engaruka Irrigation Works (Tanzania), *The Journal of African History*, 25(1), 1984, pp. 25-41.
[82] RE Sojka, DL Bjorneberg, & JA Entry, Irrigation: An Historical Perspective, *Encyclopedia of soil science*, 1(1070), 2002, pp. 745-746.
[83] RE Sojka, DL Bjorneberg, & JA Entry, Irrigation …, *Encyclopedia of soil science*, 1(1070), 2002, pp. 745.
[84] L Mays, *Ancient Water Technologies* (2010), pp. 1-28.
[85] S Raven, *Rome in Africa* (Routledge: London, 1993), pp. 89-96.

Historians[86] and archaeologists[87] alike have aimed to understand the impact of Roman culture and technology on societies in areas such as modern-day south-central Tunisia and Algeria. Shaw, a well-established historian in the field of ancient history and specifically Roman history, notes that the limitations of our knowledge of irrigation systems (among other themes) in northern Africa were largely influenced by the incentives for research ordered by colonial authorities in the early 20th century.[88] By then, these researchers' interpretation (mostly archaeologists) was all that we knew, which in this case, was the distinct influence of Roman rule on irrigation water management and the subsequent impact on agricultural practices and land - and water use rights. Though Shaw is quite critical of the contributions of archaeologists and their incentives for research, Leone (an archaeologist herself) too argues that little attention, then (2012), was paid to the irrigation practices of the people that were settled there before the Roman invasion.[89] According to her, little evidence remains to understand the role and impact of pre-Roman local indigenous knowledge and the way it could have shaped agricultural practices before Roman invasions. However, as seen earlier in this section, though academic knowledge on pre-Roman Africa is limited, it is not entirely non-existent and rather calls for more research into the topic. A statement with which Leone might agree.

Two major irrigation schemes in northern Africa that have perhaps drawn more interest from scholars in the 20th century are the colonially established Gezira and Office du Niger schemes. The British-established Gezira Scheme of Sudan is well documented and for this study authors such as Ertsen, and Wallach, are important. Though Wallach[90] divides Gezira's history into three phases: pre-colonial, colonial and post-independence (after

---

[86] BD Shaw, Water and Society in The Ancient Maghrib: Technology, Property and Development, *Antiquités africaines*, 20, 1984, pp. 121-173.

[87] A Leone, Water Management in Late Antique North Africa: Agricultural irrigation, *Water History*, 4, 2012, pp. 119–133. Other archaeologists' focus on water resources was for example much more directed towards understanding the workings of urban water management and its impact on the related urban societies. *See* for example the works of AI Wilson, Urban Water Storage, Distribution and Usage in Roman North Africa *in* AO Koloski-Ostrow (ed.), *Water Use and Hydraulics in the Roman City* (Archaeological Institute of America: Iowa, 2001), pp. 83-96. He did however at some point focus on irrigation practices: AI Wilson, The spread of foggara-based irrigation in the ancient Sahara, *in* DJ Mattingly, S McLaren, E Savage, Y al-Fasatwi, & K Gadgood (eds.), *The Libyan Desert: Natural Resources and Cultural Heritage* (Society for Libyan Studies: London, 2006), pp. 205-216.

[88] BD Shaw, Water and Society in The Ancient Maghrib…, *Antiquités Africanise*, 20, 1984, pp. 124-126.

[89] A Leone, Water Management in Late Antique North Africa…, *Water History*, 4, 2012, pp. 121-122, 125.

[90] B Wallach, Irrigation in Sudan Since Independence, *Geographical Review*, 78(4), 1988, p. 417.

1955), it is Ertsen who brings to our attention the colonially imposed irrigation scheme developments of the Gezira and Office du Niger schemes over a period from 1880 to 1960.[91] In his comparative study, Ertsen aimed to highlight the impact of colonial, and, more specifically, the British and French imposed irrigation practices on the local populace. The sheer size of the schemes had the imposing effect of changing the way agriculture was practised up to that point. With the damming of the Blue Nile at the Sennar Dam, the peninsula between the Blue and White Nile was turned into irrigable land.[92] The British government of the time envisioned great progress in their textile industry, with cotton production at the forefront. The social development of the people was of interest to scholars and to the governing board of the scheme, named the Sudan Gezira Board. The Social Development Officer, Beer, delivered a paper reflecting on the social developments surrounding the scheme in 1955. His reflection captures what is at the heart of this study, which is to investigate the social impact of a particular irrigation scheme on a nearby society. Though he does not rely on or refer to other sources in his address, he speaks largely of his observations as a board member on what has happened to the social organisation of the surrounding populace, as he believes happens to many such projects.[93] That is, the loss of their Indigenous way of life as they adapt to the new schedules and patterns of crops brought on by a more secure water supply and the impact of more secure food supplies and subsequent heightened revenue per household. This security guarantees free time for other pursuits such as educational endeavours. Authors do not often revisit these changes that could become scholarly findings. Though Ertsen compared the growth of the British-established Gezira Scheme and the French-established Office du Niger, it is in his reflection of the latter through the use of especially cartographic analyses that the impact of colonial agricultural practices is truly captured.[94] From irregularly sized polygons per family unit (often seen as working with nature and considered to be more environmentally friendly) to symmetrically ordered land units, the structured impact is quite evident. The historical and particularly the environmental impact is lacking, however. Thornton too makes a study of the effective use of the Gezira scheme

[91] MW Ertsen, Colonial Irrigation: Myths of Emptiness, *Landscape Research*, 31(2), 2006, pp. 147-167.
[92] CW Beer, Social Development in the Gezira Scheme, *African Affairs*, 54(214), 1955, p. 42.
[93] CW Beer, Social Development in the Gezira Scheme, *African Affairs*, 54(214), 1955, pp. 43-45.
[94] MW Ertsen, Colonial Irrigation: Myths of Emptiness, *Landscape Research*, 31(2), 2006, pp. 163-166.

especially between the years 1950-1970, that is post-independence.[95] His is not necessarily a historical study, and he relies heavily on working reports and market-related data as he evaluates how efficiently locals have been able to produce their crops, be they cash or food crops. For him, a thorough study of the successes and failures is paramount for the effective future management and development of the resource. Wallach gives a retrospective view of the scheme's development since Sudan's independence. Though his study does not directly focus on the social impacts of the Gezira scheme, one cannot help but think of the implications of removal and resettlement for populations as he notes the various damming projects necessary for the further development of the areas.[96] Regular authors relied upon for the study of this scheme and its development were Gaitskell (once the chair of the Sudan Gezira Board) and Barnett (a sociologist and a critical reviewer of the successes of the Gezira scheme).[97]

It is noted that many of the sources found during the search on the historical development of irrigation schemes in sub-Saharan Africa were from scholars outside the fields of historical analysis, often focused on the current state of impoverishment and hunger in Africa and the many governmental alleviating endeavours.[98] At first glance, the lack of scholarly (historical) work might be due to the limited number of irrigation practices within Africa, which is unlikely when considering figures shared by Tempelhoff such as 66% of water in Africa being used for irrigation purposes.[99] A more likely reason may be simply due to a lack of documentation and the absence of sufficient archaeological work that has thus far been completed which Tagseth supplements with oral testimonies.[100] Adams notes sceptically (with reason) the statistics shared by the FAO, namely that large

---

[95] DS Thornton, Agricultural Development in The Sudan Gezira Scheme, *Sudan Notes and Records*, 53, 1972, pp. 100-115.

[96] B Wallach, Irrigation in Sudan Since Independence, *Geographical Review*, 78(4), Oct 1988, p. 424.

[97] A Gaitskell, *Gezira: A Story of Development in The Sudan* (London: Faber & Faber, 1959); T Barnett, *The Gezira Scheme: An illusion of Development* (London: Cass, 1977).

[98] T Vaishnav, Increasing Food Production in Sub-Saharan Africa through Farmer-Managed Small-Scale Irrigation Development, *Ambio*, 23(8), Dec. 1994, pp. 524-526; R Hogg, Development in Kenya: Drought, Desertification and Food Scarcity, *African Affairs*, 86, 1987, pp. 47-58.

[99] JWN Tempelhoff, Historical Perspectives on Pre-Colonial Irrigation in Southern Africa, *African Historical Review*, 40(1), 2008, pp. 121-123. Additionally consider the paper on the impact of irrigation practices on ancient societies in the East Rift regions of Africa as considered by Ehret *in* C Ehret, Between the coast and the great lakes, *in* DT Niane (ed.), *General History of Africa, (4th ed.): Africa from the Twelfth to the Sixteenth Century*, (UNESCO: Paris, 1984), p. 490.

[100] M Tagseth, Oral History and The Development of Indigenous Irrigation: Methods and Examples From Kilimanjaro, Tanzania, *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 62(1), 2008, pp. 9–22.

irrigation schemes in sub-Saharan Africa were to be found only in seven countries: Madagascar, Mali, Nigeria, Sudan, Senegal, Tanzania, and Zimbabwe.[101] His book, which covers his research and work in Africa over 14 years, while not so much historic, definitely contributes to the repertoire of studies with a focus on irrigation within the African context.[102] British scholars, geographer Adams, and Anderson a historian, give a combined critique on the assumption that only colonial and post-colonial "experts" knew what they were doing when they explored irrigation schemes in Africa.[103] As in many of Adams' works, the fundamental question is once again asked: in what lies the success of irrigation schemes in especially the African context? Contrary to Lipton, Litchfield and Faure,[104] Adams and Anderson do not believe that scale is a defining factor for the success of African irrigation schemes.[105] On the contrary, small-scale irrigation schemes were seen as equally successful (if not more so) than large-scale schemes. However, they also suggest that a thorough (regional) history of the area is compiled especially in terms of Indigenous irrigation practices within predominantly pastoralist societies such as those found in East Africa before any attempt at irrigation scheme development. However, Adams' more adamant reflections three years later elucidate the successes and more prominently the failures of large irrigation schemes in northern Nigeria, which were in sharp contrast to his previous statement.[106] Though Adams' research focuses the readers' attention on Western and Eastern Africa, another scholar with whom Adams has worked, Sutton, who, along with anthropologist, Potkanski, aimed to obtain a better understanding of the development of indigenous irrigation practices before the influence of colonially driven schemes.[107] From the sources consulted in this particular paper, it is quite evident that much has already been done especially by anthropologists on the histories of societies situated in Eastern Africa, especially so in modern-day Kenya and

---

[101] WM Adams, Large Scale Irrigation in Northern Nigeria: Performance and Ideology, *Transactions of the Institute of British Geographers*, 16(3), 1991, p. 287.
[102] WM Adams, Wasting the Rain: Rivers, People and Planning in Africa (Earthscan: London, 1992).
[103] WM Adams, & DM Anderson, Irrigation Before Development: Indigenous and Induced Change in Agricultural Water Management in East Africa*, African Affairs*, 87(349), Oct. 1988, p. 519.
[104] M Lipton, J Litchfield, & J Faurès, The Effects of Irrigation on Poverty: A Framework for Analysis, *Water Policy*, 5(5-6), Oct 2003, p. 422.
[105] WM Adams, & DM Anderson, Irrigation Before Development …*, African Affairs*, 87(349), Oct. 1988, pp. 533-534.
[106] WM Adams, Large Scale Irrigation in Northern Nigeria: Performance and Ideology, *Transactions of the Institute of British Geographers*, 16(3), 1991, pp. 298-299.
[107] WM Adams, T Potkanski, & JEG Sutton, Indigenous Farmer-Managed Irrigation in Sonjo, Tanzania, *The Geographical Journal*, 160(1), Mar. 1994, pp. 17-32.

Tanzania. Sutton is an archaeologist and prolific writer on the history of African societies and their workings from especially the 15th century onwards.[108] Adding to Sutton's research referred to at the beginning of this section,[109] is the water historian, Tempelhoff, nearly three decades later.[110] Tempelhoff, much like Sojka, Bjorneberg, and Entry,[111] contemplated societies' relationship with water. These latter authors mentioned that the ancient Persian word for civilised (denoting civilisation) was *abanan*, whose root word ab means "water". However, much like Hoag considered below, he also laments the need for more historical analysis (by historians) of the pre-colonial histories of southern African societies and their relationship with water, especially from hydrological and agricultural perspectives.[112]

Additionally, what seems to be lacking (especially within the African context), is a well-developed impact study on the social history of dams in African societies.[113] Hoag, a historian contributing to the transdisciplinary study of water histories within Africa, noted her dismay in 2006 at the apparent lack of enthusiasm among her fellow historians in writing about the history of African rivers. Her chapter in *African Water Histories* recalls the close relationship Indigenous people have with nature.[114] One such an example is the impact that the presence of dams has on the rainmaking rituals of Indigenous

---

[108] JEG Sutton, Editor's Introduction: Fields, Farming and History in Africa, *Azania*, 24, 1989, pp. 6-11; JEG Sutton, Towards a History of Cultivating The Fields, *Azania*, 24, 1989, pp. 99-113; JEG Sutton, 'Engaruka: Farming By Irrigation in Maasailand ca. A.D. 1400-1700', *in* G Barker & D Gilbertson (eds.), *The Archaeology of Dryland: Living At The Margin* (London: Routledge, 2000), pp, 201-219; JEG Sutton, Engaruka: The Success and Abandonment of an Integrated Irrigation System in an Arid Part of the Rift Valley, c.15" to 17th centuries, *in* M Widgren & JEG Sutton (eds.), *Island of Intensive Agriculture in Eastern Africa*, (James Currey: Oxford, 2004), pp. 114-132.

[109] *See* JEG Sutton, Irrigation and Soil-Conservation in African Agricultural History …, *The Journal of African History*, 25(1), 1984, pp. 25-41.

[110] JWN Tempelhoff, Historical Perspectives on Pre-Colonial Irrigation in Southern Africa, *African Historical Review*, 40(1), 2008, pp. 121–160.

[111] RE Sojka, DL Bjorneberg, & JA Entry, Irrigation …, *Encyclopedia of Soil Science*, 1(1070), 2002, p. 745.

[112] JWN Tempelhoff, Historical Perspectives on Pre-Colonial Irrigation in Southern Africa, *African Historical Review*, 40(1), 2008, pp. 121–122.

[113] African studies that do feature, however considering its long history and the presence of numerous irrigation schemes and dams, it is almost expected to see more studies of the following nature: M Tagseth, Oral History and The Development of Indigenous Irrigation …, *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 62(1), 2008, pp. 9-22; W Visser, Water As Agent For Social Change, 1900–1939 …, *Historia*, 63(2), Nov. 2018, pp. 42-47; A Isaacman & C Sneddon, Toward a Social and Environmental History of The Building of Cahora Bassa Dam, *Journal of Sothern African Studies*, 26(4), 2000, pp. 617-630.

[114] HJ Hoag, The Damming of Africa…, *in* JWN Tempelhoff (ed.), *African Water Histories*, (2005), p. 177-180.

populations. Considering that some of the last studies on rainmaking rituals and the seasonal movement of people were done between 100 to 40 years ago, it is about time these concepts were revisited by social historians.[115] Additionally, researchers such as Schapera have done amazing work to better understand African societies such as the Batswana, especially in so far as their traditional beliefs before the presence and impact of colonialists.[116] This is especially important considering the number of irrigation projects and dams that have been completed in Africa since then. Like many other sceptics of large irrigation systems (one is reminded of the works of Adams) Hoag's analysis captures interest in the socio-economic impact of dam construction projects that have left communities deeper in debt than at the outset.[117] Another source that provides insight into the disillusionment of the developmental history of dams in Africa is the historian Isaacman and his co-author and wife.[118] In their book on the Cahora Bassa Dam in Mozambique, particular attention is paid to the timeline of its development. They focus on the loss of Indigenous knowledge, but also on artefacts and communities' sense of place as part of the yet unknown secondary consequences that are also distorted in the process of resettlement. Fontein refers to "history-scapes" and the alienation of people from not only the submerged land, but the cultural connections to these areas that will henceforth no longer exist.[119] In contrast to this Hughes captures how the European populations of the 20th century Zimbabwe changed the landscape with their water projects to appeal to their own ideals.[120] Loss of natural habitat (and beauty as they saw it) was apparently worth the price to be closer to large bodies of water. What Beer briefly reflected on, as mentioned earlier, is that whilst adapting to the presence of sudden availability of water year-round, people's perspectives and relationships with water also change.[121] Rituals like rainmaking, along with generations of agricultural practices come to mind as ''lost

---

[115] SS Dornan, Rainmaking in South Africa, *Bantu Studies*, 3(2), Jul. 1928, pp. 185-196.
[116] I Schapera. *Rainmaking Rites of the Tswana Tribes: African Social Research Documents*, Volume 3 (African Studies Centre: Cambridge, 1971); I Schapera, *The Tswana* (KPI Limited: London, 1984).
[117] HJ Hoag, The Damming of Africa …, *in* JWN Tempelhoff (ed.), *African Water Histories …* (2005), pp. 177-180.
[118] AF Isaacman, & BS Isaacman, Dams, Displacement, and the Delusion of Development: Cahora Bassa and Its Legacies in Mozambique, 1965-2007 (Ohio University Press: Athens, OH, 2013).
[119] J Fontein, An Ethnographic Study of The Politics of Land, Water and 'Tradition' Around Lake Kyle/Mutirikwi in Southern Zimbabwe *in* JWN Tempelhoff (ed.) *African Water Histories* … (2005), p. 288.
[120] DM Hughes, *Whiteness in Zimbabwe: Race, Landscape and The Problem of Belonging* (Palgrave MacMillan: New York, 2010), p. xii-xv.
[121] CW Beer, Social Development in the Gezira Scheme, *African Affairs*, 54(214), 1955, pp. 43-45.

heritage'' due to changes in environmentally derived needs.[122] These are aspects of history (be it environmental history, social history or as coupled with other fields of history) that are still underexplored, especially compared to the number of dams (between 600-800 large dams) that have been built in Africa over the last century and a half.[123] Acknowledging their loss could serve as an attempt to regain undocumented memories.

Other studies (not necessarily historical) showing an understanding of the impact on the societies and those that built large water storage facilities have been featured and should be mentioned here.[124] Similar to Mossallam's[125] paper on the labourers of the Aswan Dam, Tischler reflects more on the actual construction process whilst relying on methodologies from labour historians who too have reflected on the way colonial authorities have employed workers.[126] Knowing agricultural and environmental histories, Tischler's research in this instance takes the reader to a different perspective that captures the political atmosphere that was engrossed in the completion of the Kariba Dam (a hydro-electric dam) that was meant to connect three countries (Nyasaland, Northern, – and Southern Rhodesia)[127] into the Central African Federation. Tischler notes that the experiences of communities north and south of the Kariba Dam were vastly different and that her study draws specifically from those situated in what was then referred to as Northern Rhodesia.[128]

---

[122] It is admitted though that some of these rituals could have been derived from the need to survive and populations do go through natural changes as they (along with their cultural nuances) adapt to circumstance. It is therefore not necessarily so that the discontinuation of a practice is a bad thing, but the impact such large environmental changes caused by for example a large man-made lake remains.

[123] In the source the author notes that there is a definite need for more research to clarify the actual number of large dams put in a register of large dams in Africa. According to the current register only 320 dams are listed. Yet, according to the FAO this should be closer to 600-800 large dams. *See*, FAO, Register of African Dams And Reservoirs, [online source, accessed: 15 September 2024, https://www.fao.org/4/AC675E/AC675E03.htm].

[124] Specifically looking into the socio- and environmental impact of massive international investments on development projects in Africa *is* J Koopman, Putting Humpty Dumpty back together again: The challenges of post-dam environmental and economic rehabilitation in the Senegal River Valley *In* M Kitissou, M Ndulo, M Nagel, & M Grieco, *The Hydropolitics of Africa: A Contemporary Challenge* (Cambridge Scholars Publishing: New Caste, 2007), pp. 229-231.

[125] A Mossallam, ''We Are the Ones Who Made This Dam 'High'!'' …, *Water History*, 6, 2014, pp. 297–314.

[126] J Tischler, Light and Power for a Multiracial Nation: The Kariba Dam Scheme in the Central African Federation (Palgrave Macmillan: Basingstoke, 2013), pp. 153-213.

[127] These areas are respectively known today as Malawi, Zambia and Zimbabwe.

[128] J Tischler, Cementing Uneven Development: The Central African Federation and the Kariba Dam Scheme, *Journal of Southern African Studies*, 40(5), 2014, p. 1047.

Another factor that has not been touched on significantly, is how these irrigation projects (notably with dams) have impacted for example the health sectors of adjacent communities. Ijumba and Lindsay are two of several other authors who investigate the cases of malaria in Africa that are a direct result of the presence of irrigation schemes.[129] They argue that those benefitting economically from these schemes stand a better chance of protecting themselves from the illness, than those communities that fall outside the economic sphere of the scheme, but well within the environmental impact zone. Considering different perspectives is another important feature for any study attempting to capture the true lived experiences of those affected by hydro-projects. This is exactly what Chakawa and Chambwe attempt when they argue for the need to investigate the lived experiences of those resettled communities affected by small dam projects.[130] They pose that much attention is rightly paid to large dam projects but not at the cost of ignoring the impact of small dam projects on surrounding economically marginalised communities. These communities often find it even more difficult to not only have their grievances heard but also to adapt their livelihoods. They weigh these concepts as their sources guide them to understand the many impacts African communities have endured under the resettlement policies of the governments of their time. Jibowo and Mncina's study on the resettled community of the Hhohho region in Eswatini due to the construction of the Maguga Dam[131] is not a study of historical nature, but an example that adds to the understanding of the impact of displacement. Their research topic is one of few that reports on the benefits and the positive impact resettlements have on a community. This was evidently because of the way the government involved the traditional community in decision-making processes and compensation was inclusive of the planning of the project, not a mere afterthought.

Additionally, Ertsen considers how schools of thought (based on the colonial authority at play) in the design of irrigation systems have also been impacted and in turn impacted on

---

[129] JN Ijumba, & SW Lindsay, Impact of Irrigation on Malaria in Africa: Paddies Paradox, *Medical and Veterinary Entomology*, 15(1), 2001, pp. 1-11.

[130] J Chakawa, & TV Chambwe, Displacement and Livelihoods through the Construction of Small Dams: Legacies of Magunje Dam in Hurungwe District, Mashonaland West Province, Zimbabwe, *Africanus*, 50(2), 2020, pp. 1–16.

[131] AA Jibowo, & M Mncina, Benefits and Challenges of Maguga Dam Resettlement Scheme to Displaced People in Hhohho Region of Eswatini, *South African Journal of Agricultural Extension*, 47(4), 2019, pp. 18–28.

societies, such as the French north-west Africa, the British in Africa, and the Dutch from the Netherlands East Indies.[132] Tischler highlights two other opposing perspectives (as has been noted in some of the studies mentioned) that of pre-, versus colonial, versus post-colonial development. In the case of the Kariba Dam, the structure was meant to be physically imposing as a large hydroelectric project (reminding one of the "hero"-projects of Russia) and bring people together within the Central African Federation as a colonially envisioned nation-building project. However, what is interesting and may be of importance is how the Kariba Dam's development was envisioned and finally materialised since it too was a dam constructed and completed during a phase of political transition.[133]

Considering once more the views of Adams, Barnett, Isaacman, and Tischler and their concern to include the perspectives of different stakeholders in large projects, the historical impact of geopolitics remains of interest.[134] Though politics have played a large role in the lives of those surrounding communities of dam developments, Isaacman's research would be a rather negative reflection.[135] Consider especially Isaacman's many publications on the Cahora Bassa Dam.[136] Some sources referred to may further be of interest to this study to better understand the role authorities as well as the economics of the time have played in state-induced development projects as, for example, poverty

---

[132] WM Ertsen, The Development of Irrigation Design Schools or How History Structures Human Action, *Irrigation and Drainage*, 56, 2007, pp. 2-5.

[133] Zambia, Zimbabwe and Malawi gained their independence between the years 1964-1965. The planning and completion of the Kariba Dam coincides with the end of colonial rule in Central Africa. *See* J Tischler, *Light and Power for a Multiracial Nation: The Kariba Dam Scheme in the Central African Federation* (Palgrave Macmillan UK, London: 2013), pp. 21-22.

[134] AF Isaacman, & BS Isaacman, Dams, Displacement, and the Delusion of Development … (2013), p. 18.

[135] The authors for example referred to T Mitchell, J Scott, and J Ferguson as they have assisted them in better understanding the concept of the totalitarian aspect of modernist state planning. *See* AF Isaacman, & BS Isaacman, *Dams, Displacement, and the Delusion of Development …* (2013), p. 19; JC Scott, S*eeing Like a State: How Certain Schemes to Improve The Human Condition Have Failed*, Veritas paperbacks edition, (Yale University Press: New Haven, 2020); T Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (University of California Press: Berkeley, 2002); J Ferguson, *The Anti-Politics Machine Development, Depoliticization, and Bureaucratic Power in Lesotho* (University of Minnesota: Minneapolis, 1994).

[136] A Isaacman, Large Dams, Sustainable Livelihoods and The Use of Oral Histories: The Case of Cahora Bassa, *Proceedings of the Forty-ninth Pugwash Conference on Science and World Affairs, Rustenburg, South Africa, 7-13 September 1999: Confronting the Challenges of the 21st Century,* (World Scientific: Singapore, 2001), pp. 382-396; A Isaacman, Displaced People, Displaced Energy, And Displaced Memories: The Case of Cahora Bassa, 1970-2004, *The International Journal of African Historical Studies*, 38(2), 2005, pp. 201-238; AF Isaacman, & BS Isaacman, Dams, Displacement, and the Delusion of Development … (2013).

alleviation initiatives.[137] According to Aubriot, interest among researchers in communal irrigation began in the 19th century with colonial powers (especially France and Spain) seeking legal ways forward to their causes.[138] This was inclusive of the political restructuring these areas underwent during their colonial era. What further comes to mind within the African context is the hydro-political repertoire drawn from scholars with an interest in the Southern African Development Community (SADC). Together the 14 countries that form the SADC region share about 70% of their watercourses, a fact that validates the need for effective coexistence and policy. The countries that form part of this regional grouping include Angola, Botswana, the Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe.[139] To cement a good standing of agreement the countries and their ministries signed a protocol of understanding in 1995 and again in 1998 called the SADC Protocol on Shared Watercourses System after the SADC Treaty was signed on 27 August 1992 committing them to a vision, objectives and institutional framework.[140] It is, however, unfortunate to note that by 2015 only 10 of the 14 countries had set up Comprehensive African Agriculture Development Programme (CAADP) frameworks[141] to allow for better investment planning in the agricultural sector.[142] The extent of their focus on irrigation was, however, not clear for Mwamakamba *et al.* Such is captured in a 2002 publication by various authors from various fields attempting to bring hydro-politics to the fore as a subject worthy of being a discipline on its own, especially focusing on the southern African region.[143] Not all chapters in their publication are of

---

[137] M Lipton, J Litchfield, & JM Faurès, The Effects of Irrigation on Poverty: A Framework for Analysis, *Water policy*, 5(5-6), 2003, pp. 413-427.

[138] O Aubriot, The History and Politics of Communal Irrigation: A Review, *Water Alternatives*, 15(2), 2022, p. 308.

[139] A Turton, Introduction, *in* A Turton & R Henwood (eds.), *Hydropolitics in a developing world: A southern African perspective* (African Water Issues Research Unit: Pretoria, 2002), p. 5.

[140] P Ramoeli, The SADC Protocol on Shared Watercourses: History and Current Status, *in* A Turton, & R Henwood (eds.), *Hydropolitics in a Developing World: A Southern African perspective* (African Water Issues Research Unit: Pretoria, 2002), pp. 105-106.

[141] CAADP is a separate initiative by several African countries working to alleviate poverty through agricultural development. *See* African Union, The Comprehensive African Agricultural Development Programme, 2021, [online source, accessed: 1 September 2024, https://au.int/en/articles/comprehensive-african-agricultural-development-programme].

[142] SN Mwamakamba, LM Sibanda, J Pittock, R Stirzaker, H Bjornlund, A van Rooyen, P Munguambe, MV Mdemu & JJ Kashaigili, Irrigating Africa: Policy Barriers and Opportunities for Enhanced Productivity Of Smallholder Farmers, *International Journal of Water Resources Development*, 33(5), 2017, p. 826.

[143] A Turton & R Henwood (eds.), *Hydropolitics in a Developing World …* (2002).

importance for the scope of this study as many focus on legal and theoretical issues. However, the first and last chapters, authored by Turton, give the reader a better understanding of the then and suggested future understandings and endeavours of hydro-politics within the intellectual corpus.[144] While introducing the scope of the publication, Turton reflects on various authors' attempts at a definition for the concept of hydro-politics.[145] Based on his analysis he surmises that hydro-politics "is the authoritative allocation of values in society with respect to water".[146] He defines this as a means to explain the reasoning behind the importance of the book. Additionally, it serves to make researchers cognisant of the aspects of 'scale' and 'range' whenever they want to attempt to investigate the concept of hydro-politics or do a water basin-related study, especially when linked to economics, legislation, or social studies. Other scholars that are cognisant of scale are Murito and Lautze and their shared insight into the possible reasons behind successful and failed irrigation schemes in the SADC region.[147]

From an analysis of 107 documents ranging from journal articles, and theses to, a large corpus of reports that derives from various institutions, Murito and Lautze draw some very interesting conclusions. One such was the likelihood of government-managed schemes failing, whereas those privately owned had the largest chance of success.[148] One wonders again if scale does not play a role as we contemplate once more the "hero" project often associated with government-led irrigation projects. Contrary to these are the small-scale irrigation projects that have received favourable reviews from various authors

---

[144] A Turton, Hydropolitics: The Concept and its Limitations, pp. 13-22, & A Turton, Expanding the Hydropolitics Concept: Towards a New Research Agenda for Southern Africa, pp. 239-245 *in* A Turton & R Henwood (eds.), *Hydropolitics in a Developing World …* (2002).

[145] According to Turton, Meissner "sees the study of hydropolitics as the systematic investigation of the interaction between states, non-state actors and a host of other participants, like individuals within and outside the state, regarding the authoritative allocation and/or use of international and national water resources", and the definition of AP Elhance does not cover "all forms of political interaction over water". Turton's references are as follows: R Meissner, Water as 'n Bron van Politiek Konflik en Samewerking … (MA, RAU, 1999); AP Elhance, *Hydropolitics in the Third World, Conflict and Co-Operation in International River Basins* (United States of America Institute of Peace Press: Washington DC, 1999); & D Easton, *A Systems Analysis of Political Life* (John Wiley: New York, 1965).

[146] A Turton, Introduction, *in* A Turton & R Henwood (eds.), *Hydropolitics in a Developing World …* (2002), pp. 5-17.

[147] J Murito & J Lautze, Irrigation in Southern Africa: Success or Failure, *Irrigation and Drainage*, 64, 2015, pp. 180–192.

[148] J Murito & J Lautze, Irrigation in Southern Africa…, *Irrigation and Drainage*, 64, 2015, p. 186.

on the practice within several regions in Africa.[149] Adams,[150] however, warned in 1990 that scale is often not the defining factor for success but agrees with Murito and Lautze that bureaucratic involvement impacts (negatively) the informal nature of small-scale irrigation projects. These latter authors' analysis also showed that most schemes tended to be more successful the newer they were, while schemes older than 16 years tended to revive once more with renewed political (or other) interest.[151] Their method of determining success was, among others, weighed against factors such as the management style of the scheme; the irrigation method employed; the plot size served; the types of crops farmed and so too the agro-ecological zone (for example humid vs semi-desert) in which irrigation was applied, not excluding the context of each country. Even with all these factors weighed they still discovered at least three areas of research in need of improvement. First is the necessity for fieldwork. This is a means for a better grasp of the real-world context of the irrigated areas. Secondly, they suspect a deeper unpacking of the criteria under which they scrutinised the schemes, would give a more in-depth understanding of the interrelatedness of the relationships between factors that determine the success or failure of irrigation schemes. The third area they identified speaks to more data and resources that could be relied upon for even richer conclusions to be drawn especially considering extra themes such as broader development goals. On that note, one area that was found lacking in their study was the tendency to rely more on information from irrigation schemes situated in the east of the SADC region. One of the largest and oldest schemes, the Vaalharts Irrigation Scheme (VHIS), situated in South Africa, for example, was not considered in their study. Additionally, though the consultation of subject specialists such as Fanadzo and Van Averbeke (both professors in the field of agricultural studies) makes the research quite relevant to the planning and management sectors of the countries consulted, the study was not historic. Historical studies such as these with a specific focus on the cross-border relationships between countries in southern Africa were quite hard to come by. Many studies, such as that of

---

[149] Consider for example: JA Burney, & RL Naylor, Smallholder Irrigation as a Poverty Alleviation Tool in Sub-Saharan Africa, *World Development*, 40(1), 2012, pp. 110-123; P Nakawuka, S Langan, P Schmitter, & J Barron, A Review of Trends, Constraints and Opportunities of Smallholder Irrigation in East Africa, *Global food security*, 17, 2018, pp. 196-212.

[150] WM Adams, How Beautiful is Small? Scale, Control and Success in Kenyan Irrigation, *World Development*, 18(10), 1990, pp. 1309-1323.

[151] J Murito, & J Lautze, Irrigation in Southern Africa…, *Irrigation and Drainage*, 64, 2015, p. 185.

Mwamakamba *et al.* focus on the management aspect of irrigation schemes in the area like Murito and Lautze.[152]

Mwamakamba *et al*'s. identified themes under which they chose to investigate the productivity potential of irrigation farming in sub-Saharan Africa that may be of interest to this study. It may help this study to also identify the potential challenges and opportunities within other irrigation schemes under investigation. These influential themes include the ownership of land as it impacts access to resources such as funding and financing; farmer organisations specific to irrigation services that are seen as limiters to growth where governments' overlapping involvement limit farming organisations' autonomy (a factor also mentioned by Murito and Lautze); improved water use efficiency through knowledge and technology thus enabling a fair distribution of water supply to all irrigators; and lastly, improving the access and quality of information (market-related), seeds and equipment.[153]

2.4 South African irrigation scheme views in the intellectual corpus

In 1999, Steyn describes the lack of scholarly work with a clear environmental theme by historians in the decades before, contributing to South Africa's then-increased political isolation.[154] This apparent lack, however, already began to change roughly in the 1980s for South African historians. Conservation historians have added their voice to the environmental theme surrounding agricultural and irrigation aspects with publications from South African historians surfacing especially in the latter years of the 20th century into the 21st century.[155] With contributions of this nature initially coming from scholars from other fields, their studies may also be noted here as they pertain to irrigation,[156]

---

[152] SN Mwamakamba, *et al.*, Irrigating Africa…, *International Journal of Water Resources Development*, 33(5), 2017, pp. 824-838.

[153] SN Mwamakamba, *et al.*, Irrigating Africa…, *International Journal of Water Resources Development*, 33(5), 2017, pp. 828-835.

[154] P Steyn, A Greener Past? An Assessment of South African Environmental Historiography, *New Contree,* 46, 1999, pp. 7-9.

[155] D Anderson, & RH Grove, (eds.), *Conservation in Africa: Peoples, Policies and Practice* (Cambridge University Press: Cambridge, 1988); F Khan, Rewriting South Africa's Conservation History: The Role of the Native Farmers Association, *Journal of Southern African Studies*, 20(4), Dec. 1994, pp. 499-516; W Beinart, & P Coates, *Environment and History: The Taming of Nature in the USA and South Africa* (Taylor & Francis: India, 2002); W Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950* (OUP Oxford: United Kingdom, 2008).

[156] Consider for example the three publications by Holbrook: G Holbrook, Lessons To Be Learned From Two Irrigation Schemes, *Development Southern Africa*, 13(4), 1996, pp. 601-609; G Holbrook, Water

dam,[157] and agricultural histories. On the first of these (irrigation) Van Eeden, a historian, brought attention to the impact of economic priorities when underground water sources were redirected to fulfil the needs of gold miners in the Oberholzer district, Carletonville, in the current Gauteng province.[158] The subsequent negative impact this had on the agricultural community of this area was noted considering the changing nature of communities and the development of regions along the lines of predominant economic activities. Additionally, in the same timeframe as Steyn's observations comes Jacobs' article on the impact of the Kuruman eye on the local water sources and subsequent food production practices of the local Batlhaping and Batlharo in the early to late 1800s.[159] She highlights the growing interest in different forms of agriculture and alludes to the duties assigned to gendered roles in these societies and how these relationships too were impacted as they adapted to their changing environment. Her contribution is noteworthy and relied upon in further chapters as ownership and colonial presences impacted the local populations. Webster adds that apart from drought disrupting traditional forms of agriculture, colonists too had this effect.[160] According to him, colonial presences used their knowledge of dam construction and irrigation infrastructures to colonise and control the local populations they concurred within southern Africa.[161]

Shillington's chapter in the book, *Putting a Plough to the Ground*, specifically describes the water storage and irrigation initiatives taken by the London Missionary Society's missionary, Holloway Helmore, along with the help of *Kgosi* Jantje Mothibi in 1851-1855

---

of Life: The Social Effect of an Irrigation Scheme of the Fish River (Eastern Cape), *South African Journal of Ethnology*, 20(1), Mar. 1997, pp. 39-42; G Holbrook, Shoring Up Hydraulic Despotism: Class, Race and Ethnicity In Irrigation Politics in the Eastern Cape Province, South Africa, *Journal of Contemporary African Studies*, 16(1), 1998, pp. 117-132.

[157] The growing consciousness of the environmental impact of dams in South Africa was investigated by Van Vuuren *in* L Van Vuuren, Together We Can Do More – Environmental Consciousness in the South African Dam Construction Sector (1945-1980), *TD The Journal for Transdisciplinary Research in Southern Africa*, 9(1), Jul. 2013, p. 51-80. Her book publication on South African dams also adds to this repertoire: L van Vuuren, *In the Footsteps of Giants …* (2012).

[158] ES Van Eeden, Waterkwessies, met Spesifieke Verwysing na die Uitwerking Van Wateronttrekking op die Landboubedryf in die Oberholzerdistrik (Carltonville-gebied), 1959 - 1972, *New Contree*, 39, 1996, pp. 78-91.

[159] NJ Jacobs, Environment, Production and Social Difference in the Kalahari Thornveld, c1750-1830, *Journal of Southern African Studies*, 25(3), 1999, pp. 347-373.

[160] A Webster, Water and History in Southern Africa, *The Journal of African History*, Published online 2024, p. 3.

[161] A Webster, Water and History in Southern Africa, *The Journal of African History*, Published online 2024, p. 5-7.

near Taung.[162] They constructed a dam in the Harts River for irrigation since the drought had begun to severely impact the locals' pastoralist lifestyle, and adaptation was needed. Though the dam was never used for its intended purpose due to the river's natural rerouting after severe floods in 1856, it is pointed out that changing agriculture practices were not strange for traditional pastoralists, similar to that of the above-mentioned people of East Africa.[163]

Continuing the historic interest in irrigation scheme developments among South African scholars within the 21st century is Teisch. To set the stage for irrigation agriculture, Teisch captures the events of American engineers in South Africa, as Rhodes' recruits, at the turn of the 19th century.[164] Teisch also compares the early stages of irrigation agriculture in South Africa with the developmental stages in California, America, which he argues, has had a profound impact on how colonial enterprises in, for example, mining, (not agriculture, due to supposed clashing cultural reasons) was furthered in South Africa.[165] Middelman and Visser both published articles on the history of two separate irrigation schemes in 2015. Middelman reflected on the Hartebeespoort Irrigation Scheme's historic purpose of poverty alleviation in white communities as with many projects of the early 20th century in South Africa.[166] Visser's article takes the reader to the Little Karoo as he reflects on a century of water-related issues between the Calitzdorp Irrigation Scheme and the town's municipality from 1912-2013.[167] Settling himself within the scope of a water historian, he reminds the reader that even as recent as 2015 there remained a lack

---

[162] K Shillington, Irrigation, Agriculture and The State: The Harts Valley in Historical Perspective, *In* W Beinart, P Delius, & S Trapido (eds.), *Putting a Plough to the Ground …* (1986), pp. 314-315.

[163] We are reminded of: WM Adams & DM Anderson, Irrigation before Development …*, African Affairs*, 87(349), Oct. 1988, pp. 519-535; CW Beer, Social Development in the Gezira Scheme, *African Affairs*, 54(214), 1955, pp. 43-51.

[164] J Teisch, *Engineering Nature* (The University of North Carolina Press: North Carolina, 2011), [online source, accessed: 26 September 2021, https://www.perlego.com/book/539663/engineering-nature-pdf].

[165] The author however considers that there are too many gaps in Teisch's argument, such as for example the obvious hostility felt between Afrikaners and Englishmen at that time and why the former would naturally not wish to subscribe to any Crown-induced agricultural practices within their republic. These nuances were found absent in Teisch's article. *See* J Teisch, 'Home is Not So Very Far Away': Californian Engineers in South Africa, 1868–1915, *Australian Economic History Review*, 45(2), 2005, pp. 139-160.

[166] TJD Middelmann, The Hartebeespoort Irrigation Scheme: A Project of Modernisation, Segregation and White Poverty Alleviation, 1912–1926*, South African Historical Journal,* 67(2), 2015, pp. 158-179.

[167] W Visser, Water Contestations in The Little Karoo: Liaisons Between the Calitzdorp Irrigation Board and The Calitzdorp (Kannaland) Municipality, 1912- 2013, *TD The Journal for Transdisciplinary Research in Southern Africa*, 11(3), Dec. 2015, pp. 186-207.

of scholarly work done on the theme of South African hydro-politics,[168] a sentiment he shares with two other historians, that is Beinart[169] and Gouws.[170] The sentiment was already made apparent in 2002 by Turton and Henwood,[171] mentioned earlier in this chapter. In a second publication on irrigation histories, Visser broadens the scope to a comparative study of the Kammanassie Irrigation Scheme (1919-1925) and the Buchuberg Irrigation Scheme (1929-1934).[172] As with Murito and Lautze in the previous section, Visser considered the successes and failures of these schemes with special regard to their purpose as social-economic upliftment projects. He reflects on the impact political incentives have on the success rate of these projects with poor planning and quick-fix mindsets relying on persons (supposed farmers) with little to no knowledge of irrigation and authorities expecting that such ill-equipped persons would suddenly become great irrigators and agricultural producers. Whelan also considers this while reflecting on the success of the Winterton Irrigation Scheme in KwaZulu-Natal.[173] Comparing it to the success of the Gezira Scheme in Sudan, she shows the importance of the social responsibility of local communities as imperative to the success (in especially their social sustainability) of these schemes. She equates the importance of social sustainability planning to that of infrastructure planning and implementation as part of its success.

The failure in proper planning of state-owned projects (similar to the African trends) is also considered within the state of early 20th -century department heads, like Kanthack and Lewis, both directors of the Department of Irrigation dating from 1912-1921 and 1921-1941 respectively. As noted, South Africa is a water-scarce country and as a major world producer of several crops, it is no wonder that the agricultural sector is noted as the largest water consumer of all sectors.[174] The need for closer attention to water management within this sector dates back as far as the 19th century, with authors such

---

[168] W Visser, Water Contestations in The Little Karoo…, *TD* …, 11(3), Dec. 2015, pp. 187-188.
[169] W Beinart, The Rise of Conservation in South Africa … (2008), pp. xv, & xix.
[170] CM Gouws, "The Tragedy of The Water Commons: The Case of The Lower Orange Water Management Area", *The Journal for Transdisciplinary Research in Southern Africa*, 4(1), 2008, p. 256.
[171] A Turton, & R Henwood (eds.), *Hydropolitics in The Developing World …* (2002).
[172] W Visser, Water as Agent for Social Change, 1900–1939 …, *Historia*, 63(2), Nov. 2018, pp. 40-61.
[173] D Whelan, Water, Settlement and Food Provision in Natal Colony: The Winterton Irrigation Settlement, 1902–1904, *Historia*, 64(1), May 2019, pp. 42-64.
[174] W Visser, Water Contestations in The Little Karoo…, *TD The Journal for Transdisciplinary Research in Southern Africa*, 11(3), Dec. 2015, pp. 52-58; 186-187.

as Kanthack, the first director of the then Department of Irrigation (established in 1912), who gave an insight into management strategies for irrigation agriculture.[175] A hundred years earlier, Kanthack came to the same conclusion as authors such as Murito and Lautze[176], which is, that careful consideration needs to be given when the government is involved with irrigation scheme developments as these projects very often seem to fail.[177] According to Kanthack, the successful implementation of government-involved schemes is based on two conditions. Firstly (and ideally), the relevant farmers should be experienced with a well-established background in irrigation farming. Secondly, if farmers are inexperienced, they need to be financially invested and accountable. In both instances, political influences should be minimal as false promises for better prospects and continuous financial assistance with no measure of accountability will result in a fruitless endeavour. An important aspect was the education and growth that farmers experienced. One way in which this could be achieved, according to Kanthack, was through co-operatives where new farmers and experienced farmers could have a platform to share knowledge. This is an important feature in later chapters of this study as the steps and processes he suggests towards a successfully implemented irrigation scheme are weighed against the process undertaken in the Taung region.

Another review of irrigation schemes and what we know about them in the South African context are presented by Van Averbeke, Denison and Mnkeni. Though their contribution is not historical the expanse of their analysis includes 302 irrigation schemes.[178] In 2011, drawing from 20 years of research completed by various authors from the Water Research Commission (WRC) on smallholder irrigation schemes, these authors attempted to capture the areas in which most contributions devoted their attention, whilst also pointing out intellectual gaps. Though they acknowledge the contributions of other institutions in South Africa (such as theses from university graduates), their focus was more on the “practical application” of operational schemes and therefore, the managerial

---

[175] FE Kanthack, Irrigation Development …, *Agricultural Journal of the Union of South Africa*, 36(5), 1910, pp. 530-540.
[176] J Murito, & J Lautze, Irrigation in Southern Africa …, *Irrigation and Drainage*, 2015, 64, pp. 180–192.
[177] FE Kanthack, Irrigation Development…, *Agricultural Journal of the Union of South Africa*, 36(5), 1910, pp. 533-535.
[178] W van Averbeke, J Denison, & PNS Mnkeni, Smallholder Irrigation Schemes in South Africa …, *Water SA*, 37(5), WRC 40-Year Celebration Special Edition 2011, p. 797.

aspect and size of operations, than on the historical contribution of studies.[179] From inputs by WRC researchers, they found that a total of 16 studies have been conducted on the topic of smallholder irrigation schemes since 1992. It was however clear that the intellectual gaps at that stage included a need for more research on the socio-economic aspects of smallholder irrigation schemes and how these have impacted people and their livelihoods.[180] Van Vuuren and Backeberg, managers from the WRC and researchers in their own right, have also contributed to the repertoire on the history of sustainable irrigation schemes as they reflected on past successes and failures in a conference paper in 2015.[181] Two scholars, who, in the late 20th century addressed this 21st-century shortcoming, were Rossouw and Bembridge, in their socio-impact study of the Ncora Irrigation Scheme.[182] These authors investigated the influence of technology on the farming practices of a rural community.[183]

It has been stated that academia has addressed the social impact of irrigation schemes linked to dam projects in recent times. Apart from various international studies, researchers such as De Wet, Visser, Tekana and Oladele have attempted to fill this gap in the African context.[184] As with their studies, a prominent focus was on the economic strife in the early 20th century within a particular racial grouping and the household welfare

---

[179] The two sources referred to by them as university contributions were from Bembridge and Rossouw. The former went on to become a prolific writer on the theme of irrigation scheme farming in South Africa especially focusing on the former homeland areas. *See* TJ Bembridge, A Systems Approach Study of Agricultural Development Problems in Transkei (PhD, University of Stellenbosch, 1984); JG Rossouw, The Impact of Imposed Technology on a Traditional Rural Society in Transkei: An Evaluation of the Ncora Irrigation Scheme (DSc, University of Fort Hare, 1989).

[180] W van Averbeke, J Denison, & PNS Mnkeni, Smallholder Irrigation Schemes in South Africa …, *Water SA*, 37(5), WRC 40-Year Celebration Special Edition 2011, pp. 801-803.

[181] L van Vuuren, & G Backeberg, Sustainable Irrigation in South Africa: Evidence from History, International Commission on Irrigation and Drainage 2015, Workshop Paper, [online source, accessed: 24 September 2024, https://icid2015.sciencesconf.org/75961/ICID_26th_ERC_Paper_final_by_L_van_Vuuren_and_G_R_Backeberg_for_WG_HIST_Side_Event.pdf].

[182] The Ncora Irrigation Scheme is situated within the previous homeland region known as the Transkei.

[183] JG Rossouw, & TJ Bembridge, Human Impact of Imposed Technology on the Ncora Irrigation Scheme in Transkei, *Development Southern Africa*, 1993, 10(4), pp. 535-547.

[184] C de Wet, The Socio-Ecological Impact of Development Schemes in the 'Homelands' of South Africa, *South African Journal of Science*, July-October 1990, 86, pp. 443-444; W Visser, Water as agent for social change, 1900–1939 …, *Historia*, 63(2), Nov. 2018, pp. 40-61; SS Tekana, & OI Oladele, Impact Analysis of Taung Irrigation Scheme on Household Welfare among Farmers in North-west Province, South Africa, *Journal of Human Ecology*, 36(1), 2011, pp. 69-77.

of families in the agricultural sector from the 1970s to the 1990s,[185] with emphasis on the Taung Irrigation Scheme. Each of these studies investigated either the socio-ecological or socio-economic impact of dams and irrigation schemes on groupings of people and how bad management, planning and poor support structures impacted their success and ultimately the welfare of those populations dependent on them.

Earlier it was noted that a large irrigation scheme in pre-colonial East Africa had failed largely due to constraints in labour force availability. In colonial southern Africa, it was most likely due to the employability of people (and the alleviation of their poverty) that these schemes (especially as mentioned by Visser) were considered an initial success. More recently though, Tempelhoff has attempted to capture similar changes with a specific focus on water as contributing to the WEF (Water/ Energy/ Food) nexus ideology. His book begins with the topic of irrigation and how this form of agriculture was seen as part of a dedicated effort from the government as far back as 1912 as a means of economic growth for a nation-state.[186] Following a chronological approach, Tempelhoff observes the shift in focus throughout the 20th century from a governmental managerial perspective in which conservation stayed the course. Yet he reflects on the lamentations of authors who felt the lack of observable evidence from the government in persisting in the country's "hydraulic mission", which incorporated conservation strategies into its planning and implementation of water projects, whichever they may have been, such as irrigation or otherwise.[187]

Since the advent of the 21st century, the majority of the 359 large dams are owned by the Department of Water Affairs (DWA).[188] Anthony Turton, an internationally acclaimed scientist and researcher, with a keen appetite for past water history developments, has also focused on hydro-politics. According to his website, he was one of the first researchers to publish a multi-focused book on hydro-politics that links water to peace

---

[185] See for example the socio-environmental impact of dams that was investigated by SANCOLD and reported on in the publication, South African National Committee on Large Dams, *Large dams and water systems in South Africa* (SANCOLD: Pretoria, 1994).

[186] JWN Tempelhoff, *South Africa's Water Governance …* (2018), pp. 27-136.

[187] JWN Tempelhoff, *South Africa's Water Governance …* (2018), pp. 6-12, 86-87, 330-334, & 389-390.

[188] C Oosthuizen *et al,* Rehabilitation of Dams in South Africa … 40 Years On, *in* RR Garcia, MA Mir, FH Bitrian, RL Dios, MD de Celix Caballero, M de Andres Rodriguez-Trelles, AC Minguez, MSM-C Sanchez, MAP de Agreda, & JMV Gonzalez-Elipe (eds.), *Dam Maintenance and Rehabilitation II* (Taylor & Francis: London, 2011), p. 239.

rather than conflict.[189] Considering, however, the roughly 100 years of water and legislative history in South Africa, Bate and Tren would argue that the water-related conflicts (stemming from poor governmental management) are far from over.[190] A study that summarises the intricacies of such negotiations was published in 2010. In it, the Orange-Senqu River Basin and Lesotho Highlands Water Project bring to attention the potential for economic benefits whilst not ignoring the need to consider the socio-environmental impacts of such large-scale projects.[191] Apart from Tempelhoff's historical analysis of Rand Water's 100-year history reflected on earlier, he also laments how little is comparatively known of the hydro-politics and water management strategies of the South African homelands during the apartheid regime.[192] South Africa's political history and strife have been captured within the works of at least two publications on water history in South Africa. Bate and Tren followed the trail of misallocation of water as a global problem and also traced power struggles within South Africa as closely associated with that of water and the control over its availability, particularly from a legal perspective.[193] The changes in political dispensations, though having a great impact in the form of management, did not cause the failure of the Rand Water board. Most likely because of the sheer amount of people who relied on its successful management - enhanced endeavours for its continuance. The Taung Dam's completion (though not of its irrigation scheme) and ultimate use experienced the same political changes as all other state institutions at the end of apartheid. Therefore, Tempelhoff's publication is interesting. Simply to see how the transition of power in this aspect could and probably should have been done, to ensure its success. However, the Taung Dam has ultimately failed to be used for its intended purposes. The book published by Scott on the failures of such schemes in serving the needs of its intended recipients will help to better understand the reasons for such continued failure.[194]

---

[189] A Turton, *Scientific Publications*, n.d. [online source, accessed: 27 April 2022, https://www.anthonyturton.com/scientific-publication-anthony-turton.php]; A Turton, & R Henwood (eds.) *Hydropolitics in The Developing World …* (2002).

[190] R Bate, & R Tren, The Cost of Free Water: The Global Problem of Water Misallocation and The Case of South Africa (The Free Market Foundation: Johannesburg, 2002), pp. 9-15.

[191] A Earle, A Jagerskog, & J Ojendal (eds.), *Transboundary Water Management: Principles and Practice* (Earthscan Publishing: London, 2010), pp. 215-221, & 231-233.

[192] JWN Tempelhoff, *The Substance of Ubiquity: Rand Water 1903-2003* (Kleio Publishers: Vanderbijlpark, 2003), pp. 159-160, 326-397, & 438-456.

[193] R Bate, & R Tren, *The Cost of Free Water* … (2002).

[194] JC Scott, *Seeing Like a State* … (1998).

2.4.1 Searching for historical studies on irrigation scheme developments in the era of homelands in South Africa

Few historical resources could be found that specifically focused on irrigation scheme developments within the homeland regions of the apartheid regime. A possible reason for this shortcoming may be due to what has been noted of the poor success rates of agricultural schemes in general and especially for the few irrigation schemes implemented in these regions.[195] The reasons for their failures are not so important at this stage of the study, but sources such as Bembridge summarised the main reasons (among others) as relating to issues of land distribution, market access, capital, skills and labour shortages.[196] Bembridge, a prolific writer on irrigation projects within especially the former homelands, appears to have often been relied on by authors such as Van Averbeke, Denison and Mnkeni.[197] His studies however mostly focused on the effective management of irrigation schemes rather than their historical development. Secondary to the lack of success in these schemes is perhaps a lack of resources, especially so for primary source material. Much of what was consulted on the topic of irrigation, and agriculture, relied quite heavily on secondary sources, most likely because much of what is written is not necessarily of a historical nature.[198] These non-historic sources rather focused on human and resource development and quite understandably consulted source material more in line with viability studies as they reflected on matters relating to better planning and development of rural communities.[199] They also typically include

---

[195] *See* for example C de Wet, The Socio-Ecological Impact of Development Schemes in the 'Homelands' of South Africa, *South African Journal of Science*, 86, 1990, pp. 443-444.

[196] TJ Bembridge, Problems and Lessons from Irrigation Projects in Less Developed Countries of Africa, *Development Southern Africa*, 3(4), 1986, pp. 600-618; JG Rossouw, & TJ Bembridge, Human Impact of Imposed Technology on the Ncora Irrigation Scheme in Transkei, *Development Southern Africa*, 10(4), 1993, pp. 535-547. *See* also for example G Porter, & K Phillips-Howard, Agricultural Issues in The Former Homelands of South Africa: The Transkei, *Review of African Political Economy*, 24(72), 1997, pp. 185-202.

[197] Van Averbeke, Denison and Mnkeni refer to no less than six of Bembridge's sources in their article. *See* W van Averbeke, J Denison, & PNS Mnkeni, Smallholder Irrigation Schemes in South Africa: A Review of Knowledge Generated by the Water Research Commission, *Water SA,* WRC 40-Year Celebration Special Edition, 37(5), 2011, p. 806.

[198] Consider for example what can be considered the various contemporary studies referred to by de Wet *in* C de Wet, The Socio-Ecological Impact of Development Schemes in the 'Homelands' of South Africa, *South African Journal of Science*, 86, 1990, pp. 446-447.

[199] One such scholar was already referred to in the beginning of this section, i.e. Holbrook. I mention him here again as his focus on the Tyefu and Keiskamma irrigation schemes implemented in the homeland of Ciskei is historically significant yet not historic in nature. *See* G Holbrook, Lessons to be Learned From Two Irrigation Schemes, *Development Southern Africa*, 13(4), 1996, pp. 601-609; G Holbrook, Water of Life: The Social Effect of an Irrigation Scheme of the Fish River (Eastern Cape),

international studies focusing on human and agrarian developments elsewhere (beyond South African borders).[200] Though, understandably, the human endeavour for food security in agrarian societies would likely not differ much regardless of locality, the socio-political situation within the South African context at the end of the 20th century was rather unique. This is especially so, considering the implementation of the system of "betterment" within the homelands of the previous dispensation of South Africa.[201] Authors such as Yawitch have looked into the history, legality, and impact thereof on the homeland societies.[202] Environmentally, socially, and economically, agriculture through "betterment planning" should have assisted the communities of these areas, but as McAllister has pointed out, this has rarely been the case.[203]

Sources that referred to the contributions of historians that did attempt to draw attention to at least agrarian endeavours, if not specifically irrigation, include Beinart[204] and Bundy.[205] The former has written a few more articles relating to the agrarian society of the South African homelands and laments the need for academics, and daresay historians, to move beyond the then (2012) available repertoire on these former states.[206] The political involvement of South African histories seems unavoidable, especially where

---

South African Journal of Ethnology, 20(1), Mar. 1997, pp. 39-42; G Holbrook, Shoring up Hydraulic Despotism: Class, Race and Ethnicity in Irrigation Politics in the Eastern Cape Province, South Africa, *Journal of Contemporary African Studies*, 16(1), 1998, pp. 117-132. Consider also the study by sociologist Sishuta who studied the same scheme: B Sishuta, Small-scale Irrigation Development for Sustainable Rural Development: A Case Study of the Tyhefu Irrigation Scheme, *African Sociological Review*, 9(2), 2005, pp. 184-206. There was however reference made to departmental publications from the Republic of South Africa as well as the Republic of Ciskei.

[200] Especially considering the larger African perspective. *See* K Phillips-Howard, & G Porter, Small-Scale Irrigation and the Reconstruction and Development of Transkei, South Africa, *Area*, 28(3), Sept. 1996, pp. 382-383, making reference to for example B Haagsma, C Reij, & I Scoones (eds.), *Studies on Indigenous Soil and Water Conservation in Africa* (Earthscan: London, n.d.).

[201] The "Betterment Schemes" of the South African 1930s are in retrospect part of the initiatives led by the then government to remove populations of people and settle them in smaller allocated areas. It was believed that the image they were to portray on paper was that of land allocation for better sustainable living, but in truth the longevity thereof was doomed. *See* Yawitch for an analysis on the rationale of the implementation of this scheme: J Yawitch, *Betterment: The Myth of Homeland Agriculture* (SA Institute of Race Relations: Johannesburg, 1982).

[202] J Yawitch, *Betterment* ... (1982), pp. 5-31.

[203] PA McAllister, Reversing the Effects of 'Betterment Planning' in South Africa's Black Rural Areas, *Africa Insight*, 21(2), Jan. 1991, p. 116.

[204] Porter & Phillips-Howard refer to an article by Beinart: W Beinart, Transkeian Smallholders and Agrarian Reform, *Journal of Contemporary African Studies*, 11, 1992, pp. 178-199.

[205] The focus of Bundy's sources however was more on peasant communities dating from roughly 1870 – 1913 with very little focus on the impact of irrigation agricultural practices: C Bundy, *The Rise and Fall of the South African Peasantry* (David Philip: Cape Town, 1988).

[206] W Beinart, Beyond 'Homelands': Some Ideas about the History of African Rural Areas in South Africa, *South African Historical Journal*, 64(1), 2012, p. 5.

land distribution has played a role. Five years later Beinart was again involved in another study, not of a historic nature, but very much reflective of once more the failure of agricultural schemes situated in former homeland regions with reasons not that different from what has been stated earlier in this section.[207] In any agricultural history, especially about regions such as homelands, studies with a hydro-political theme remain of interest.

Another scholar who attempted to capture the historic development of an agrarian society situated within the homeland called Venda, was Lahiff in *An apartheid Oasis*.[208] Much like his focus in his thesis,[209] Lahiff divided the book into segments, focusing first on the context of the homeland policy under the apartheid regime before driving towards an understanding of the Venda people, their land, and agricultural practices. His case study was focused on Tshiombo, where the people of the area were said to be commercially minded as they farmed within one of the largest irrigation schemes of its type and time.[210] Another point of interest that perhaps deserves more attention is the contribution his studies have made to the history of a river.[211] The histories of rivers such as that of the Mutale River (in the case of Lahiff's Tshiombo village) and perhaps more studies of that nature could make for interesting environmental histories of agrarian societies whose livelihoods were dependent on the secure flow of the river as was seen in some international studies mentioned earlier.[212]

2.4.2 Taung's irrigation scheme developments as a subject of interest in academic circles

Many of the studies mentioned in the previous section covered a transitioning aspect as their scope spanned throughout the apartheid regime into the democratic dispensation

---

[207] M de la Hey, & W Beinart, Why Have South African Smallholders Largely Abandoned Arable Production in Fields? A Case Study, *Journal of Southern African Studies*, 43(4), 2017, pp. 753-770.
[208] E Lahiff, *An Apartheid Oasis: Agricultural and Rural Livelihoods in Venda* (Frank Cass: London, 2000).
[209] E Lahiff, Agriculture and Rural Livelihoods in a South African 'Homeland': A Case Study from Venda, (D.Phil., University of London, 1997).
[210] E Lahiff, *An Apartheid Oasis* … (2000), p. 63.
[211] Lahiff reflects on the works of O'Keeffe, Uys & Bruton as he points out the impact of flowing rivers on communities. *See* E Lahiff, *Agriculture and Rural Livelihoods in a South African 'Homeland'…* (1997), pp. 142-143. For the source of O'Keeffe, Uys and Bruton *see* JH O'Keeffe, M Uys, & MN Bruton, Freshwater Systems, *in* RF Fuggle, & MA Rabie (eds.), *Environmental Management in South Africa* (Juta: Cape Town, 1992).
[212] In the international section several studies have been referred to and some specifically contemplated agrarian societies situated and dependent on rivers.

post-1994. Though it was envisioned that a section be set aside for the contributions of scholarly work focusing on irrigation scheme developments within the borders of the North-West Province as a demarcated region before zoning into the region of Taung, it was found that too little has been published on these localities. This was especially so for any work done from a historical perspective. The few contributions that were however made are noted, especially since most of them had made either specific mention of Taung or irrigation practices within the vicinity.

The first is Shillington, a historian of note, who in 1986 added his contribution to the numerous studies on the Vaalharts Irrigation Scheme (VHIS) from which a portion of the agrarian community in Taung has been benefitting for decades.[213] The VHIS was conceptualised in the 19th century and physical presence since the mid-1930s as a state-owned and initiated project meant for the upliftment of impoverished communities.[214] Shillington provides readers with an insight into a successful politically involved scheme that in African studies noted earlier, tended towards failure. Socio-environmentally, Shillington refers to the fact that before the high technological changes brought on to the river in the form of dams, the Harts River flowed perennially. As noted earlier, a close analysis of the historical impact of rivers on communities could be of interest, because there is more secure water, but also because of the effect it may have had on the movement and settlement of people and animals.[215] It can be assumed that dry riverbeds are probably the worst situation a farming community can experience which is fully dependent on irrigation for their successful functioning. Socio-economically, the impact of the 1980s drought on both the VHIS and Taung Irrigation Scheme was analysed by Viljoen and Botha.[216] Their research aimed to compare the impact of water restrictions on the affected communities. In doing so the required research results would also guide

---

[213] K Shillington, Irrigation, Agriculture and the State: The Harts Valley in Historical Perspective, *in* W Beinart, P Delius, & S Trapido (eds.), *Putting a Plough to the Ground …* (1986), pp. 311-335.

[214] AM van A de Jager, & AH Marais, Die Aanloop tot die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), Jan. 1994, pp. 6, & 10-12.

[215] For a historical perspective of rivers on settlements and human behaviour see C Gouws, Vestiging Langs die Vaalrivier in die Omgewing van die Vredefortkoepel, 1840-2012 (PhD, North-West University (NWU), 2013).

[216] SAHWAR/ Waterlit Collection/ C2186, MF Viljoen, & SJ Botha, Economic Impact of Water Restrictions on Irrigation Farming at Vaalharts and Taung, *Proceedings of The Southern African Irrigation Symposium, 4-6 June 1991*, (WRC: Pretoria, 1995), WRC Report No TT 71/95.

the governing Department of Water Affairs (DWA) in their decision as to when and how these restrictions were to be implemented.

Not necessarily considering historical methods of analyses, are the growing contributions made by postgraduate students to the area (not all will be discussed in this chapter).[217] Their findings will, however, add to the context drawn of the area in the ensuing chapters. In his Master thesis, Du Toit, analysed the economic viability of certain irrigable crops to evaluate their potential and help the Bophuthatswana government reach their economic goals.[218] This was in light of the economic goals of the then-president of Bophuthatswana, LP Mangope and his incentive to include the agricultural sector as part of this development. His analysis is technical with obvious referrals to quantitative data sets. However, he also relied on the reports derived from sectors involved in the establishment of the Taung Irrigation Scheme (Eksteen, Van der Walt & Nissen engineers) and its management (Agricor). Kokome further builds on this postgraduate line of inquiry as he analyses the effective use of irrigation by barley-producing farmers within the Taung district.[219] His study too is not historic but contributes towards an understanding of the workings of at least one sector within the agricultural producers of the region. A decade later Tekana, in turn, focuses the reader's attention on yet another specific community served by the irrigation scheme within Taung, that is, on previously marginalised groupings such as women and the impoverished.[220] Altogether, the region and topic seem of interest to those completing their dissertations for their postgraduate studies. However, there remains a noticeable lack of other forms of publications (such as books and journals) that promise further potential research.

---

[217] JP Klopper, Mainstreaming of Smallholder Irrigators: The case of Taung Irrigation Scheme, North West, South Africa (MA, UFS, 2009); GE Acha, Problems Faced by Small-Scale Farmers in Taung Irrigation Scheme (MA, NWU, 2014); A Balarane, Determinants of Livelihood Strategies Among Smallholder Farmers On Irrigation Schemes in the North-West Province, South Africa (PhD, NWU, 2015); EN Chiyaka, The Role Of Smallholder Irrigated Agriculture in Promoting Livelihoods and Poverty Alleviation: The Case of Taung, South Africa, (MA, UFS, 2016); AL Claassens, Exploring Water Quality and Farmers' Perceptions About Water and Food Security in the Vaalharts Irrigation Scheme (MA, NWU, 2018); K Molebiemang, The Effects of The Underutilisation of The Restored Farmlands in Taung: North West Province (MA, University of South Africa (UNISA), 2020); N Mente, Factors Affecting Irrigation Management Decision-Making: The Case of Taung Irrigation Scheme in North West Province of South Africa (MA, UP, 2021).

[218] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985) pp. 2-5.

[219] JE Kokome, Evaluation of Irrigation Management Practices of Barley Farmers in the Taung Irrigation Scheme (MA, Central University of Technology, Free State, 2004).

[220] SS Tekana, Impact of Irrigation Farming on Women Empowerment … (PhD, NWU, 2014).

2.5 Concluding thoughts

This chapter served to inform the reader of the research that has been done in the field of history about the impact of irrigation schemes, dams, and the socio-environmental impacts of and on river communities in (among other) socially depressed and environmentally sensitive contexts. To do this, a geographic approach was undertaken, with a context first drawn from various internationally based studies whilst moving closer to the study area in Taung and thus to the works of local scholars. Researchers found this topic of interest although it was by no means limited to the field of history.

At the beginning of this chapter, it was mentioned that scholars have long been interested in the origins and demise of societies. Internationally some sources connected the concept of despotic leadership to themes of management with political undertones. In Africa, the concept of societal impact was often linked to the development of colonial (foreign) specialised infrastructure and management such as that of irrigation agricultural practices. A sentiment that was brought forward once more within the South African small-scale farming concept by historians such as Whelan.[221] Research on the histories of dams and irrigation schemes had, as expected, fallen within the category of hater History as a segment of history under the umbrella of environmental history. It serves to understand the role between humans and their environment and vice versa. A sentiment that was lamented as a shortcoming yet addressed in ensuing decades with growing historical awareness of environmental impacts on human endeavours internationally and nationally.

Though it was found that research on irrigation and dams within Africa has been copious, South African historians have been very prolific since the 1980s with a growing focus on environmental factors impacting human behaviour. What seems to be missing perhaps is further insight into the socio-ecological relationship between people and important river systems within South Africa at large, and specifically of the historic homeland regions. Additionally, the specific perspective of Taung as part of a racially demarcated area within the apartheid state of South Africa, inclusive of a unique perspective into the dynamics of

[221] D Whelan, Water, Settlement and Food Provision in Natal Colony: The Winterton Irrigation Settlement, 1902–1904, *Historia*, 64(1), May 2019, pp. 42-64.

the Taung Dam Irrigation Scheme from the late 20th century, requires a better understanding as the Dam's history has not been documented as is intended with this study. In the next chapter, the author demarcates the study area and contextualises Taung as an area of interest.

CHAPTER 3 THE PEOPLE OF TAUNG: A SPATIAL AND HISTORICAL CONTEXT OF SETTLEMENT SINCE THE 18TH CENTURY TO THE PRESENT

3.1 Introduction

Drawing from some of the foundational, historiographical, and methodological analyses as shared in the previous chapters, this chapter engages with the historical context beyond the timeframe of the construction of the Taung Dam Irrigation Scheme in the latter part of the 20th century. For this spatial-historical chapter as context, it is important to depict the setting of Taung in its natural environment and to formulate an understanding of the people that passed through the area, especially concerning their relationship with the land and their agricultural practices. The role of the Vaal and Harts Rivers, in particular, along with other sources of water will be highlighted in a hydro-geographical context. The reason is enshrined in the need to understand how the people of the area, throughout time, have engaged with agriculture specifically with the water sources they required to sustain their agricultural livelihoods.

Contextually, Taung's existence can be traced back to the early 19th century migration years especially the Tswana peoples, further influenced by British colonial presence and practises. Much of the agricultural developments over the last two and a half centuries were influenced by the politics of the time. The methods of sustaining their livelihoods changed over time as the peoples of the Taung area were exposed to new and different forms of agricultural practices. At times, these practices were also dictated by the governing party of the time. Sketching this milieu will attempt to create a better background understanding of what led to President LM Mangope's decision to invest in an irrigation scheme after the independence of the Bophuthatswana homeland he served from 1977. A part of the chapter's aim is to build on the context that will further be explored in Chapter Four, which is to understand the incentives behind the development of the Taung Dam Irrigation Scheme of the Bophuthatswana-related years (1977-1994) as captured in Chapter Five. The historical, socio-political and socio-environmental nuances of Taung's history will be touched on as a means to explore the people who settled in

Taung and how the environment has impacted their agricultural practices (their mainstay) and their interactions with the environment itself.

3.2 Taung's spatial and environmental descriptors

Taung is a small town currently situated in the seat of the Greater Taung Local Municipality (GTLM) in the North-West Province, South Africa. Its natural local climate and weather lean towards the agricultural sector consisting of animal husbandry, but as we will see in this chapter, human intervention has greatly impacted this sector.

3.2.1 Climate, weather and water

The overall region forms part of the savannah biome, of an arid to semi-arid climate, with Taung leaning towards thorn bushveld with mostly sunny days and only spontaneous bursts of thunder- and hail showers.[1] Inclusive of the Vaalharts Irrigation Scheme (VHIS), the area in its entirety is fairly flat with 70% of it sloping by less than 1%, which likely causes runoff rates to be much slower than in mountainous regions.[2] The area is ideal for grazing animals with Kalahari thornveld, shrub bushveld, acacia trees, and vaalbos (the latter two especially prevalent in the lower parts of the region), along with sweetgrass and weeping lovegrass (*eragrostis rigitor*) in the eastern regions.[3] Sour and hardy grasses become prevalent where there is overgrazing. The mountainous areas are more prevalent to 'steekgras' (*aristiafa congesta*), red grass (*medica triandra*) and bushes such as 'swarthaak' (*acacia detinens*) and 'withaak' (*acacia spirocarpioides*). Frost is not uncommon in the area, Du Toit noting up to 150 potential days for frost annually between May and October. Temperatures in the cold winter seasons range between 0°C to 18.7°C. In summer months, cloud cover is said to help regulate temperatures, causing temperatures to reach about 32°C, but temperatures of 45°C have been recorded in dry spells.[4] In the 1970s average rainfall measured up to eight rainy days per month during summer months and one in winter months.[5] Taung currently receives an average of 318-

---

[1] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 71-72.
[2] PMJ Verwey, The Influence of The Irrigation on Groundwater at The Vaalharts Irrigation Scheme, (MA, University of the Free State (UFS), 2009), p. 19.
[3] PL Breutz, *The Tribes of The Districts of Taung and Herbert*, (Government Printer: Pretoria, 1968), pp. 68-69.
[4] TH Kabanda, Land Use/Cover Changes and Vulnerability to Flooding in The Harts Catchment, South Africa (MA, NWU, 2012), pp. 5, 7.
[5] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 71-73.

mm per year, but in the mid-1980s (directly before severe droughts were recorded for 1985-1986)[6] average annual rainfall ranged between 425 and 475 mm.[7] Additionally, parts of the area (especially towards the west) are unsuitable for dryland crop production. This is largely due to high evaporation rates of approximately 2000 mm/a (measured at dam sites),[8] far exceeding the annual precipitation rate of approximately 439 mm/a causing a low abundance of surface water.[9] This shortage is, however, substituted with a high reliance on underground water, with boreholes being a prominent feature throughout the region's 20th -century history.[10] Despite the low rainfall and the prevalence of animal husbandry, the soil structure in the area (especially towards the centre and east of Taung) does hold great potential for crop production, with nutrient-rich soil.[11] Certain parts, however, are prevalent in water-logging (a condition that arises when too much water accumulates on the ground and sogs it since the soil becomes too dense, preventing the water from filtering into the ground). This results in the drowning of plants not suitable for such conditions and an increase in the salinity levels of the soil.[12] Due to the relief of the area and its frequent dry spells, it is also subject to severe floods from time to time, such as those experienced in 1988, 2006, 2021, and again in 2022.[13]

---

[6] Mahikeng Provincial Archive (MPA), Republic of Bophuthatswana, Office of the President, Agenda and minutes, drought relief, 27 March 1985 to 1 August 1985, pp. 19-20.

[7] MPA, Republic of Bophuthatswana, Office of the President, Agenda and minutes, drought relief, 27 March 1985-1 August 1985, p. 4.

[8] F Otieno, O Olufayo, & G Ochieng, Sand Water Storage: Unconventional Methods to Freshwater Augmentation in Isolated Rural Communities of South Africa, *Scientific Research and Essays,* 6, 2011, p. 1888, Doi: 10.5897/SRE10.461.

[9] South African Weather Service, *Annual State of the Climate of South Africa 2021,* WCS-CLS-ASC-2021 (Pretoria: South Africa, 2022), [online source, accessed: 30 September 2023, https://www.weathersa.co.za/Documents/Corporate/Annual%20State%20of%20the%20Climate%202021_04042022114230.pdf], p. 6.

[10] See for example the various requests for boreholes throughout the region, especially for the additional supply in villages and towns, *in* NASA/ BAO/ 10942, Ref. H67/1665/3, Boorgate: Baviaanskloof - Taung; NASA/ BAO/ 10942, Ref. H67/1665/8, Boorgate: Dikhuting - Taung; NASA/ BAO/ 10942, Ref. H67/1665/11, Boorgate: Dryharts - Taung; NASA/ BAO/ 10942, Ref. H67/1665/14, Boorgate: Kolong - Taung; NASA/ BAO/ 10942, Ref. H67/1665/18, Boorgate: Lower Mayakgora - Taung; NASA/ BAO/ 10942, Ref. H67/1665/19, Boorgate: Magogong – Taung.

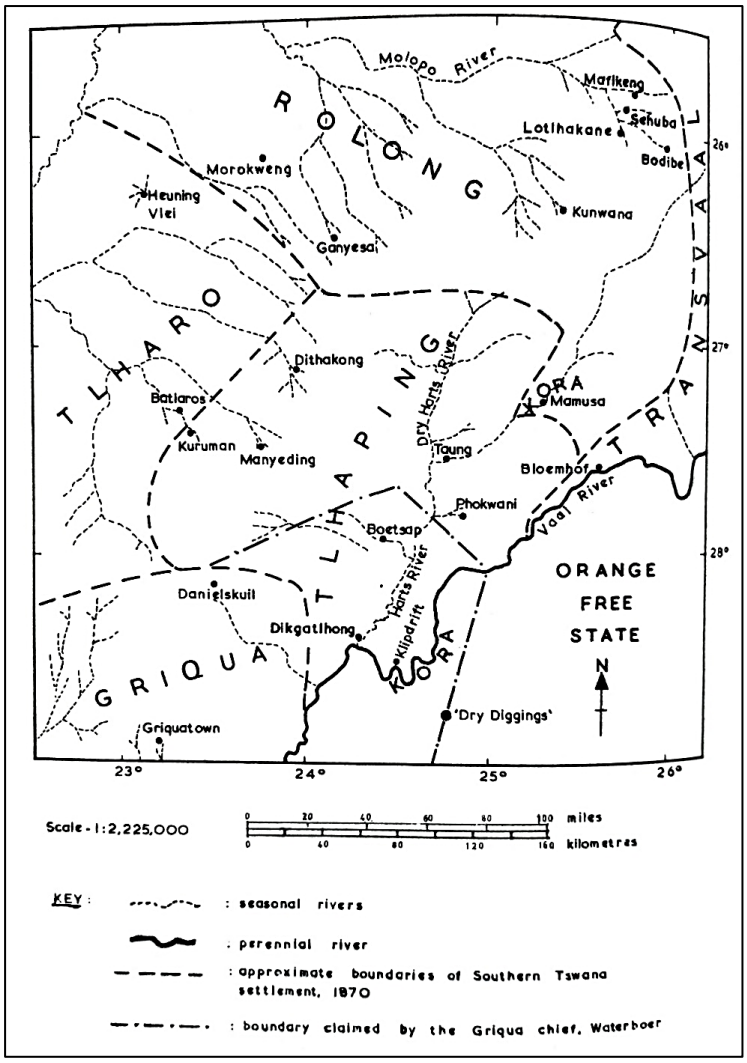
[11] JE Kokome, Evaluation of Irrigation … (MA, Central University of Technology, 2004), p. 14.

[12] N Mente, Factors Affecting Irrigation Decision-Making: The Case of Taung Irrigation Scheme in North West Province of South Africa, (MA, University of Pretoria (UP), 2021), p. 72.

[13] MPA, File 9/6/3 (23), Vol 8, Agenda and Minutes: Drought Relief, 4 July 1988 to 27 February 1989, pp. 129-133; R Makhambeni, North West Provincial Legislature concludes visit to Taung flood Villages, North West Provincial Legislature, 9 April 2006, [online source, accessed: 30 September 2024, https://www.gov.za/af/news/north-west-provincial-legislature-concludes-visit-taung-flood-villages-09-apr-2006]; The Citizen Reporter, 2021, North West Motorists Urged to Avoid N18 in Taung Due to Flooding, *The Citizen* [Online source, Accessed, 30 September 2024, https://www.citizen.co.za/news/south-africa/weather/north-west-motorists-urged-to-avoid-n18-in-

3.2.2 The surrounding river systems

The Harts River, also locally referred to as the Kolong River, where the Taung Dam is built, is 320 km long and is a tributary of the Vaal River which, in turn, is a tributary of the much larger Orange River. The river system forms part of the Lower Vaal River Catchment Management Area and flows through mostly flat lands contributing to its slow flow, in a largely south-westerly direction.[14] The confluence of the Vaal and Harts Rivers marks the area of an ancient glacial valley (the Vaalharts Valley).



Map 3-1: The surrounding rivers in the Batlhaping and Griqua settlements as illustrated by Shillington

The intermittent Dry-Harts River has its origin in the Vryburg area and joins the Harts River near Taung. The Harts River is further demarcated into two sections, namely the Little Harts River from the Coligny region and the Greater Harts River as the main river from the Lichtenburg region (Map 3.1).[15]

Before human intervention, the water flow in the Vaal and Harts Rivers was perennial. Verwey found that the groundwater for the most part (at least 80% of it) flows in the same

---

taung-due-to-flooding/]; T Mosche, 2022, Heavy Rains in North West Damage at Least 40 Houses, [online source, accessed: 30 September 2024, https://www.sabcnews.com/sabcnews/heavy-rains-in-north-west-damage-at-least-40-houses/#:~:text=26%20April%202022%2C%2011%3A41%20%5BSAST%5D%201%20minute%20Heavy,rains%20have%20also%20severely%20damaged%20the%20local%20roads].

[14] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), pp. 4, 7.

[15] K Shillington, *The … Southern Tswana* (1985), p. 26.

direction, which is towards the river perpendicular to the land contours.[16] It is presumed that the surface water (from irrigation), flows in the same direction. Surface water supply was supplemented with the digging of wells on the borders of these rivers.[17] Further streams and rivulets in the region include the intermittent Moshaweng, Korobela, and Pudumong streams as well as the Dwars, Marokane, Phokwane, and Groot Boetsap Rivers.[18] The Harts catchment has three dams in its catchment area, namely the Wentzel (6.56 mcm, completed in 1934), Taung (61.4 mcm, completed in 1993) and Spitskop (57.9 mcm, completed in 1975 and repaired in 1989 after flood damage) dams.[19] The Wentzel Dam originally contributed towards the supply of domestic water to the town of Schweizer Reneke.[20] The Taung Dam is situated near Manthe, a region named after a creek ("*spruit*" or rivulet) that together with its two tributaries, Mabereng and Shepane, flows westwards from Tweelings Pan into the Harts River.[21] Spitskop Dam contributes to an area of intense crop agriculture as part of a large irrigation project known as the Vaalharts Irrigation Scheme (VHIS) which will be elaborated on in Chapter Four.

3.2.3 The soil structure and presence of mineral resources

The soil in the larger area (inclusive of the VHIS) is known as Kalahari Sand (meaning alluvial), with a consistency ratio of sand (75%), clay (15%), and silt (10%).[22] Fertile loam soils are found next to the riverbeds, most from dolerite and red in hue.[23] The soil layer

---

[16] PMJ Verwey, The Influence of The Irrigation … (MA, UFS, 2009), pp. 43-44.
[17] Taung Research Project, Oral Archive (OA-12), Community Group Meeting in Taung Hotel School, Interviewer: Prof ES van Eeden, 5 May 2022.
[18] ES van Eeden, A Brief Topography, Geography, Historiography, and Demography of The Taung Region From Early Times to The Early 21st Century, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 9.
[19] mcm = million cubic meters; Statistics according to the Department of Water Affairs and Sanitation, Provincial State of Dams, [online source, accessed: 7 June 2024, https://www.dws.gov.za/Hydrology/Weekly/ProvinceWeek.aspx?region=NW]; A Bailey, The Orange–Senqu River Basin Infrastructure Catalogue, ORASECOM Report 001/2013 [online source, accessed: 7 June 2024, https://wis.orasecom.org/content/study/UNDP-GEF/general/Documents/Techincal%20Reports/TR21_InfrastructureCatalogue_lowres_Dec2013.pdf]; L van Vuuren, *In the Footsteps of Giants …* (2012), p. 230.
[20] Orange-Senqu River Commission (ORASECOM), *Wentzel Dam*, The Orange–Senqu River Basin Infrastructure Catalogue, ORASECOM Report 001/2013, [online source, accessed: 13 January 2023, https://wis.orasecom.org/content/study/UNDP-GEF/InfrastructureCatalogue/Documents/Reservoirs/Wentzel%20Dam.pdf].
[21] PL Breutz, The Tribes of The Districts of Taung … (1968), pp.178-179.
[22] PMJ Verwey, The Influence of The Irrigation … (MA, UFS, 2009), p. 24
[23] JPH Acocks, *Veld Types of South Africa,* (2nd Ed.), (Botanical Research Institute: Pretoria, 1975), pp. 41-42; K Shillington, *The … Southern Tswana* (1985), pp. 6-7.

in this area is more than three meters deep, but underlying the red are Dwyka shale, tillite, calcrete and Ventersdorp lava with areas of impermeable calcrete.[24] The dolomitic nature of large parts of the region adds to the area's good supply of groundwater, yet poses the risk of sinkholes where too much water percolates through the ground.[25] This may negatively impact future commercial agricultural endeavours. Apart from the Transvaal and Swaziland systems, the underlying Ventersdorp system is what gives the area rocky features with older granite underlying large parts of the Taung district. Breutz also mentions soils deriving from quartzite which are basaltic.[26] Towards the east, limestone is more prevalent with the western districts of Manthe being rockier and more suitable for bush and hardy grasses. The soil towards the west is, however, closer to that of bedrock and therefore also more prone to wind erosion and unsuitable for crop production.[27] It is also in these areas (like Buxton) that the Taung Skull was found.[28] Much of the area's Quaternary-aged Aeolian sand is laid down through wind activity.[29] The latter area is also more suitable for grazing animals like sheep and goats. According to statistics from the Department of Water Affairs, the soil structure of the areas near the Molopo River (just north of Taung) is characterised by sandy soils (Kalahari sands) with a large potential for groundwater.[30] In the area stretching from Taung towards Jan Kempdorp the soil structure forms part of the Pokwane Formation of the Hartswater group. The soil here mainly consists of porphyrite lava, volcanic tufa, tuffaceous sediments (Wonder Stone) and

---

[24] PMJ Verwey, The Influence of The Irrigation … (MA, UFS, 2009), pp. 15-16, 23-24.

[25] Office of the Premier, Spatial Development Framework of 2016, (Republic of South Africa, North West Provincial Government, 2017), [online source, accessed: 30 September 2024, https://code4sa-gazettes.s3.amazonaws.com/archive/ZA-NW/2017/provincial-gazette-ZA-NW-vol-258-no-7723-dated-2017-01-12.pdf]; pp. 47-49; KW Butzer, Archaeology and Quaternary Environment in The Interior of Southern Africa *in* RG Klein (ed.), *Southern African Prehistory and Paleoenvironments* (AA Balkema: Rotterdam, 1984), pp. 18-20; FC Truter, & CA Strauss, The Pre-Transvaal Rocks at Taungs, Cape Province, *Geological Society of South Africa*, 44, 1941, pp. 161-166.

[26] PL Breutz, The Tribes of The Districts of Taung … (1968), p. 68.

[27] TH Kabanda, Land Use/Cover Changes and Vulnerability … (MA, NWU, 2012), pp. 56-57.

[28] BF Kuhn, AI Herries, GJ Price, SE Baker, P Hopley, C Menter, & MV Caruana, Renewed Investigations at Taung: 90 Years After The Discovery of Australopithecus Africanus, *Palaeontologia Africana*, 51, 2017, pp. 10-11.

[29] JF Durand, Proposed Electrification Project Within Taung Skull Buffer Zone in Buxton (Norlim), North West Province, Palaeontological Impact Assessment, (Unpublished report for Integrated Specialist Services (Pty) Ltd), 2017, [online source, accessed: 30 September 2024, https://sahris.sahra.org.za/sites/default/files/heritagereports/Taung-Report.pdf], pp. 9-10.

[30] Department of Water Affairs and Forestry (DWAF), South Africa, *Lower Vaal Water Management Area: Internal Strategic Perspective*, DWAF Report No P WMA 10/000/00/0304, 2004, [online source, accessed: 4 October 2023, https://www.dws.gov.za/Documents/Other/WMA/10/LowerVaalISPOct04full.pdf], p. 2-4.

chert.[31] The increase of calcareous tufa is furthered by the dry spells in the area intermittently disrupted by short rainy seasons that allow for the accumulation of calcium carbonate in the dolomitic rocks.[32] Other geomorphological features include Gold Estate Reef quartzites, Pniel sediments, Mica-bearing shales, tuffaceous quartzites and gravels.[33] Closer towards the southern regions of the Taung area and Harts River more alluvial diamond-bearing soils were noted by Breutz, though under thick layers of loam.[34]

3.3 Changing identities: Taung and its people

The permanent settlement of Taung dates back around two hundred years, with a branch of the Batlhaping people permanently established in the general region in the early 19th century.[35] In the following section, a socio-spatial overview is given of the area as we walk through time with descriptions of the area and its people by those who documented their experiences in the Taung area.

3.3.1 Early settlements as understood from the experiences of missionaries and early European explorers: 1300s to mid-1800s

The origins of the Tswana populations can be traced back to a series of great migrations from the East African Great Lakes from as far back as the 1300s and 1400s.[36] These populations are often referred to as the "Southern Tswana" due to their southward migration which ultimately led to the settlement of various wards and chieftaincies in what is today referred to as the Kuruman region.[37] Breutz mentions settlements of Tlhaping as far west as the Ghaapse mountains but fails to mention at which point in time they settled

---

[31] PMJ Verwey, The Influence of The Irrigation … (MA, UFS, 2009), pp. 15-16.
[32] RB Young, The Calcareous Tufa Deposits of The Campbell Rand, From Boetsap to Taungs Native Reserve, *South African Journal of Geology*, 28(1), 1925, p. 57.
[33] OR van Eeden, Die Korrelasie Van Sekere Voor-Transvaal-Gesteentes in Die Distrik Schweizer Reneke, *South African Journal of Geology*, 49(1), 1946, pp. 278, 281.
[34] PL Breutz, *The Tribes of The Districts of Taung …* (1968), pp. 68-70; p. 254; J Cowley, & A Lemon, Bophuthatswana: Dependent Development in a Black 'Homeland', *Geography*, 71(3), Jun. 1986, p. 252.
[35] WF Lye and C Murray, *Transformations on The Highveld …* (1980), p. 29; I Schapera, *The Tswana* (1984), pp. 9-10.
[36] P Magubane, *Vanishing Cultures of South Africa: Changing Customs in a Changing World* (Rizzoli: New York, 1998), p. 116; K Shillington, *The History of Africa* (3rd ed), (Parlgrave MacMillan: Hampshire, 2012), pp. 225-226.
[37] K Shillington, *The Colonisation of the Southern Tswana 1870-1900* (Raven Press, Braamfontein: 1985), p. 3.

there.[38] Though he adds that the Tswana (not just the Batlhaping) were of the custom to settle in close-knit units, Morton adds that pre-18th century communities tended to sometimes settle in temporary villages with semi-nomadic lifestyles being prevalent.[39] As such settlements were smaller and built to be easily reconstructed. Van Eeden, citing among others, Language, marks the Tlhaping presence in the area from the Late Iron Age/ Late Farmer Period in the pre-17th century after they broke away from the Rolong with the death of Chief Tau in 1760.[40] The name Tau refers to lions, which were present in the Taung area up to 1875.[41] The Rolong, one of three founding lineages of the Tswana settled with their people in stone-walled circular settlements in Taung and their capital, Dithakong, during the 17th and 18th centuries.[42] Maylam, however, points out that by no means did this symbolise that the large area of Tswana was a unit. An era of conflict from the 18th to the 19th century was prevalent among the Tswana in this area, believed to have been sparked by the need for more land and resources. It was even noted that the name "Tlhaping" mockingly referred to as a fish (the tlhapi) by the Rolong, since, during a phase of great hunger the Batlhaping had to rely on the Harts and Vaal River's fish for sustenance. The practice of eating fish was heavily frowned upon in pre-colonial Tswana communities.[43] Breutz, however, disagrees with this statement as the more likely meaning of "tlhapeng" is "stone place".[44] Manson also infers that the Tlhaping may have been gifted in the art of stone masonry as they settled at the end of the 19th century in Dithakong and fortified themselves there in stone structures.[45] As the Batlhaping have no problem with the name according to sources consulted, the latter might very well be true

---

[38] PL Breutz, The Tribes of The Districts of Taung … (1968), p. 69.

[39] F Morton, Settlements, Landscapes and Identities Among The Tswana of The Western Transvaal and Eastern Kalahari Before 1820, *South African Archaeological Bulletin*, 68(197), 2013, pp. 15, & 20; PL Breutz, *The Tribes of The Districts of Taung …* (1968), p. 68-70.

[40] Van Eeden concisely captures the argument which Language elaborates on. ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in history …* (2024), pp. 10-11; FJ Language, Herkoms en Geskiedenis van Die Tlhaping, *African Studies*, 1(2), 1942, pp. 115-133.

[41] PL Breutz, The Tribes of The Districts of Taung … (1968), p. 17.

[42] P Maylam, A History of The African people of South Africa: From The Early Iron Age to The 1970s, (D. Phillip: Cape Town, 1986), pp. 45-46.

[43] A Manson, The Batlhaping of The Taung District: From Independence to Colonisation ca 1750-1895: Strangers, Missionaries, Guns, Gems and Enterprise, *in* ES Van Eeden, & A Manson (eds.), *Taung in history: Moments, Memories & Human Encounters* (Ivyline: Vanderbijlpark, 2024), p. 64.

[44] PL Breutz, *The Tribes of The Districts of Taung …* (1968), pp. 12, & 31.

[45] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), pp. 65-66.

since the area is indeed littered with many stony outcrops.[46] The Batlhaping Ba Ga Maidi further splintered from this group (the Rolong) during this time (ca.1792-1869) and settled at Dikgatlhong.[47] Later research mentions the Ba Ga Maidi first moving to Taba 'Nchu, before finally returning to Manthe some 20 km south-east of Taung. They travelled to Diolwaneng (currently in the Bloemhof area), then to Dikopaneng and Magoditsaneng (currently Christiana) during Chief Mahure's time (1792-1869).[48] Moffat's 1836 report further mentions a group called "Ba mairis" which likely refers to the Ba Ga Maidis, who were included among those who settled in Taung at Manthe alongside the Batlhaping Ba Ga Phuduhucwana.[49] Contrary to the Rolong's relations with other groups, the Tlhaping, as the Tlharo (both groups were once part of the Rolong) were more inclined towards trade and cooperation (often sealed through marriage) between Kora groups towards the west.[50] Manson notes that the likely reason for the alliances between the Tlhaping, Kora and Tlharo was to strengthen themselves against the Rolong who were still occupying areas next to the Molopo River.[51] The Rolong's southward migration to Thaba 'Nchu was said to have been brought on by the Zulu expansion and subsequent Difaqane Wars during the early 1800s.[52] During this period the Tlharo and Tlhaping, were at first protected from the Ndebele threat with the help of the Griqua upon the request of missionary Robert Moffat.[53] After increased economic pressures by a decline in the trading of Tswana goods (cattle, *sibilo* {a local ore} and beads) opportunistic raids launched by the Kora and "bergenaar" Griqua further dismantled the Batlhaping's hold over the Kuruman regions between 1824 and 1828.[54] It was around this time in 1838 that the Tlhaping split into two groups after the death of Chief Mothibi. One group, the largest,

---

[46] A tlhapi fish is painted on the face of the Ba Ga Phuduhuchwana tribal office wall. The history linked to this is therefore not too clear. *See* FJ Language, Herkoms en Geskiedenis van Die Tlhaping, *African Studies*, 1(2), 1942, pp. 115, & 123; ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), pp. 13-14.

[47] FJ Language, Herkoms en Geskiedenis van Die Tlhaping, *African Studies*, 1(2), 1942, pp. 120-122.

[48] ES van Eeden, A brief topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 19.

[49] R Moffat, Missionary Labours and Scenes in Southern Africa (John Snow: London, 1846), p. 591.

[50] P Maylam, A History of The African People of South Africa … (1986), p. 46.

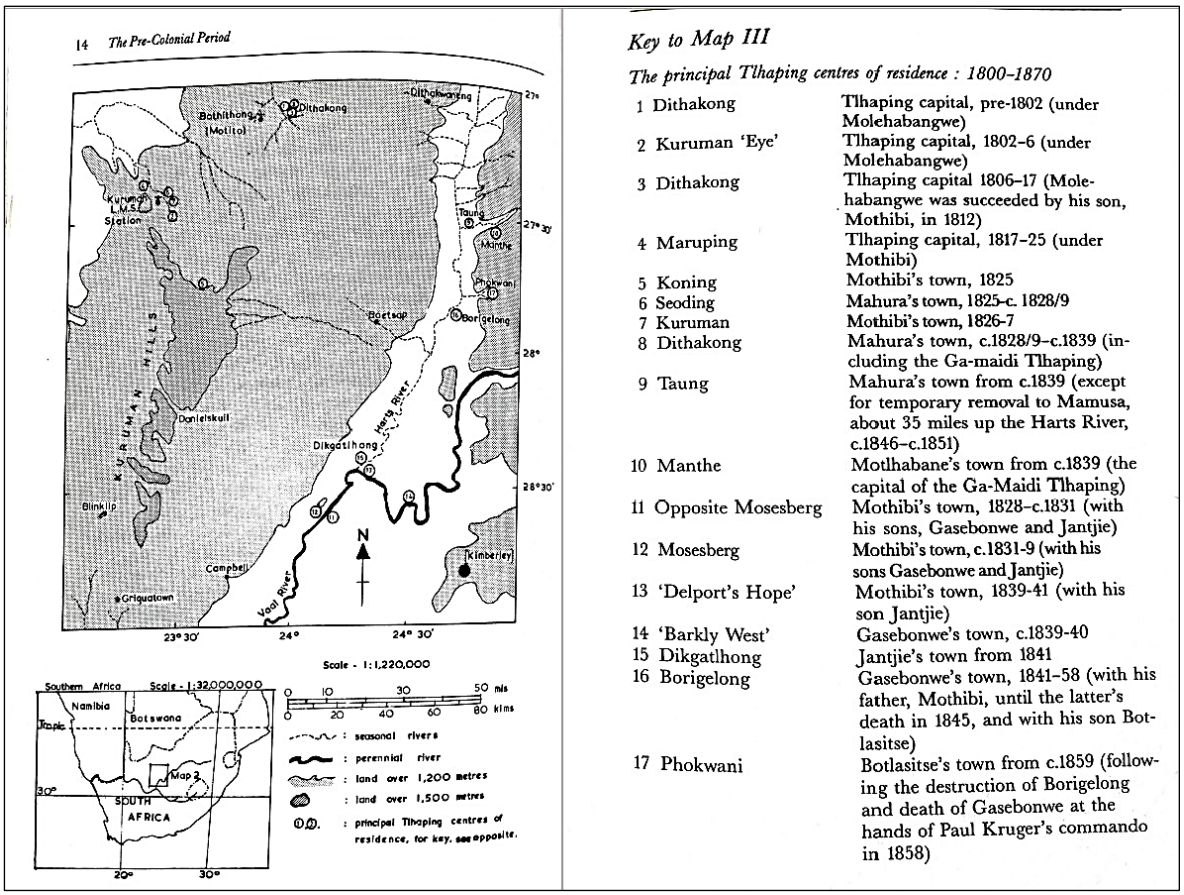
[51] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 65.

[52] K Shillington, *The … Southern Tswana* (1985), pp. 12-16.

[53] JS Moffat, *The Lives of Robert & Mary Moffat* (12th ed.), (T Fisher Unwin: London, c.1890), pp. 107-118.

[54] MH Wilson, & LM Thompson, *The Oxford History of South Africa: South Africa to 1870*, (Vol. 1), (Oxford University Press: New York, 1969), pp. 396-397; JS Moffat, *The Lives of Robert & Mary Moffat* (12th ed.), (ca.1890), pp. 82-87.

to be ruled by Mothibi's brother, Mahura and two other smaller groups to the south were ruled by Mothibi's sons, Gasebone and Jantje.[55] By the 1850s, Shillington notes that the majority of 15,000 Tlhaping had settled in Taung, with only a few thousand situated lower in the Harts Valley at Borigelong and Dikgatlhong respectively.[56]



Key to Map III

The principal Tlhaping centres of residence : 1800–1870

1 Dithakong	Tlhaping capital, pre-1802 (under Molehabangwe)
2 Kuruman 'Eye'	Tlhaping capital, 1802–6 (under Molehabangwe)
3 Dithakong	Tlhaping capital 1806–17 (Molehabangwe was succeeded by his son, Mothibi, in 1812)
4 Maruping	Tlhaping capital, 1817–25 (under Mothibi)
5 Koning	Mothibi's town, 1825
6 Seoding	Mahura's town, 1825–c. 1828/9
7 Kuruman	Mothibi's town, 1826–7
8 Dithakong	Mahura's town, c.1828/9–c.1839 (including the Ga-maidi Tlhaping)
9 Taung	Mahura's town from c.1839 (except for temporary removal to Mamusa, about 35 miles up the Harts River, c.1846–c.1851)
10 Manthe	Motlhabane's town from c.1839 (the capital of the Ga-Maidi Tlhaping)
11 Opposite Mosesberg	Mothibi's town, 1828–c.1831 (with his sons, Gasebonwe and Jantjie)
12 Mosesberg	Mothibi's town, c.1831-9 (with his sons Gasebonwe and Jantjie)
13 'Delport's Hope'	Mothibi's town, 1839-41 (with his son Jantjie)
14 'Barkly West'	Gasebonwe's town, c.1839-40
15 Dikgatlhong	Jantjie's town from 1841
16 Borigelong	Gasebonwe's town, 1841–58 (with his father, Mothibi, until the latter's death in 1845, and with his son Botlasitse)
17 Phokwani	Botlasitse's town from c.1859 (following the destruction of Borigelong and death of Gasebonwe at the hands of Paul Kruger's commando in 1858)

Map 3-2: Tlhaping centres of residence: 1800-1870 as viewed by Shillington[57]

Noting the great shift from pre-19th century village patterns, according to Magubane[58] the Tswana tended to organise themselves in larger village units in the 19th century to strengthen their defences against potential threats and invaders. Family structures were close-knit, with clan relationships playing a big role in social customs. The Tswana had an extensive and intricate social structure, with the chief at the head of a district. The family was the most basic social unit, with age being an important aspect in determining

[55] P Maylam, A History of The African People of South Africa … (1986), p. 120.
[56] K Shillington, Irrigation, Agriculture and The State … *In* W Beinart, P Delius, & S Trapido (eds.), *Putting a Plough to The Ground …* (1986), p. 314.
[57] K Shillington, *The … Southern Tswana* (1985), pp. 12-13, & 14 for the map.
[58] P Magubane, *Vanishing Cultures …* (1998), pp. 119-121.

rank in social authority. Within each district, there were smaller villages or wards, each with its own headman. The chief was the headman of his ward and chief of all wards within his district. The headmen's duties included solving small disputes within their wards. For serious matters, a *kgotla* (a tribal council meeting) was called with the *Kgosi* (chief) and is usually located in the middle of the *kgoro* (*kgosi* capital). The tribal council acted as the legislative, executive, and judicial authority and consisted of the chief, his advisors (often consisting of close senior royal family members), headmen and selected close relatives.[59] *Kgoro*'s were established in concentric patterns: *kgotla*, *makgotla* (a vigilante court), the larger town, agricultural area for planting crops, grazing fields, and furthest the hunting grounds.[60]

In African tradition land belonged to the chief who distributed it among those who asked, based on their need.[61] This tradition also featured in the Taung region where different offshoots of the Tlhaping gradually settled especially towards the mid-19th century. Land was a grant that usually passed through generations but could be withdrawn by the *Kgosi* at any time. The grazing pastures, like water, were however considered communal.[62] The gradual settlement of Tlhaping at Taung at this time, especially after the *Difaqane* and further pressure of raids by the Kora and Griqua, was also accompanied by an increased presence of Europeans. This includes the British, missionaries, mostly Dutch Trekboers, traders and settlers alike.[63]

3.3.2 Taung during British occupation: 1801-1961

Van Eeden notes that most of the first European travellers (between 1801 and 1820) had economic motives to expand trade routes.[64] It was however in the spirit of securing some military upper hand that Chief Mothibi met with botanist and traveller William Burchell in

---

[59] L Thompson, *A History of South Africa* (2014), pp. 23-26; JW Hudson, Responses to Climate … (MA, Colorado State University, 2002), pp. 40-41.
[60] GY Okihiro, Precolonial Economic Change …, *The International Journal of African Historical Studies*, 17(1), 1984, pp. 64-65.
[61] L Thompson, *A History of South Africa* (2014) pp. 71.
[62] GY Okihiro, Precolonial Economic Change …, *The International Journal of African Historical Studies*, 17(1), 1984, p. 66.
[63] P Maylam, A History of the African People of South Africa … (1986), p. 119.
[64] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 28; GY Okihiro, Precolonial Economic Change …, *The International Journal of African Historical Studies*, 17(1), 1984, pp. 62-63.

1810 and once more in 1812. He purchased his first gun from Burchell after some negotiations and endeavoured to build his relationship with missionaries to acquire more.[65] Missionaries were also some of the first Europeans with which the Tlhaping had contact. They had a marked impact on the Tlhaping, most notably spiritual, economic, and military involvement. With the final British occupation of the Cape of Good Hope region in 1806, some of the first missions in Bechuanaland were established in 1817 by Mrr R Hamilton and J Read.[66] In 1820, with an influx of British settlers into, especially the Eastern Cape, the first missionaries were joined by Mr J Campbell and Mr R Moffat. The latter established a church in Taung in 1821[67] and saw to the translation of the Bible into Setswana in the proceeding years.[68] His gardening skills enabled him to teach the Batswana some European methods of agriculture in Kuruman.[69] Though several other missionaries joined them during the following decades, Mr W Ross, often cited as having joined Dr D Livingstone in his travels, also settled in Taung for a while.[70] These missionaries were only able to settle among the Batlhaping and other Batswana tribes with the approval of the chief. The acceptance of their presence was, however, more firmly established after the mission's involvement in assisting the Batlhaping when they were attacked by the "Mantatees" in 1823-1824. Whilst Moffat and his fellow missionary, Melville, were saving women from the attacking forces, Moffat's call for aid from Griqua riders (armed with guns) helped secure the area for the time being.[71]

Though missionary contact with the Tlhaping dates back to 1801,[72] most of the initial contact by the mid-19th century between Batswana and Europeans (who Thompson refers to as "Whites", but distinguishes between the British government, British settlers

---

[65] WJ Burchell, *Travels in The Interior of Southern Africa*, Vol 2 (Longman: London, 1822), pp. 348-369, & 417-419.
[66] J MacKenzie, *The London Missionary Society in South Africa: A Retrospective Sketch* (London Missionary Society: London, 1888), pp. 14-16 [online source, accessed: 1 November 2018, https://ia802802.us.archive.org/3/items/londonmissionary00mack/londonmissionary00mack.pdf].
[67] EC Coetzee, The Greater Taung District Municipality's places of interest: A Bird's Eye View, *in* ES Van Eeden, & A Manson (eds.), *Taung in History: Moments, Memories & Human Encounters* (Ivyline: Vanderbijlpark, 2024), p. 198.
[68] M Madise, Christian Emergence Among The Batlhaping Ba Ga Phuduhucwana Tribe in Taung: The London Missionary Society, *Studia Historiae Ecclesiasticae*, 36, 2010, pp. 41-51.
[69] PHR Snyman, Die Rol Van Die Sendelinge, Die Owerheid en Ekonomiese Faktore in Die Onstaan van Kuruman, 1886-1913, *Contree*, 22, 1984, p. 8.
[70] JS Moffat, *The Lives of Robert & Mary Moffat*, (12th ed.), (ca.1885), pp. 156-157, & 170.
[71] JS Moffat, *The Lives of Robert & Mary Moffat* (12th ed.), (ca.1890), pp. 74-79.
[72] I Schapera, *The Tswana*, (1984), pp. 15-16.

and Afrikaners (Dutch Trekboers)), apart from missionaries, were for purposes of trade.[73] Some of this history has been recorded by missionaries and explorers passing through the region.[74] These Europeans were welcomed as the Tlhaping had strong trading ties with surrounding groups such as the Korana before their fallout after the *Difaqane* (ca. 1810s to 1840s) and thus also took up trading with foreign travellers when they first made contact.[75] With the northern frontier, seen as part of the "European" expansion, reaching the Tlhaping of Taung and Kuruman from other locales such as Griqua Town, the area was seen as a gateway to the interior of Africa for missionaries, traders and colonisers alike.[76] The Harts Valley's potential as arable land was, however, not lost on the colonisers and was an added incentive for those seeking to settle permanently.[77] Some of the travellers included Trekboers who were often granted permission by the chief to practice agriculture on the land. Though the presence of the Dutch Trekboers at first tended to be in the interest of the Tlhaping as they aided in keeping Ndebele forces at bay,[78] in time these travellers became settlers and their claims to land increased, and with it, tensions rose.[79] Some of the tensions and complex to-and-fro relationships between the Batswana and Boers are touched upon by A Manson as he reflects on the impact of an increased number of Boer settlers on (in this case) the Kgosi Tawana of the Ratshidi-Barolong area. This included Batlhaping territories after the 1870s when diamond claims started circulating.[80] However, of the tension between European presence and the Tswana was the result of different customs relating to for example property rights and access to resources such as water.[81]

Colonial expansion from the 1850s brought much tension as Dutch (Trekboer) settlers became more demanding. This coincided at first with the British relinquishing their political

---

[73] L Thompson, *A History of South Africa*, (4th ed.), (2014), pp. 70-73.
[74] JS Moffat, *The Lives of Robert & Mary Moffat* (12th ed.), (c.1890), pp. 28-29.
[75] P Maylam, A History of The African People of South Africa … (1986), pp. 45-46.
[76] WM Macmillan, Bantu, Boer, and Briton: The Making of The South African Native Problem (Faber & Gwyer: London, 1929), pp. 37-39.; P Maylam, A history of the African people of South Africa … (1986), p. 122.
[77] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in history …* (2024), p. 76.
[78] J Grobler, Staatsvorming en Stryd, 1850-1900, *in* F Pretorius (ed.), *Geskiedenis van Suid-Afrika: Van Voortye tot Vandag* (Tafelberg: Kaapstad, 2012), p. 163.
[79] P Maylam, *A History of The African People of South Africa …* (1986), pp. 119-120.
[80] A Manson, *The Valiant Englishman* (Unisa Press: Pretoria, 2021), pp. 5-8.
[81] I Schapera, *The Tswana*, (1984), p. 16.

hold over the Trekboers, who subsequently vied to settle in their own right.[82] The Tlhaping in this time (from the mid-1850s) increasingly tended to liaise more with the Cape British Administration than with the missionaries.[83] The period between 1870 and 1910 became an era of European conquest with the formation of two British Colonies and two Boer Republics, with the Batlhaping trying their best to remain neutral.[84] Manson states that the likely reason for doing so was so that Mankuroane (who was recognised by the British as the Chief at that stage) remained so after the British skirmishes with Jantje Mothibi.[85] The Zuid-Afrikaansche Republiek/South African Republic (or ZAR) was mostly at loggerheads with the British Crown over the ownership of the mineral-rich lands of the Tswana, especially the Batlhaping areas.[86] Manson's detailed account of the presence of Christopher Bethell, a British colonial officer, from 1878 to his death in 1884 in South Africa, captures how the Tswana, and more specifically the Barolong (and to a degree the Batlhaping), were 'moved', so to speak, by the impending presence of both British and Boer (and specifically 'freebooter' interests).[87] The latter's interest saw the establishment of the Republic of Stellaland in the Vryburg region just north of Taung, causing increasing pressure for the British Crown to act lest they lose control of the area and access to increasingly valuable resources.[88] Then the Tlhaping population stood at about 22,000 (of which roughly 15,000 were Ba Ga Phuduhucwana and 7,000 Ba Ga Maidi) in an area of approximately 200,000 morgen (171.34 ha).[89] The two groups settled apart with the former settling in Taung and the latter in Manthe (some 20 km south-east of Taung).[90] They were separated by the Harts River which flooded periodically. The Ba Ga Maidi's cattle outposts were said to be especially under threat with the proximity of

---

[82] L Thompson, *A History of South Africa*, (4th ed.), (2014), pp. 100-101.
[83] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 17.
[84] L Thompson, *A History of South Africa*, (4th ed.), (2014), pp. 110-115.
[85] The dynamics of the recognition of chiefs are more nuanced and captured by Shillington too, as referenced by Manson *in* A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 74.
[86] J Grobler, Staatsvorming en Stryd, 1850-1900, *in* F Pretorius (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 163, 154.
[87] A Manson, *The Valiant Englishman* (2021), pp. 5-16.
[88] K Shillington, *History of Africa*, 4th ed., (Red Globe Press: London, 2019), pp. 325-365.
[89] FJ Language, Herkoms en Geskiedenis van Die Tlhaping, *African Studies*, 1(2), 1942, pp. 115-133. Shillington reports on numbers drastically different though. According to him a commissioner's report the Ba Ga Maidi under Kgosi Kgantlapane by 1886 amounted 700 to 800 persons. *See* K Shillington, *The … Southern Tswana* (1985), p. 200.
[90] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 78.

Kgosi Mankuroane's Ba Ga Phuduhucwana on one side and the ever-impeding Transvaal Boers on the other.[91] Apart from increased tension surrounding resources in agricultural land, timber, and water, disputes over boundaries also contributed to the Bechuanaland War of 1881-1884.[92] Due to growing pressures for land and animal husbandry, Manson notes the migratory years of the Ba Ga Maidi, who, when they finally resettled, had to keep dividing their lands into smaller and smaller units to accommodate their growing population towards the beginning of the 1900s.[93] In this time the hostility between the Ba Ga Maidi and Ba Ga Phuduhucwana escalated to open conflict, a situation that Manson purports was an attempt by the former to establish their independence from Mankuroane's Phuduhucwana and even possibly acquire autonomy.[94] Though the Tlhaping rose against the British twice, once in 1878 and again in 1896, the British triumphed even before the second rising as they officially commanded the area after 1885. The British proclaimed the area under the British Bechuanaland Protectorate in 1895 as a means to strengthen their stance against the ZAR.[95] This was also a means to lay claim to the diamond-rich fields being exploited by British-affiliated companies such as De Beers.[96] This was when Bechuanaland was split in two with the establishment of a border at the Molopo River. The area south of the Molopo would be called the Crown Colony of Bechuanaland.[97] Situated within the southern parts of this area was Taung (then sometimes locally referred to as Phokwani/ Phokwane).[98] It was home to the Batlhaping of the Batswana then under the rule of the British Crown.[99] Increased land pressures, especially after 1890 when the area was further appropriated for the development of a railway line stretching from Kimberley to Mafikeng, caused some

---

[91] K Shillington, *The … Southern Tswana* (1985), p. 200.
[92] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 21; FJ Language, Herkoms en Geskiedenis van Die Tlhaping, *African Studies*, 1(2), 1942, p. 128.
[93] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 79.
[94] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 79.
[95] BA Pauw, Social and Religious Institutions of The Tlhaping of The Taung Reserve, (PhD, University of Cape Town (UCT), 1955), p.8; J Grobler, Staatsvorming en Stryd, 1850-1900, *in* F Pretorius (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 163-164; I Schapera, *The Tswana* (1984), p. 16.
[96] CH Feinstein, *An Economic History of South Africa: Conquest, Discrimination and Development* (Cambridge University Press: New York, 2005), p. 99.
[97] FJ Language, Herkoms en Geskiedenis van Die Tlhaping, *African Studies*, 1(2), 1942, pp. 129-130.
[98] PL Breutz, *The Tribes of The Districts of Taung* … (1968), p. 20.
[99] I Schapera, *A Handbook of The Tswana law and custom: Compiled for The Bechuanaland Protectorate Administration* (International African Institute: Munster-Hamburg,1994), pp. 1-3.

Batlhaping to resettle. They moved to the southern part of Taung, called Mayeng, and Witrand.[100] Additionally, in the 1890s *Kgosi* Molala also managed to purchase three farms outside the Taung Native Reserve (TNR) – named Highlands, Modimo, and Pendomer. Though it often led to increased competition between the Batlhaping and European farmers, this enabled some of his people to settle on what would be classified as white-owned land that bordered the reserve.[101] The ZAR at this stage was, however, not deterred by the British annexation of the area and occupied Taung as late in the 19th century as 14 October 1899 as a commando under the leadership of Commandant Tollie de Beer proceeded to Veertien Strome (Fourteen Streams) where more burghers were to join them from the Free State.[102] Taung's Chief Molala chose to remain neutral during the Briton-Boer skirmishes.[103] This was likely part of the last rebellion encapsulated in the South African War dating from 1899-1902.

One of the first major incentives that greatly impacted the lives of those in Griqualand West, including the Taung region, was the mineral revolution that followed the discovery of diamonds in Kimberley after 1868.[104] The discovery of diamonds saw prospective diggers from all races and origins flocking the area surrounding Kimberley. The British interest was largely driven by mining magnate and later politician, Cecil John Rhodes' endeavours to establish a route to the north of Africa in 1884.[105] On the other hand, in later years the impact that the Boer philosopher Niklaas (Siener) van Rensburg had on the Boer interests in the area has also been mentioned. Although his vision of a diamond the size of a sheep's head being found was not specifically directed at Taung, the general area of the Western Transvaal diamond fields was indicated.[106] The interest in the area's diamond potential has hardly waned over the decades and with it, interest in ownership of the area remains. Worger too, connects the beginnings of the migrant labour system that has become prevalent throughout the last 150 years of South Africa's history, with

---

[100] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 24.
[101] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 84.
[102] JEH Grobler, *The War Reporter: Transvaal Western Border in Republican Hands,* Weekly Edition Number 2, 21 October 1899, (Johnathan Ball Publishers: Johannesburg, 2004), p. 6.
[103] JEH Grobler, *The War Reporter …*, Weekly Edition Number 3, 28 October 1899, (2004), p. 7.
[104] K Shillington, *History of Africa,* (3rd ed.), (2012), p. 328.
[105] A Manson, *The Valiant Englishman* (2021), pp. 55, 68-69, 75-76.
[106] A Snyman, *Boodskapper van God*, (10th ed.), (Vaandel Uitgewers: Ladismith, 2020), pp. 65-70.

the discovery of minerals in the 1870s.[107] According to him, Chiefs would often supply workers to diamond fields, and those Tlhaping who did not directly form part of the mining activities supplemented these communities with food and firewood.[108] This was a means to overcome the economic losses from livestock and land in the 1850s and 1860s.[109] An economic endeavour was largely possible due to the proximity of their permanently settled Batlhaping communities to these mines. The mining boom would thereafter severely impact the way of life for many within the region, especially through the trade of the residing Tlhaping and their livelihoods. For those farmers who suffered great losses, either due to warfare or natural causes, mining became an additional source of income. According to Schepers, several permanently settled in the mining sector - though some only adopted it temporarily (until such time money allowed them to return to their previous sources of income).[110] Apart from those persons flocking to the mines to work for money, weapons, and other goods as incentives, those who remained behind were impacted by the increased presence of Dutch Trekboers.[111] It is noted that due to this arrangement, the Batlhaping of Mankuroane did far better economically than other Batswana groups who were forced into smaller and smaller allocated portions of land. This was largely due to their proximity to the diamond fields, allowing for easier trade in foodstuffs and firewood.

The pressure to produce more foodstuffs and firewood likely gave rise to the beginnings of commercially minded Tlhaping farmers. It also harmed the powers of the Kgosi to allocate land freely to his subjects as done before colonial influences. It added to the degrading of the natural environment as competition with European producers and suppliers increased,[112] however, external interest found its way into Tlhaping territory to such a degree that a letter by Chief Molala in 1906 to the Prime Minister of Cape Town was received favourably. It was a plea to forcefully stop the access of miners and

---

[107] WH Worger, *South Africa's City of Diamonds: Mine Workers and Monopoly Capitalism in Kimberley, 1867-1895* (AD Donker: Yale, 1987), pp. 64-109.
[108] RV Turrell, *Capital and Labour on The Kimberley Diamond Fields, 1871-1890* (Cambridge University Press: Cambridge, 1987), pp. 19-20.
[109] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 34.
[110] JH Schepers, 'n Kultuutbeeld van die spoeldiamant-delwersgemeenskappe (PhD, Wits, 1950), pp. 14-18.
[111] K Shillington, *History of Africa* (3rd ed.), (2012), p. 329.
[112] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), pp. 75-76.

prospectors onto Tlhaping lands. In 1909 the Cape Government Notice no 396 declared that prospecting for precious stones on Reserve land was strictly forbidden,[113] a provision that stayed in place even after the formation of the Union in 1910. The impact of the mining activities on the natural environment was not small, since natural forests were depleted for firewood and supporting beams for mining activities in Kimberley.[114] Opportunists (not only the Batlhaping) also saw a need for replenishing much-needed food supplies and subsequently cleared some of the best lands for farming activities.[115] Increased pressure on land availability was inevitable, especially so for the free-roaming cattle herders of the surrounding Batlhaping.

[113] T Clynick, Chiefs, Concessionaires and Reserve Politics on The Tlaping Alluvial Diamond Diggings at Taungs, 1919-1921: A Local Perspective on Segregation and Class Interests, Conference, History Workshop, Feb 1987, pp. 13-22; ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 35.

[114] Holub notes in his travels the heavily wooded area between Fourteen Streams and *Kgosi* Mankuroane's Taung before the influx of miners. *See*, E Holub, *Seven years in South Africa: Travels, researches and hunting adventures between the diamond-fields and the Zambesi. 1872-1879*, (Translated by Ellen F Frewer), Vol 1 (Sampson Low: London, 1881), p. 205.

[115] W Visser, Die Minerale Revolusie, *in* F Pretorius (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 193-194.

Figure 3-1: A small thorn tree forest outside Jan Kempdorp – a possible representation of what the area looked like before human impact.[116]

Though 1898 saw the first forest reserve for the area proclaimed at Phokwane (Taung), it was only in 1928 that these first attempts at protecting the natural environment were legitimised within the British Bechuanaland Reserves. This was done with Proclamation No. 257 of 30.10.1928.[117] It was further extended upon in 1941 with the Forest and Veld Conservation Act 13 of that year, that specific trees were marked for protection in the area, which included Vaalbos, Camel thorn, Mimosa, Withaakdoorn, Swarthaakdoring, Wild olive, Karree bush, Witstam, Blue bush, and among other, the Elandboontjie.

After the end of the South African War in 1902, the process of peace and unification that ensued largely only incorporated the British and Boers.[118] The African populace was

[116] Source: Author, 18 April 2024.
[117] PL Breutz, The Tribes of The Districts of Taung and Herbert (1968), pp. 69-70.
[118] DM Scher, Naoorlogse Rasse-Verhouding, 1902-1948, *in* F Pretorius, (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 256-261.

mostly ignored for their part in the predated period of violence.[119] For decades thereafter the country would largely be ruled without consideration of Africans on equal grounds with the white rulers of South Africa. This is evident in the legislative governance following the formation of the Union in 1910. With the onset of 1910 and the Union of South Africa under British rule, the tribal rule was governed at least spatially, within reserves, though as noted earlier, the TNR was well established by 1885.[120] In the same year (1910), the British-appointed headman was put in charge of various managerial roles, especially in liaising with the Ba Ga Phuduhucwana *Kgosi* in the managing of local affairs.[121] A system was also introduced which ensured that Africans could not own land outside their designated reserves, and likewise, whites could not claim lands within the reserves, at least until 1955 when new legislation was promulgated. Notably, several laws were put in place to further racial segregation. In 1913, with No. 2 of the Natives Land Act of 1913 (and later with No. 13 of 1936 of the same act) legislative geographical segregation based on ethnicity was established in South Africa. This led to areas referred to as Native Reserves to which masses of indigenous Africans were designated to 15.1 million ha (or roughly 13%) of South Africa.[122] It also saw the amalgamation of Mayeng and Witrand, the two areas to which some of the Batlhaping resettled after the various boundary disputes they experienced in the late 19th to early 20th century.[123] The Batswana of South Africa comprised different self-standing tribal units and were allocated eleven fragmented units of land. The Batlhaping Ba Ga Phuduhucwana notably of Taung were located in two reserves, called the Thakwaneng and Klein Chwaing reserves.[124] Though a Magistrate's Court was already established in Taung by 1899, it would only be in 1914 that magistrates took over much of the administrative duties of the reserve.[125] At that stage, Taung was still a European enclave with roughly 50 European inhabitants and the Batlhaping of Chief

---

[119] P Warwick, *Black People and The South African War 1899–1902*, (Cambridge University Press: Cambridge, 1983), pp. 19-27.
[120] A Manson, & BK Mbenga, *Land, Chiefs, Mining: South Africa's North West Province Since 1840* (Wits University Press: Johannesburg, 2014), pp. 89, 92.
[121] ES van Eeden, A brief topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in history …* (2024), pp. 24-25.
[122] L Thompson, *A History of South Africa* (2014), pp. 163-164; JH Drummond, Rural Land Use and Agricultural Production in Dinokana Village, Bophuthatswana, G*eoJournal*, 22(3), 1990, p. 336.
[123] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 24.
[124] A Manson, & BK Mbenga, *Land, Chiefs, Mining …* (2014), p. 93.
[125] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 90.

Molala was situated closest. The 1913 Land Act, however, limited land ownership across allocated designated racial lines.

In 1923, with the Native Urban Areas Act, Africans were further prohibited from staying in urban areas,[126] further proving that the government of the time could move large swathes of people to designated areas, despite political backlash from inhabitants. To help manage these people, the British government under the Crown Colony took a step further in 1927 with the promulgation of the Native Administration Act. It allowed them to appoint their headman (*bogosana*). Taung had 13 recognised headmen spread across the smaller villages within.[127] The first half of the 20th century was marked by growing Afrikaner nationalism and a continued disregard for the plight of Africans for political recognition from British rule and the growing Afrikaner polity.[128] The Native Trust and Land Act 18 of 1936 provided for the establishment of the South African Native Trust (SANT).[129] This was a state agency that administered and developed trust land by first rendering it illegal for African individuals to own land. Trust tenure was introduced through the South African Development Trust which helped purchase land in areas set aside for the settlement of African populations. Despite a natural increase in population numbers against the stream of migrant African mine workers leaving their homes for better remuneration in the mining districts of the country, land allocation for SANT's purposes was limited to only 13% of the country by 1936.[130] Schapera notes from a 1946 survey that Taung by then had a total population of 172,730 people of which 29,080 were of European descent and 137,680 were African (though not stating particularly if all were Tswana).[131] The remainder were of other nationalities (Asiatic or coloured). The three local Taung tribes are the Batlhaping Ba Ga Mothibi towards the west, Batlhaping Ba Ga

---

[126] DM Scher, Naoorlogse Rasse-Verhouding, 1902-1948, *in* F Pretorius, (ed.), *Geskiedenis van Suid-Afrika …* (2012), p. 265.

[127] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 90.

[128] H Gilliomee, Afrikanernasionalisme, 1902-1924, & H Gilliomee, 'n "Gesuiwerde" Nasionalisme, 1924-1948, *in* F Pretorius, (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 290-309; J Grobler, Swart Politieke Ontwaking, 1875-1949, *in* F Pretorius, (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 311-314.

[129] HJ Klopper, & GJ Pienaar, The Historical Context of Land Reform in South Africa and Early Policies, *Potchefstroomse Elektroniese Regsblad*, 17(2), 2014, pp. 682-683.

[130] J Drummond, Reincorporating The Bantustans into South Africa: The Question of Bophuthatswana, *Geography,* 76(4), 1991, p. 370.

[131] I Schapera, *The Tswana* (1984), pp. 11-13.

Phuduhucwana in central Taung, and Batlhaping Ba Ga Maidi towards the east of Taung central, mainly situated in Manthe. The VHIS at that stage (in 1953) required between 3,000 and 4,000 full-time labourers.[132] Due to the impact of labour migration (especially to surrounding white-owned farms and the VHIS), up to 20% of the tribal population could not be present in Taung at any given time.[133]

3.3.3 Taung, from apartheid to independence under the Bophuthatswana rule: 1948-1994

It can be argued that the legal segregation of people according to supposed cultural origins in the early 20th century with the promulgation of the Natives Land Act of 1913, paved the way for further development of demarcated areas called homelands (also referred to as African Reserves, nation states or Bantustans).[134] In 1957 the TNR ceased to exist in name as the Phuduhucwana Tribal Authority on 26 March 1957 were proclaimed.[135] Once again it was governmental authorities who played a role in choosing headmen (*dikgosana*) who saw to the management of their different allocated districts (*merafe*).[136] As in most tribal areas, these spaces were also hereditary and, in this instance, most headmen were distant cousins of *Kgosi* Mankuroane. Though the Batlhaping, over the first half of the 20th century, tended toward compliance with little resistance against policies implemented, Manson notes that legislation involving the incorporation of sections of the TNR into Bophuthatswana in the 1960s and 1970s began to change this.[137] Two acts of particular importance were the Bantu Self-Government Act of 1959 and the Bantu Homelands Citizenship Act of 1970. The former served to establish ten areas demarcated as homelands. With the Population Registration Act of 1950,

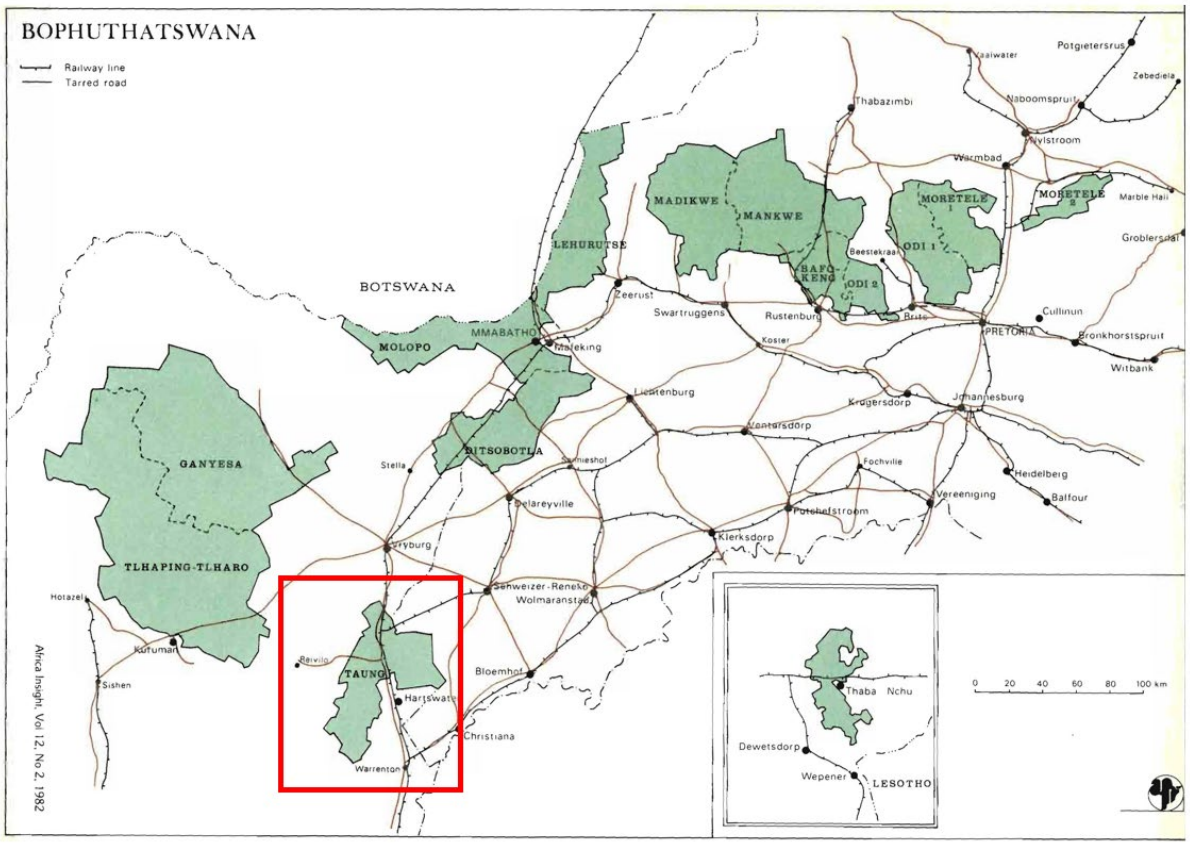
---

[132] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 93.
[133] PL Breutz, The Tribes of The Districts of Taung and Herbert (1968), p. 65.
[134] J Butler, IR Rotberg, and J Adams, *The Black Homelands of South Africa …* (1977), [online source, accessed: 20 April 2020, http://ark.cdlib.org/ark:/13030/ft0489n6d5/], pp. 9-10; Anon. Bophuthatswana. *African Insight*, 14(2), Jan. 1984, p. 134.
[135] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 30; NASA/ URU/ Vol. 3641/ Ref. 470, Prime Minister's Office, Omskrywing van die gebiede van die Batlhaping-stam en instelling van die Ba Ga Maide- en Bapuduhuchwane-stamowerheid: Distrik Taung, 9 March 1957.
[136] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), pp. 95-96.
[137] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 96.

people were legally classified into separate ethnical groups of which the indigenous African ethnicities, except those classified as Tswana, were placed into these homeland states.[138] The implementation of this system was an attempt by the various South African governments of the 20th century to segregate its different cultural and racial populace. Bophuthatswana was to be the homeland of all those classified as belonging to the Tswana cultural group (or Batswana), though tribes from, for example, Sotho-speaking peoples have been noted in Taung.[139] The second act (the Bantu Homelands Citizenship Act of 1970) referred to the independence of each of these homelands in South African politics as a separate development, which Bophuthatswana received in 1977 (Map 3-3).[140] Bophuthatswana consisted of seven units covering an area of 44,109km^2 spread over three of the four South African provinces at the time.[141] During the Bophuthatswana era (1977-1994), Taung was one of twelve other official districts of the Bophuthatswana region.[142] Though the Bophuthatswana government, in turn, were hard-pressed to develop the region, 2,000 Batlhaping comfortably situated in Mayen (along with its irrigation scheme) had to be relocated to Vaalboschhoek. Likely to compensate for the loss of the irrigation scheme and to encourage compliant relocation, the South African government endeavoured to provide other essential services, such as a clinic, in the new location.[143] In the end, however, forced relocations ensued and the Mayen area became a restricted zone for the Batlhaping.

---

[138] JW Hudson, Responses to Climate … (MA, Colorado State University, 2002), p. 37.
[139] J Butler, RI Rotberg, & J Adams, *The Black Homelands of South Africa* … (1978), pp. 1-2
[140] CJ Maritz, The Political System of Bophuthatswana, *African Insight,* (7)2, 1977, p. 203; J Butler, IR Rotberg, & J Adams, *The Black Homelands of South Africa* … (1977), [online source, accessed: 20 April 2020, http://ark.cdlib.org/ark:/13030/ft0489n6d5/], pp. 1-2.
[141] Anon, Bophuthatswana, *African Insight*, 14(2), Jan. 1984, p. 133; J Cowley and A Lemon. Bophuthatswana …, *Geography*, 71(3), Jun. 1986, p. 252.
[142] Republic of Bophuthatswana, Constitution, (5th Ed.), 1991, pp. 56-57, [online source, accessed: 29 September 2023, http://www.nationalarchives.gov.za/sites/default/files/ITEM_COD-0066-0151A-_-001.pdf].
[143] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History* … (2024), p. 96-97.



Map 3-3: Taung in Bophuthatswana[144]

Though not internationally recognised as an independent state,[145] the Bophuthatswana government attempted to function as such, with a full cabinet inclusive of a president, a national assembly, twelve presidential ministries, a cabinet secretariat and by 1985 no less than 16 departments of which the Department of Agriculture and Forestry had a subsection named the Agricultural Development Corporation.[146] These departments had specific duties towards the achievement of governmental development goals. In 1976 Taung's total population stood at 83,800,[147] which increased to 96,401 by 1980.[148] Taung was set to become the agricultural hub of Bophuthatswana as part of its development

[144] LM Mangope, Mangope On Progress in Bophuthatswana, *Africa insight*, 12(2), 1982, map at end of article.
[145] JA du Pisanie, B.J. Vorster en Afsonderlike Ontwikkeling*, in* F Pretorius (ed.), *Geskiedenis van Suid-Afrika …* (2012), p. 355.
[146] CA du Toit. 'n Koste Analise van Besproeiingsboerdery ... (MA, PUvCHO, 1985), addendum p. 25.
[147] J Potgieter, Verstedeliking in Bophuthatswana, *Stads- en Streeksbeplanning*, 5, Apr. 1977, p. 12.
[148] Data First, South African Census, 1980, [online source, accessed: 5 September 2024, https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/252/data-dictionary/F2].

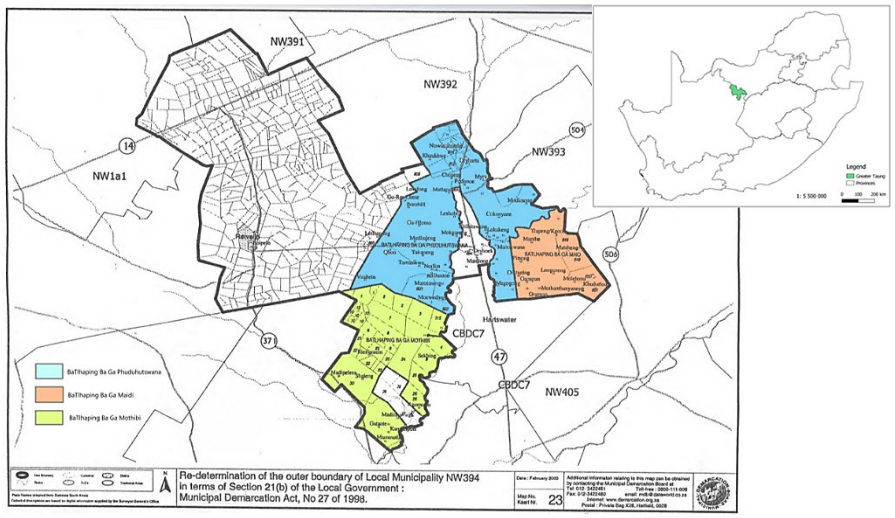
goals for further economic independence.[149] More on this era's agricultural organisation will be shared in Chapters Four and Five.

3.3.4 Taung, tribal leadership and land: Coping with local government pressures of a 1994-democracy

After the end of apartheid in 1994, the democratic Republic of South Africa was divided into nine provincial regions, amalgamating the Bantustan regions into South Africa as one geographic country. Van Eeden and Diedericks noted the transition process for the Taung region. At first, the Taung area (like many other areas that formed part of a Bantustan) had to be combined into a joint municipal administration before finally being amalgamated into one of the nine provincial regions in 2000.[150] The study area was henceforth located in the western region of what is referred to today as the North-West Province, a region which, apart from incorporating parts of the former Western Transvaal, Cape Province and Vryburg district, also includes the majority of former Bophuthatswana. Taung lies between the towns of Vryburg (to the north) and Jan Kempdorp (to the south) and is linked by the main railway line connecting Kimberley and Cape Town.[151] It also forms part of the municipal region called the Greater Taung Local Municipal (GTLM) District. The local municipality covers an area of 5,639km^2, comprising about 11,8% of the total land distribution of the Dr Ruth Segomotsi Mompati District of which it is a subdistrict.[152] As a category B (local) municipality it has a mayor and executive committee and shares its responsibilities with a category C municipality that deals with local governance matters and matters assigned to it by the national and provincial legislation.[153] Additionally though, due to various European influences over decades, the Tlhaping area of Taung is managed by the government and tribal rule with the latter much more dominant in the 21st

[149] Stored in the Taung Research Project files as: MPA, Anon, Five Years of Independence: Republic of Bophuthatswana, ca.1982, pp. 19-21.
[150] ES van Eeden, & M Diedericks, Taung Region's Local Governance and Developments Before and Since High Apartheid to The Early 21st Century, *in* ES Van Eeden, & A Manson (eds.), *Taung in History: Moments, Memories & Human Encounters* (Ivyline: Vanderbijlpark, 2024), pp. 108-109.
[151] JE Kokome, Evaluation of Irrigation … (MA, Central University of Technology, 2004), p. 17.
[152] StatsSA, Greater Taung, 2011, [online source, accessed: 13 October 2024, https://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality].
[153] ES van Eeden, & M Diedericks, Taung Region's Local Governance …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History* … (2024), pp. 109-110.

century.[154] Hudson refers to the area as a semi-autonomous local-level community.[155] The main role of tribal authorities in this dual system involves allocating communal land, keeping law and order, and administering justice (within limits) in their jurisdiction. These limits include "crimes against the state, crimes of violence, theft, and illicit trade".[156] It also includes their involvement in key decision-making in the development of their communities and requires their input where commercial activities likewise impacted or would impact the people under their jurisdiction.[157] However, the relationship between the traditional authorities and local municipal government has not always been good. According to Van Eeden and Diedericks analyses of sources it was found that tensions between duties and especially boundary disputes had often led to the failure of projects such as the Taung Regeneration Plan.[158]



Map 3-4: Municipal area of Taung (GTLM) including traditional areas in the spatial context of South Africa[159]

[154] PL Breutz, Tswana Tribal Governments Today, *Sociologus,* 8(2), 1958, pp. 141-143; ES van Eeden, & M Diedericks, Taung Region's Local Governance …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History* … (2024), pp. 115-116; Municipal Archive-Reivilo (MA-R), Consultative Meeting Between Kolong, Dikgageng and The Government, held with Traditional Leadership on Taung Partnership for Development, ca.2006-ca.2011, pp. 1-16.

[155] JW Hudson, Responses to Climate … (MA, Colorado State University, 2002), p. 40.

[156] JC Myers, *Indirect rule in South Africa: tradition, modernity, and the costuming of political power* (University of Rochester Press: Rochester, NY, 2008), p. 73.

[157] TB Baloyi, The Role of Traditional Leadership in Local Government (MA, University of Witwatersrand (Wits), 2016), pp. 35-36.

[158] ES van Eeden, & M Diedericks, Taung Region's Local Governance …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History* … (2024), pp. 118-119.

[159] The white area on the map denotes municipal owned land. All areas are ultimately managed by the municipality, though with liaising of affected chiefs and their councils in their respective constituencies. Stored in the Taung Research Project files: Municipal Archive-Reivilo (MA-R),

The majority of the area's current population is female.[160] Historically, this may have also been influenced by migrant workers (largely men) going to work on either surrounding white-owned farms or the mines in the west of Bophuthatswana and the West Rand mining regions.[161] Its total population has largely remained the same since 1994 (177,830), with a noted decline between 2001 (182,164) and 2011 (177,642).[162] Van Eeden, however, records an increase in 2022 (202,009) from a different source.[163] According to 2011 statistics, only 1,7% of its registered total population were either white, coloured, Indian/Asian, or otherwise.[164] With agriculture still being the economic heartbeat of Taung, a total of 203 farms were registered in the GTLM area of which 34 are situated on traditional lands.[165] Most of these farmers are communal, ranging between livestock and crop agriculture. Few white farmers or landowners are present in the area[166] and according to municipal employees, they mainly rent land from those Tlhaping 'landowners' who have been granted land by the chief.[167] Statistics on their precise numbers, however, proved elusive. This is mainly in the area under *Kgosi* Mankuroane's rule. The tribal land is owned (marked coloured in Map 3-4), managed, and distributed by one of the three chiefs depending on the area. Though farmers can own their own livestock, land distribution and access are given by the chief upon request. Like with livestock and home gardens, villagers gather their household water from boreholes where municipal water was not yet available. Since 2003, several revival projects have been planned as a means to enhance employment and alleviate poverty.

Publication with Municipal Maps: Map of Municipal Borders of Taung Including Traditional Areas. Map date: February 2000, Map no. 23.

[160] StatsSA, Greater Taung, 2011, [online source, accessed 29 September 2023, https://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality].

[161] CH Feinstein, *An Economic History of South Africa …* (2005), pp. 60-63, 66.

[162] StatsSA, Greater Taung, 2011, [online source, accessed 13 October 2024, https://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality].

[163] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 42.

[164] StatsSA, Greater Taung, 2011, [online source, accessed 29 September 2023, https://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality]

[165] R Maluleke, Census of Commercial Agriculture, North West: Financial and Production Statistics, Report No. 11-02-07, (StatsSA: Pretoria, 2017), p. 13, [online source, accessed: 13 October 2024, https://www.statssa.gov.za/publications/Report-11-02-07/Report-11-02-072017.pdf]; ES van Eeden, A brief topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in history …* (2024), p. 43.

[166] It was noted from talks with municipal employees that the few white farmers currently present in the area mainly rent land from those black "landowners" who have been granted land by the chief. This is mainly in the area under *Kgosi* Mankuroane's rule.

[167] The author spoke informally to the Mr Ricky Oliphant, an official at the Taung municipality on the matter, dated 18 April 2024.

Examples include the possibility of re-establishing a diary factory in Reivilo; citrus farming, and fish farming in the Spitskop Dam and specifically trout farming in the Taung Dam; game, goat and ostrich farming; and a brickmaking factory from the Pering mine dumps near Reivilo. The lack of funds (amongst others) has, however, been listed as one of the main obstacles to their successful implementation.[168] Of the different tribal authorities, the Ba Ga Maidi is the smallest, with only 12 villages under *Kgosi* Motlhabane's rule with the constituency stretching from Khudutlou to Manthe.[169] His region largely comprises pastoralism with no area producing crop harvests. For the Ba Ga Mothibi with 14 villages between Lower Majeakgoro to Rietfontein, the situation is similar, but largely due to the lack of funds to initiate irrigation crop agriculture and a harsh natural environment.[170] For the area under *Kgosi* Mankuroane's rule (the Ba Ga Phuduhucwana) with 76 villages, as will be seen later in Chapter Four, the majority of his area benefits from irrigation and thus accommodates a combination of crop farming and pastoralism.[171] By 2011 the municipal area of Taung consisted of 106 villages in total, while the majority of the people lived in rural areas most prominently as subsistence farmers.[172]

As in earlier discussions, in the mid-to late-1800s, the diamond rush to the area captured the attention of those seeking a quick income. More than a century later, alluvial diamonds within 20 km^2 of the river system near Taung are also currently of interest to the Batlhaping Ba Ga Maidi tribe, one of three tribes in the area.[173] As discussed in later chapters, the potential of alluvial diamond mining in the riverbeds of the Harts River catchment area, especially surrounding Taung Dam, has been a contentious issue among various stakeholders in the area. This has been especially so since the

---

[168] MA-R, S Lephoi, Pering Social Development Company Business Plan, (National Productivity Institute, 2003), pp. 1-7; MA-R, P Strijdom, & J Swart, Taung Ostrich Project, Business Model and Key Issues, ca.2006, pp. 1-7; MA-R, GTLM Minutes of the Meeting with Greater Political and Traditional Leadership, 2005, pp. 1-8.

[169] SPA, OA-25, Kgosi Nyoko Motlhabane, Ba Ga Maidi Tribal Offices, Manthe, 17 April 2024; ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 20.

[170] Greater Taung Local Municipality (GTLM), Leadership, [online source, accessed: 20 January 2023, https://www.gtlm.gov.za/leadership/traditional-leadership/batlhaping-ba-ga-mothibi/]; SPA, OA-22, Mr Patrick Mothibi (Rrangwane to *Kgosi* Mothibi), Batlhaping Ba Ga Mothibi tribal offices, 6 October 2022.

[171] TB Baloyi, The Role of Traditional Leadership in Local Government (MA, Wits, 2016), pp. 32-33.

[172] StatsSA, Greater Taung, 2011, [online source, accessed 29 September 2023, https://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality]

[173] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), p. 8

construction of the Taung Dam in the early 1990s. Several of the interviewed sources referred to the presence of miners and mining activities in the area before the construction of the dam and afterwards.[174] Several projects surrounding the Taung Dam have been featured as a means of economic growth as will be elaborated on in the following chapters.

3.4 Concluding thoughts

In this chapter, the Taung region is historically contextualised with emphasis on the geography and the people who have found themselves within its confines since the first permanent settlement. The significance of the chapter lies in the need to understand the natural area, but also how people interacted with their surroundings as a means of survival. It begins with a description of the semi-arid region with its summer rainfalls and cold winters making it ideal for animal husbandry and once-rich natural wildlife. The Batlhaping are Tswana Bantu speakers who settled in Taung in the late 18th to early 19th century. They were pastoralists, cattle being their main form of wealth. Though it was not uncommon for the Batlhaping to enter into arrangements (such as marriage) with foreign groups like the Koranna and even the British, the first Europeans they encountered were travellers and missionaries. It's said that it was this latter group that helped pave the way for further European expansion into the interior of Africa with Taung and the surrounding districts forming part of what was called the northern frontier. However, its fertile soils were plagued with a lack of secure water and severe erosion when the water did become abundant due to human endeavours. Its rivers (the Vaal, Harts and Dryharts) are paramount to the existence of modern-day agricultural practices. However, in their perennial existence, pre-1930 proved more ideal for diamond miners. It can be argued that it was the area's mineral wealth that drew many and especially sparked the interests of British colonisers, Dutch Trekboers, opportunistic travellers, and business acumen alike. With the increased presence of Dutch Trekboers (initially welcomed due to their support against the Ndebele incursions), the British stepped in and annexed the area as

[174] SPA, Taung research, OA-22, Patrick Mankuroane (73) & Israel Saku (49) (headman), Ba Ga Phuduhuchwana Council Office, Taung, 6 October 2022; SPA, Taung research, OA-17, Albertina Phutieagae (79) (resident), Ba Ga Maidi Council Office, Taung, 6 October 2022; SPA, Taung research, OA-05, Orapeleng Talakase (41) (Government official), Taung Mall, Taung, 30 September 2021.

part of the British Bechuanaland Protectorate in 1895. The Tlhaping would henceforth be subjects of the British Crown. The Tlhaping's ways of life were often dictated (if not simply affected) by the presence of these groupings. As we will see in Chapter Four, missionaries first affected a change in agricultural practices from pastoral to cultivators. Further change came under British governance (1895-1961) and apartheid rule (1961-1994) as both eras impacted the movement of people especially (as we will see in Chapter Four) their forms of income. During the Bophuthatswana era, Taung's importance as agricultural hub increased as the environment allowed for the furthering of irrigation investments - a form of economic activity that was continued into the state of democracy post-1994 with a dual tribal-/governmental system in place. In this chapter, the groups who settled in Taung were explored. The likely drivers of their settlement and how they engaged with each other and with the environment have been elucidated. This was done with a focus on the agricultural sector as a means to contextualise both the space and people before visiting their main economic activity in Chapter Four, which is agriculture.

CHAPTER 4 FROM SELF-SUSTAINED WATER ECONOMY TO IRRIGATION ECONOMY: TAUNG SINCE EARLY SETTLEMENT UP TO THE LATE 20TH CENTURY

4.1 Introduction

Agriculture has been a cornerstone of development and a reason for many of the irrigation projects launched throughout South Africa in the last 150 years[1] from pastoralism to crop cultivation. The changes in these two forms of agriculture have been more evident in Taung than in any other region. The various reasons for this drastic adaptation of livelihood are discussed in this chapter, of which politics and economic growth are the largest incentives. The impact of the growth in the agricultural sector in this region spills over into other sectors affecting people and their environment and leading up to the construction of the Taung Dam Irrigation Scheme, as will become clear in the ensuing chapter. Therefore, this section is dedicated to the overall growth and changes observed in the agricultural sector within Taung from the days of early pastoralism up to the 1970s. This is a means to investigate the historical and situational context of the area of Taung and its people's relationship with water from an agricultural perspective before the Taung Dam Irrigation Scheme.

4.2 Missionary influences on agricultural practices: From early pastoralism to crop cultivation in late 1700 to 1900, Taung

Precolonial Taung was an insignificant area when considering the large foci of Tswana settlements near the area today known as Kuruman.[2] It mainly served as a cattle outpost during the 18th century but grew in significance after the early 19th century with the settlement of the Batlhaping in the area after the *Difaqane* in the 1830s. With no forms of man-made large-scale irrigation, the semi-arid natural environmental conditions, as

[1] AM van A de Jager & AH Marais, Die Aanloop Tot Die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), 1994, p. 9; FE Kanthack, Irrigation Development …, *Agricultural Journal of the Union of South Africa*, 36(5), 1910, pp. 531-539; W Visser, Water as Agent for Social Change, 1900–1939 …, *Historia*, 63(2), Nov. 2018, p. 40 – 61.

[2] PL Breutz, The Tribes of The Districts of Taung and Herbert, (Pretoria, 1968), pp. 14-15.

earlier referred to, lent themselves more towards the keeping of cattle and goats.[3] Additionally, men took the animals out of their enclosures during the day for herding in the open veld, rather than enclosed in plots of land, as largely practised towards the latter part of the 20th century. A complex system of keeping animals and their trade are noted by historians such as economic historian, CH Feinstein, who elaborates on their economic value for the Tswana.[4] Cattle were valuable for trade and ensured bride wealth, a system used to secure brides, and with it, more hands around to help once children were born from these arranged marriages. Manson adds that apart from their nutritional value as sources of milk, economically cattle were seen as "storable wealth" that could often even be used in cattle-loan systems (otherwise called *mafisa*).[5]

The concentric layout of the Tlhaping tribes' settlement (as captured in Chapter Three) illustrated the way of life and the importance of agriculture. Homesteads formed the centre and considering their value, livestock and small stock were also encapsulated with these enclosures.[6] Beyond these were large swaths of vegetable gardens, usually cared for by large numbers of 200 to 300 women (and children) during the hours that the men watched over the grazing cattle herds. The latter group moved the cattle and goats well beyond the gardens. The vegetable gardens were tended to by hand and by the early 1800s consisted mainly of corn, beans, and watermelons.[7] Crops tended to be drought-resistant varieties, with sorghum being a staple.[8] Burchell noted that in extended times of drought when gardens became less productive the men would tend to hunt more often, whereas in times of plenty, hunting would be limited.[9] This practice, however, became increasingly difficult with excessive hunting done by European hunters with their far superior rifles. Africans acquiring weapons, accelerated the rate at which the game was hunted. This stood in contrast to the sparing manner in which, for example, the Batlhaping would

---

[3] P Erasmus, The 'Lost' South African Tribe – Rebirth of The Koranna in The Free State, *New Contree* (50), Nov. 2005, p. 81.
[4] CH Feinstein, An Economic History of South Africa … (2005), p. 18.
[5] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 66.
[6] GY Okihiro, Precolonial Economic Change …, *The International Journal of African Historical Studies,* 1(17), 1984, p. 64.
[7] PB Borcherds, *An Auto-Biographical Memoir of Petrus Borchardus Borcherds* (Books for Library Press: Freeport, New York, 1861), p. 128.
[8] GY Okihiro, Precolonial Economic Change …, *The International Journal of African Historical Studies,* 1(17), 1984, p. 67.
[9] WJ Burchell, *Travels in The Interior of Southern Africa*, Vol 2, (1822), pp. 524-525, 529, & 584-588.

traditionally have hunted.[10] Several decades after Borcherds' visits to the Tlhaping, Holub noted in his travels to the same areas during the 1870s that crops now also consisted of sugar cane, maize, sorghum and gourds, probably to supplant the lack of wild game as a food source.[11] Any surpluses were stored in 6-9 foot (1.8-2.7 m) deep jars (called *sefala*) with a 200 gallon (900 litres) capacity or otherwise put up for trade in the northeast and southwestern regions.[12] Batlhaping items of trade included skilfully crafted leather products (fur pelts), ivory, cattle and *sebilo* (small iron flakes used cosmetically).[13] The items were traded for metal and wooden products, tobacco, and beads from especially Batswana groups towards the north.[14]

Though cattle formed an integral part of the Tswana society (like many other African tribal societies, up to the 21st century), an increased European presence, notably missionaries, exposed them to different agricultural practices.[15] They had a marked impact on the social dynamics of the Tswana, especially in their propensity to secure water for crop production, which likely also impacted locals' reliance on their chief[16] or travelling rain doctors,[17] for the calling of rain. Previously, sources of water were limited to the then seasonal Dry Harts River, by digging in riverbeds, and pockets of waterholes and springs spread throughout the veld. Though Holub refers to the Bahurutshe region in his description here, their practices as Tswana were not much different from the Batlhaping.[18] As the focus of their wealth was largely their cattle, it made sense that the Tlhaping's

---

[10] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 76.
[11] E Holub, *Seven Years in South Africa …* (Translated by Ellen F Frewer), Vol 1, (1881), pp. 121, 124-125, & 128.
[12] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), pp. 27-28.
[13] GY Okihiro, Precolonial Economic Change …, *The International Journal of African Historical Studies,* 1(17), 1984, p. 69.
[14] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 66.
[15] Manson however notes that among the Batlhaping the first missionaries (JA Matthys Kok and William Edwards) in 1801 had much less success in their religious endeavours, than their counterparts (William Edwards, Robert Hamilton, and Robert & Mary Moffat) who visited Kuruman by the 1820s. *See* A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), pp. 67-68.
[16] N Jacobs, The Flowing Eye …, *The Journal of African History*, 37(2) 1996, p. 242; I Schapera, *Rainmaking Rites of Tswana Tribes* (Afrika-studiecentrum: Leiden, 1971), pp. 17-34.
[17] Western Cape Archives (WCA)/ 1 TGS, Vol. 4/27, Ref. N7/3 and Ref. N8/18/3, Correspondence: Native Rain Doctor in Taung's Reserve, dated March 1908.
[18] E Holub, *Seven Years in South Africa …* (1881), pp. 109-110, 119, 127, 411-415.

practice for securing water would reflect the same.[19] Gardening was consequently done based on the natural availability of water, which was otherwise carried to and fro by women.[20] When missionaries began to settle in the area, two instances were noted where the relaying of water furrows and the use of water from dams built by the Tswana women under the supervision of the serving missionaries became contentious. Not being aware of the communal nature within which water was viewed by the Batswana,[21] LMS missionaries, in two instances, bespoke their dismay. It was noted in 1821 that Mahutu women broke down a dam they painstakingly built under the guidance of the stationed missionary after they were not allowed to make use of the water from it.[22] In another instance, noted by Mary Moffat, her husband toiled for hours to relay water from the Kuruman River to their vegetable garden beds, only for the Tswana women to be found relaying the furrows to their own gardens. As a result, Moffat was required to dig more furrows.[23] Apart from securing water closer to the area of need, Holub also refers to the impact of technology, such as the plough, on women's duties. Noting that women were not allowed to work with cattle, and ploughs being drawn by the beasts, the task fell to men, thus relieving women of working and tilling the land.[24] In the 21st century, Hudson claims that communal farms still appear to have been the dominant agricultural practice within Taung.[25] Although Shillington warns against describing the Southern Tswana of the 19th century as purely subsistence-based.[26] He argues that their social, political, and importantly economic construction is far too intricate for such a misleading descriptor. This was made evident in Chapter Three when discussing Chief Mothibi's first encounters with Burchell and subsequent economic trade relations.

---

[19] I Schapera (ed.), Robert Moffat and Mary Moffat, Apprenticeship at Kuruman: Journals and Letters of Robert and Mary Moffat 1820-1828, (Chatto & Windus: London, 1951), pp. 21-24.
[20] E Holub, *Seven Years in South Africa* … (1881), pp. 239, 373.
[21] I Schapera (ed.), Robert Moffat and Mary Moffat, Apprenticeship at Kuruman… (1951), pp. 22-23.
[22] N Jacobs, The Flowing Eye …, *The Journal of African History*, 37(2), 1996, p. 241.
[23] JS Moffat, The Lives of Robert and Mary Moffat (1885), p. 245.
[24] E Holub, Seven Years in South Africa … (1881), p. 340.
[25] JW Hudson, Responses to Climate Variability … (MA, Colorado State University, 2002), p. 16.
[26] K Shillington, *The … Southern Tswana* (1985), pp. 9-11.

4.3 Securing livelihoods through water security: the Batlhaping's reaction to and government plans against drought towards economic growth, late 1890s to 1990s

In a description by Beinart *et al.,* on the use of agricultural water and supply thereof, there appears to have been widespread availability of water pools and wells which served the community well for years before the appearance of more secure water infrastructure in the form of dams and water furrows.[27] Liebe *et al.* also mention the value of such widespread small reservoirs for villages, but as is evident in the case of the Taung region, these communities were highly unlikely to become commercially viable in crop production with such a precarious arrangement in water supply.[28] As mentioned in Chapter Three, the Vaal- and Harts Rivers were perennial to the point of seasonal before the construction of the Vaal (1938), Spitskop (1974) and Taung (1993) Dams.[29] The area's rainfall is seasonal and sparse and is compensated for by a relatively well-supplied groundwater source from which people obtain their water by digging in sandy riverbeds.[30] This still appears to be a common practice in the 21st century.[31] The area's potential as a breadbasket for the colony was, however, a motive for the Cape Colonial government to inflict further population relocations at the beginning of the 20th century on some of the best-suited lands for crop agriculture in Taung. They did so as the potential of large-scale irrigation was investigated. Apart from competing with the elements (such as droughts), the allocated area was, as in most other areas of resettlement, not enough for viable commercial agriculture in either livestock keeping or crop production.[32] Especially since herding cattle outside the reserves has been prohibited since the 20th century. Van Eeden reports on the number of relocated persons at 3,000 and an additional 2,000 heads of

---

[27] K Shillington, Irrigation, Agriculture and The State: The Harts Valley in Historical Perspective, *In* W Beinart, P Delius, & S Trapido, *Putting a Plough to The Ground …* (1986), pp. 311-314.

[28] J Liebe, M Andreini, N van de Giesen, & T Steenhuis, The Small Reservoirs Project: Research to Improve Water Availability and Economic Development in Rural-Semi-Arid Areas, *In* M Kitissou, M Ndulo, M Nagel & M Grieco (eds.), *The hydropolitics of Africa: A Contemporary Challenge*, (Cambridge Scholars Publishing: New Castle, 2007), pp. 325-326.

[29] L van Vuuren, *In the Footsteps of Giants …* (2012), pp. 134, 230 & 232; AM van A de Jager & AH Marais, Die Aanloop Tot Die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), 1994, p. 10.

[30] K Shillington, Irrigation, Agriculture and The State: … *In* W Beinart, P Delius and S Trapido, *Putting a Plough to The Ground ...* (1986), p. 312.

[31] Taung Research Project, Oral Archive (OA-12), Community Group Meeting in Taung Hotel School, Interviewer: Prof ES van Eeden, 5 May 2022.

[32] A Manson, The Tlhaping of The Taung District During The 20th Century, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 86.

cattle.[33] Additionally, the little agricultural land available to the Batlhaping had to produce enough for trade with European storekeepers towards the end of the 19th century. Manson points out that this affected the Batlhaping's traditional manner of economic exchange. Especially as they also contended with the natural drought cycles often experienced in this region. Buying on credit and having to buy back your sold produce became commonplace when payments could not be made during difficult seasons.[34] A move towards crop cultivation was, however, likely caused by the devastating effect of the rinderpest disease in 1896. The Batlhaping of the area lost 19,200 of their 20,000 heads of cattle (roughly 97%) either directly through the disease or the shooting of infected animals.[35] Where the British officials claimed that the severity of the spread was due to the Batlhaping's practice of keeping their animals unfenced, the Tswana in turn felt the British government's increased fencing tactics exacerbated its spread. Be that as it may, many found themselves without a viable income and the loss of wealth unleashed a labour force for European enterprises, especially the mining industries outside the reserve.[36] These were the early days in which the Batlhaping were seen to adapt their agricultural practices and livelihoods according to governmental decisions. In the ensuing sections, more such changes were brought forth especially in crop agriculture as water security became an objective for the various governments in place.

4.3.1 Earliest governmental dam initiatives to secure water for agricultural purposes in Taung: 1920 to 1937

Between 1920 and 1927 funds were collected among the people of Manthe and Taung, after which Chief Kgantlapane entrusted the money to the Secretary of Native Affairs for the completion of a bridge over the Harts River.[37] This bridge was important as Manthe tended to be cut off from the rest of the area when floods occurred. This area would later also become significant for the development of the Taung Dam. However, hardly a

---

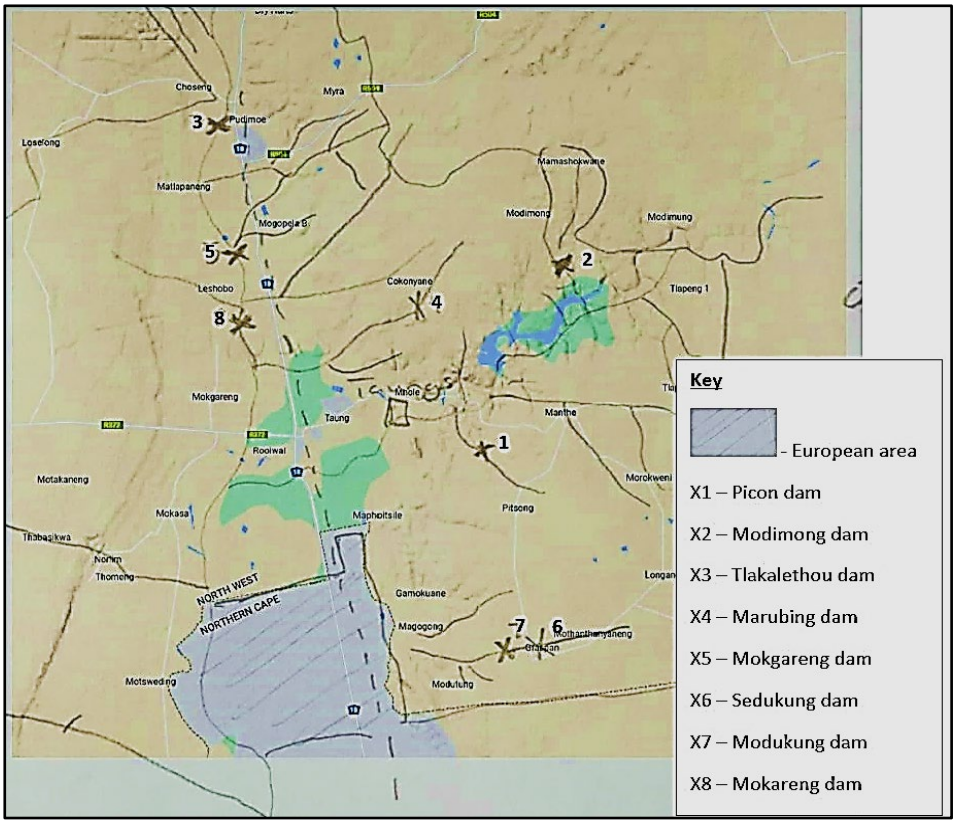
[33] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 29.
[34] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 84.
[35] G Marquardt, Water, Wood, and Wild Animal Populations: Seeing The Spread of Rinderpest Through The Physical Environment in Bechuanaland, 1896, *South African Historical Journal*, 53 (2005), pp. 74-75, & 83.
[36] K Shillington, *The … Southern Tswana* (1985), pp. 111-113.
[37] NASA/ NTS/ Vol. 8392, Ref. 1/359, Taung: Erection of Bridge over Hartz River, 1920-1928.

decade later the area, like many other parts of South Africa, was affected by severe droughts. Already in 1930, a headman of Dryharts, Mr Sekate Mahure, requested a handpump for small stock kept by the people in his jurisdiction.[38] The Department Secretary of Native Affairs hired experts from Kimberley to install a 25-foot (7.62 m) deep well with an accompanying handpump to ensure both the safety of children and cattle, as the former was often put in charge of herding duties.

It is unclear whether it can be linked to the missive written by *Kgosi* Mankuroane to the government, but Manson notes that Mankuroane wished for the government to help address problems concerning employment, a lack of market for their produce, as well as the need for more water.[39] Apart from the railway line built through the TNR in 1936,[40] the South African Native Trust (SANT) commissioned the construction of various small-scale dams (notably referred to as stock dams – Map 4.1) for Taung during the 1930s - a total of eight stock dams were constructed as a means to assist locals in coping with the effects of the drought.[41] The purpose of a stock dam, as understood from the South African Register of large dams, is that the small dams are meant to support farmers who keep small stock such as goats and sheep or large stock such as cattle.[42] For example, the Sedukung and Magogong dams were set to serve 300 families with a total of 1,200 small stock and 500 large stock upon completion.[43]

---

[38] NASA/ NTS/ Vol. 7927, Ref. 148/337, Part 1, Taungs: Dryharts Location – Water Supply, pp. 7-19.
[39] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 94.
[40] NASA/ NTS/ 9449, Ref. 25/389, Part 1, Taung. Railwayline. Taung Reserve - Northern Lime Corporation, 1935-1936.
[41] NASA/ NTS/ Vol. 10447, Refs. D62-D69, Dams in Taung; NASA/ NTS/ Vol. 10444, Ref. D1-D11, Mokgareng Dam, District Taungs, 1948-1957.
[42] *See* SANCOLD, ca.2024, South African Register of Large Dams: Dam Safety - Small and Large Dams [online source, accessed: 28 February 2024, https://sancold.org.za/sa-register-of-large-dams/].
[43] NASA/ NTS/ 7994, 317/337, Part 1, Taung Native Reserve – Dam Construction, pp. 19-22, 63-64 & 74; NASA/ NTS/ Vol. 10447, Ref. D68, Sedukung Dam - Taungs, pp. 36-38.



Map 4-1: Localities of various small-scale dams from the 1930s, Taung[44]

As it was also locals who were employed during the construction phases, it should have meant there was a reliable workforce. This proved a contentious issue though, for some local farmers this not only meant their workforce on the farm was smaller, but for others, such as in the case of the Modutung dam, it also meant that they had to give up fertile portions of their land due to flood lines rising higher than initially planned.[45] One government engineer and one skilled overseer were involved in each project. A reliable workforce however remained a problem throughout as many of the locals were oft required to return to mines and other duties in, for example, the Transvaal.[46] Ironically, the agricultural sector was also impacted by labour shortages. Workers were allowed to return to tend their plots of land, and seasonal workers were also often difficult to replace. They left the area entirely during certain parts of the year, especially during ploughing

[44] The map and dam indicators were obtained from various archival sources: NASA/ NTS/ Vol. 10447, Refs. D62-D69, Dams in Taung; NASA/ NTS/ Vol. 10444, Refs. D1-D11, Mokgareng Dam, District Taung, 1948-1957.

[45] NASA/ NTS/ 7994, 317/337, Part 1, Taung Native Reserve – Dam Construction, p. 55; NASA/ NTS/ Vol. 10447, Ref. D69, Modutung Dam - Taungs, pp. 39-41.

[46] NASA/ NTS/ 7994, 317/337, Part 1, Taung Native Reserve – Dam Construction, pp. 5, & 76; NASA/ NTS/ Vol. 10447, Ref. D66, Marubising Dam - Taungs, pp. 30-32.

and harvesting seasons.[47] None of today's specialised machinery was available in the 1930s either. All work was completed manually, and where possible the heavy lifting was done by spans of oxen. In addition to the difficult circumstances listed above, the natural wildlife, notably in the form of moles, proved a headache at best. All the dams were earth-filled, and it was often mentioned that moles' burrowing activities in these dams compromised the structure, even during construction. For example, the Marubing Dam was impacted to such a degree that a portion of it almost collapsed onto the workers during construction. It took a few days for them to process the incident and return to work to finally complete the dam in 1937.[48] Despite all the efforts put into constructing these dams, none of them survived for very long. On maps (see Map 4-1) only a denture in the earth for some shows that they ever really existed. Most notably, silting posed the predominant reason for their abandonment. Hardly a decade passed after construction and most of these dams were either partially or completely silted up.[49] In the case of the Mokgareng Dam, water seepage influenced the dam's capacity.[50]

Though these dams mostly failed, they served to assist the locals during droughts and when poverty was rampant for most of South Africa. Though it is not explicitly inferred, like with various other government projects of the time (referring to the poor white problem addressed by various scholars),[51] the money spent on labour at least served as an income for the employed native population. It was noted that labourers working on these dams built in Taung were paid more than the current going rate at the time with 25 shillings per month offered by the Chief Native Commissioner in April 1937.[52] The timing of their construction is, however, noteworthy, as the timeframe coincides with the development

[47] NASA/ NTS/ Vol. 7994, Ref. 317/337, Part 1, Taung Native Reserve – Dam Construction, pp. 5, 8, 56-57, 76, & 85; NASA/ NTS/ Vol. 10447, Ref. D66, Marubising Dam - Taungs, pp. 30-32; NASA/ NTS/ Vol. 10447, Ref. D62, Mokgareng Dam - Taungs, pp. 33-35.
[48] NASA/ NTS/ Vol. 7994, Ref. 317/337, Part 1, Taung Native Reserve – Dam Construction, pp. 5, 76; NASA/ NTS/ Vol. 10447, Ref. D66, Marubising Dam - Taungs, pp. 30-32.
[49] NASA/ NTS/ Vol. 7994, Ref. 317/337, Part 1, Taung Native Reserve – Dam Construction, p. 65; NASA/ NTS/ Vol. 10447, Ref. D64, Manthe Dam - Taungs, pp. 13-18.
[50] NASA/ NTS/ Vol. 7994, Ref. 317/337, Part 1, Taung Native Reserve – Dam Construction, pp. 8, 19-22, 56-57, & 85; NASA/ NTS/ Vol. 10447, Ref. D62, Mokgareng Dam - Taungs, pp. 33-35.
[51] An initial report that is often relied on: RW Wilcocks, *Die Armblanke-vraagstuk in Suid-Afrika: Verslag Van Die Carnegie-Kommissie* (Carnegie Korporasie: Stellenbosch, 1932).
[52] NASA/ NTS/ Vol. 7994, Ref. 317/337, Part 1, Taung Native Reserve – Dam Construction, p. 86.

of the much larger Vaalharts Irrigation Scheme (VHIS) that also officially commenced in 1933.[53]

4.3.2 Neighbouring developments spilling over: The Vaalharts Irrigation Scheme and the Taung Irrigation Scheme, 1875 to the 1970s

A milestone innovation was the Vaalharts Irrigation Scheme (VHIS), which is a forerunner to the water initiatives in Taung. In 1875, surveyor-general Francis HR Orpen suggested a gravity-fed canal that would be ideal for the then-named "Harts River Valley Irrigation Scheme" (later renamed to the Vaalharts Irrigation Scheme (VHIS)).[54] In 1882 a report by Kimberley's resident engineer, PS Hyslop and an engineer from the Cape Colony, J Gamble, further supported the idea of an irrigation project in the lower Harts Valley.[55] However, the proposed scheme included a highly contested area among the parties present in the area at that stage (referring to the border skirmishes of the late 1880s between the British, Trek Boers, freebooters, and Batlhaping). Various obstacles delayed the initiation of the project, most notably the lack of funds and warfare (first the internal skirmishes that led to the South African War in 1899-1902 and then the First World War from 1914-1918). A decade after Orpen's explorations, Sir Cecil John Rhodes advocated strongly in 1886 for the project to commence as it would ensure water and subsequently food to the mining communities of Kimberley, but a lack of funds remained a challenge.[56] Other important role players included appointed engineers from the Departments of Water Affairs and of Irrigation such as WB Gordon, and HC Litchfield who investigated the agricultural potential of the area.[57] According to Lombard, the area was suitable for an irrigation scheme since a large portion of the topography surrounding the Dry-Harts River is situated below the riverbed of the Vaal River.[58] This includes an area from as far as Vryburg and the Harts Valley at Taung to Fourteen Streams. The watershed area between the Vaal and Harts Rivers could and would ultimately be connected with a canal

---

[53] L van Vuuren, *In the Footsteps of Giants …* (2012) p. 125.
[54] L van Vuuren, *In the Footsteps of Giants …* (2012) p. 124.
[55] K Shillington, Irrigation, Agriculture and The State: … *In* W Beinart, P Delius, & S Trapido, *Putting a Plough to The Ground ...* (1986), p. 319.
[56] J Jordaan, The Civil Engineering Aspects of Improvements to The Vaalharts Water Scheme, *Civil Engineering in South Africa,* 2(3), 1994, p. 21.
[57] L van Vuuren, *In the Footsteps of Giants…* (2012), pp. 63, 65, & 124-130.
[58] AM van A de Jager & AH Marais, Die Aanloop Tot Die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), 1994, pp. 9-10.

system that enlarged the irrigable area substantially. With a valley stretching from the junction of the Dry-Harts River near the old Tlhaping capital, Taung, to about 130km south, where with a meandering path it joins the Vaal River (Map 4.2). This large project took over a decade (1921-1934) of planning and research before it was finally attempted and the go-ahead for the "Vaalharts project" was obtained in 1933.[59] The project as part of the Vaal River Development Scheme was one of many government-initiated projects in the 1930s used as a means to alleviate poverty (and in this case specifically white poverty) caused by among other things the global Great Depression in the same decade.[60]

Map 4-2: Vaalharts Irrigation Scheme, Google Maps[61]

[59] RTJ Lombard, Stigting Van Die Vaalhartsbesproeiingskema as Heenkome vir Hawelose Armblankes. *Contree,* (24), 1988, p. 13; K Shillington, Irrigation, Agriculture and The State: … *In* W Beinart, P Delius, & S Trapido, *Putting a Plough to The Ground ...* (1986), pp. 311, & 314; AM van A de Jager, & AH Marais, Die aanloop tot die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), 1994, p. 10.

[60] L van Vuuren, *In the Footsteps of Giants …* (2012), pp. 106-109.

[61] Screenshot by author, 1 Sept 2022.

The project seems to have been ongoing with improvements undertaken throughout the decades. In 1935, a research station was established that focused on soil conditions and crop suitability for the area. In 1936, the first 40km of canals were placed, and water started flowing in December of that year. Two years later, in 1938, the first farmers were settled on the scheme, with more canals completed in 1949. In 1967, the weir at Vaalharts was raised by 1.2m to accommodate a larger water storage capacity (then increased to 48,7 million m^3).[62]

As noted in Chapter Three, the regional history regarding land ownership in the area has also been quite diverse, especially since water became a consideration. Negotiations for the completion of the VHIS were paramount for the South African government.[63] As such, it was already in 1937 that the South African government realised that much of the fertile lands that could benefit from the scheme were situated in the Magogong area of the Taung Native Reserve (TNR).[64] Based on a legislative agreement between the British Crown and the Batlhaping signed during the British annexation, the TNR could not be expropriated.[65] Instead, the South African government had to negotiate with *Kgosi* Mankuroane and his court. Based on the arrangements between the ministers of the Departments of Native Affairs (Colonel Reitz), and – Lands (Mr PGW Grobler), inclusive of their advisors and the heads of Taung, 16,000 morgens (or about 13 707.2ha) of irrigable land was relinquished in exchange for 8,000 morgen (6853.6ha) of grazing fields to the north of the Reserve. Free irrigation water for 8,000 morgen (6853.6ha) of lands within the Reserve was also included, both amounts adding up to equal the amount relinquished.[66] It was the water obtained from these initial negotiations that would later be referred to as the initial Taung Irrigation Scheme and from which farmers benefited to

---

[62] L van Vuuren, *In the Footsteps of Giants …* (2012), pp. 125-130.
[63] K Shillington, Irrigation, Agriculture and The State: … *In* W Beinart, P Delius, & S Trapido, *Putting a Plough to The Ground ...* (1986), pp. 328-329.
[64] L van Vuuren, *In the Footsteps of Giants …* (2012), p. 130.
[65] AM van A de Jager, & AH Marais, Die Aanloop Tot Die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), 1994, p. 10.
[66] RTJ Lombard, Stigting Van Die Vaalhartsbesproeiingskema as Heenkome vir Hawelose Armblankes, *Contree*, (24), 1988, p. 15; L van Vuuren, *In the Footsteps of Giants …* (2012), p. 130; AM van A de Jager, & AH Marais, Die Aanloop Tot Die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), 1994, pp. 10-11.

this day.[67] It was also likely due to these arrangements that Manson purports that the TNR was likely better off in terms of agricultural viability compared to its other reserve counterparts.[68] This irrigation initiative in Taung dates back to 1943 when the first plots for flood irrigation were allocated to local inhabitants.[69] The first cement furrows were completed two years later in 1945, though the canals took four years to complete.[70] It was also around this time that the two irrigation schemes (the Mayeng and the initial Taung Irrigation Scheme) allowed for the implementation of the land tenure system. This was a far cry from the traditional method of allocating land to Batlhaping by the Chief. In this initiative, the Bantu Affairs Commissioner granted 1,567 farmers with 2 morgen (1.71ha) plots each, albeit on strict policies that could be revoked,[71] much like the contractual conditions of the diary project that was an extension to the Taung Irrigation Scheme.[72] They would use flood irrigation in these beginning years for their method of implementation.[73] The areas in Taung identified to form part of this initiative were Mokgareng, Mokassa, Smous, Molale, Jim Molale, C Moss, Bogosing and Pudimong (Map 4.3).

---

[67] As mentioned in Chapter One, the naming convention of the Taung Irrigation Scheme often led to confusion on the part of the author and made finding information for the latter scheme of the 1990s more difficult.

[68] A Manson, The Tlhaping of The Taung …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 86.

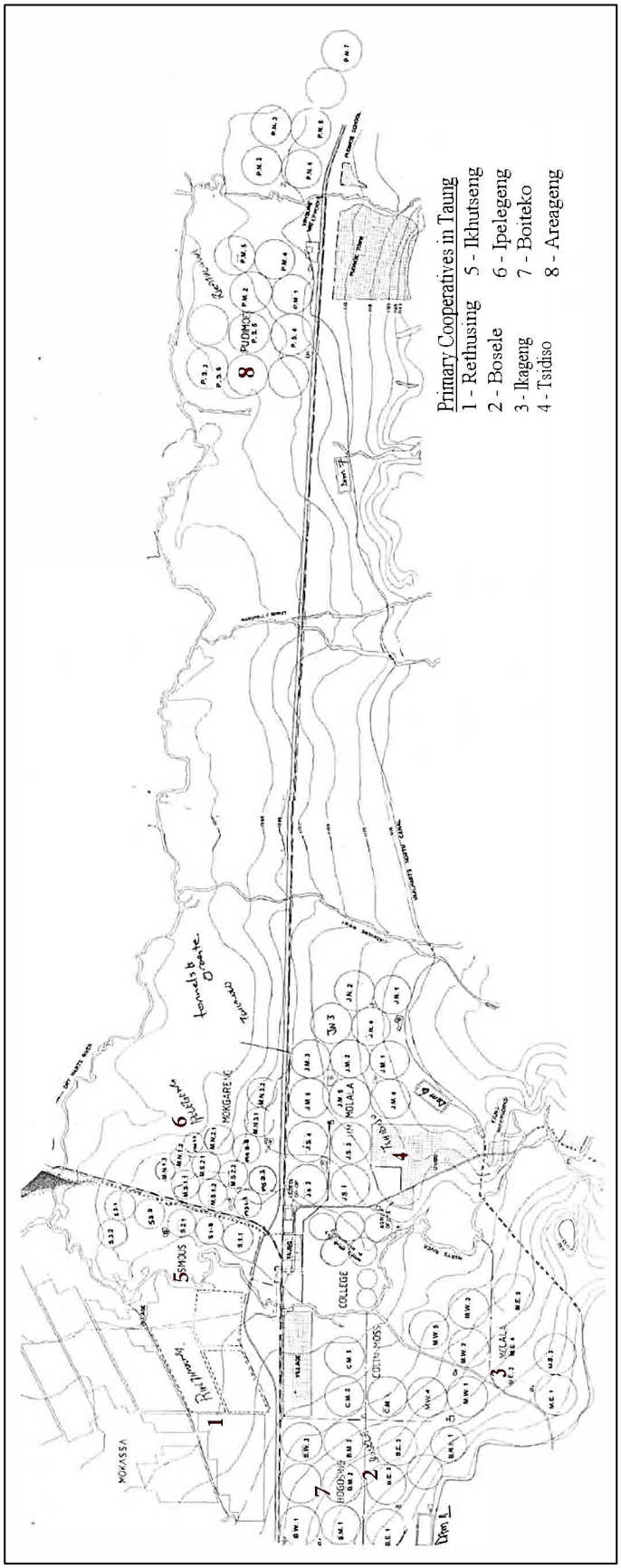
[69] PL Breutz, The Tribes of The Districts of Taung … (1968), p. 22.

[70] PL Breutz, The Tribes of The Districts of Taung … (1968), p. 72.

[71] J Swanepoel, Landbou-Ontwikkeling in Suid-Afrika, 1652-1954, Met Spesiale Verwysing Na Staatsoptrede in Hierdie Verband (PhD, NWU, 1958), pp. 409-410.

[72] WCA, A12 - Unknown, Conditions applicable to the Co-operative Dairy Farming Scheme: Taung, date unknown [draft contract].

[73] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards ... (Working Paper 72, 2004), pp. 49-50.



Map 4-3: The Taung Irrigation Scheme as part of the VHIS negotiations inclusive of the Co-operatives[74]

[74] SPA, OA-18, De'Dre Titus, Vaalharts Water User Association, Water Bailiff at Taung station, 6 October 2022, Map was given to author by interviewee.

The relocation initiatives as the colony sought to establish the large scale VHIS had the added effect that the space in which the Tlhaping could practice their agricultural traditions (such as animal husbandry) diminished.[75] In addition to the area's growing significance in the agricultural sector, the TNR, as mentioned, was earmarked as an area of "betterment" by Proclamation No. 116 of 1949.[76] The betterment system itself was implemented by various governmental initiatives since the 1930s which claimed to focus solely on ecological preservation through better agricultural practices whilst also improving production specifically in the reserves.[77] Breutz writes that by 1954 the southern regions of Taung were overgrazed, allowing for bitter Karoo grass to infiltrate the area.[78] Where authorities saw the free-roaming cattle herding style of the Tlhaping as being uncontrolled, fenced encampments and the much-despised practice of culling ensued.[79] Additionally, according to Turton *et al.* the Tomlinson Commission Report of 1956, investigating the practicalities of separate development, would favour the reliance on agricultural development for the progress of the homeland in such a way that the plans enshrined in it could be seen as a blueprint for growth.[80] As part of the "large potential for growth" it noted that across all homelands a total of 122 schemes already had 13,366 morgen (11,450.65 ha) under irrigation by 1956. With a fifth of South Africa's potential production in the homelands, the Commission recommended that special attention be paid to irrigation to improve and expand the agricultural sector. Betterment in the context of development meant that areas identified for the reserves were the only places where the people of these reserves could "own" a piece of land for agricultural practices. Though on paper the system seemed good for growth, it did not work well in practice, as this land often belonged to chiefs who would grant access to land but could just as easily revoke it. Access to collateral for loans was therefore impossible for those on tribal lands (and subsequently homelands). Most development in the Taung area was therefore focused

---

[75] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 30.
[76] NASA/ BAO/ Vol. 5760, Ref. H128-1665, Beplanning – Taung, 1949-1963, p. 154.
[77] J Yawitch. *Betterment …* (Johannesburg, 2000), pp. 5-17; C de Wet, Betterment Planning in South Africa: Some Thoughts on Its History, Feasibility and Wider Policy Implications, *Journal of Contemporary African Studies*, 6(1–2), 1987, p. 85.
[78] PL Breutz, The Tribes of The Districts of Taung … (1968), pp. 68-71.
[79] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 95.
[80] SAWHAR/ PRCDPR- 21-018, AR Turton *et al.*, 2004, *A Hydropolitical History of South Africa's International River Basins* (WRC Report No. 1220/1/04, Gezina), pp. 56-60.

on the goals enshrined by betterment planning, which entailed agriculture.[81] This too proved difficult as projects to enhance agricultural produce in the latter decades of the 20th century put many people off their land and working in industries outside Taung. A fact already confirmed in the 1954 report by the area's Chief Agricultural Officer to the Chief Native Commissioner is that culling practices would deprive 917 of the 1202 stock-owning families of their only form of income.[82] Additionally, the fencing of designated cattle camps not only deprived the inhabitants of their traditional cattle herding practices but also resulted in the need to move people from their huts to other designated residential spaces. A practice repeated in the 1960s (and reported on later), which was a likely recipe for discontent but also spoke to the regularity at which Batlhaping were relocated within their own traditional space and place. The report by the Chief Agricultural Officer further mentions that, despite the need for noted further development in water supplies, the planned Mayen[83] Irrigation Scheme would further reduce the number of stock owners.[84]

Though already benefitting from the water negotiations with the VHIS, the amount supplied to Taung was gazetted in 1952 to the amount of an area not exceeding 7,500 morgen (6 425.25ha).[85] By 1953, though not having the smallest area dedicated to grazing with 7,200 morgen (6168.24ha), the Mayen area was the only subdistrict in Taung at that stage with an area dedicated to irrigation (3,200 morgen (2741.44ha) in total). Although European stores were relocated outside the reserve in 1954 (which likely had a major impact on market availability),[86] successes in the Mayen and Taung Irrigation Schemes are captured by Breutz (see Table 4-1).[87] Annually, the Mayen plot holders

---

[81] C De Wet, Betterment Planning in a Rural Village in Keiskammahoek, Ciskei, *Journal of Southern African Studies*, 15(2), Jan. 1989, pp. 326-327.

[82] NASA/ BAO/ Vol. 5760, Ref. H128-1665, Ad hoc Committee's report on the Lower Taung Reserve, Comments by Chief Agricultural Officer – Taung, 18 Nov. 1954, pp. 111-112.

[83] It is noted that some sources spell the area as 'Majeng'. Notably the 'Mayen'-spelling will be followed as this is the more contemporary accepted spelling.

[84] NASA/ BAO/ Vol. 5760, Ref. H128-1665, Ad hoc Committee's report on the Lower Taung Reserve, Comments by Chief Agricultural Officer – Taung, 18 Nov. 1954, pp. 111-112.

[85] Government Gazette, Department of Irrigation, Vaal River Development Scheme, No. 2651, 21 November 1952; SAWHAR/ PRCDPR- 21-018, AR Turton *et al.*, 2004, *A Hydropolitical History of South Africa's International River Basins* (WRC Report No. 1220/1/04, Gezina), p. 228.

[86] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 95.

[87] A Smit, The Agricultural Heartbeat of The Taung Region: Past and Present, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), pp. 137-138.

made roughly R600 whereas in Taung the average annual income was R300 to R400. According to Breutz, this was considered a sufficient amount of income for a family in this area at that time.[88] Not included in these figures were the ensuing cotton crop projects' results. In 1963 a total of 3,810.176 kg of cotton were harvested from 84 morgen (71.9628 ha) of land.[89]

Table 2.1: Taung irrigation scheme – crop delivery performance, ca 1965.

Crops	Morgen Cultivated	Total Production	Production per morgen
Wheat	1400	25 487 bags	18.2 bags
Lucerne	996	7 968 tons	8 tons
Peanuts	710	6 390 bags	9 bags
Maize	460	3 680 bags	8 bags
Peas	500	3 250 bags	6.5 bags
Kaffir* beans	408	3 250 bags	4 bags

Table 2.2: Mayen irrigation scheme – crop delivery performance, ca 1965.

Crops	Morgen Cultivated	Total Production	Production per morgen
Wheat	60	720 bags	12 bags
Lucerne	12	120 tons	10 tons
Peanuts	36	196 bags	5.4 bags
Maize	10	80 bags	8 bags
Peas	1	6 bags	6 bags
Kaffir* beans	5	20 bags	4 bags

Source for both tables: PL Breutz, *The tribes of the districts of Taung and Herbert* (Pretoria, Government Printer, 1968), pp. 73-74; 77.

[88] Using an inflation calculator R600 per annum in 1963 would equate to R69 180.00 in 2024. For R300 it is R 34 590.00, source: R Crause, South African Inflation calculator, [online Source, accessed: 21 July 2024, https://inflationcalc.co.za/?date1=1963-07-01&date2=2024-07-21&amount=300]; PL Breutz, *The Tribes of The Districts of Taung …* (1968), pp. 73-74.

[89] PL Breutz, *The Tribes of The Districts of Taung …* (1968), p. 74.

Together, the Mayen Irrigation Scheme and the initial Taung Irrigation Scheme proved successful though limited in their development. By 1965, the former only had 185 morgen (158.5 ha) of its potential 300 morgen (257.01 ha) of land developed and for the latter only 4,750 morgen (4069.3 ha) of a potential 6,000 morgen (5140.2 ha) of land was put under irrigation. The number of plot holders at this time was respectively 64 registered plot holders in Mayeng, and 29 empty plots; and 1,503 with an additional 42 vacant plots in Taung.[90]

Nine local inhabitants were employed as water bailiffs to control the water distribution to the 2 morgen plots within these areas. It was largely run, however, by European employees from the Department of Bantu Administration and Development. Strict controls and rules were applied for the plot holders involved in these initial irrigation schemes, and most of these served to enhance the productivity of each plot.[91] To help manage these irrigation plots, for the first time, a second "deputy" headman by the name, Lekgêthô Joseph Baisitse was appointed in 1962.[92] With the completion of the project, the once ideal area for animal husbandry, suddenly also became a suitable area for crop farming, such as lucerne, potatoes, ground nuts, wheat, maize, beans and various fruits and vines.[93]

Due to the betterment and the presence of the irrigation scheme, it may well be the reason why this area has kept its reputation as a largely agricultural hub. This, even though by 1963 the Mokassa area (unlike Mayekgoro, Sekin, Seodin, Shalen, and Driefontein) had not yet been planned accordingly.[94] This was especially evident in a letter by the area's Bantu Affairs Commissioner in that year lamenting the competing situation between cattle owners and irrigation farmers. On his arrival in his position, the Mokassa area (consisting of No. 1 and No. 2 areas) was not developed as required. Mokassa No. 1 though situated within the initial Taung Irrigation Scheme was "littered" with cattle by plot holders who did not have the required grazing rights. At that stage, it was also not possible to move these

---

[90] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 31.
[91] PL Breutz, The Tribes of The Districts of Taung … (1968), pp. 71-72.
[92] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 25.
[93] Anon, Irrigation Scheme That Heralded a New Era, *Civil Engineering*, 7(7), Jul. 1965, p. 178.
[94] NASA/ BAO/ Vol. 5760, Ref. H128-1665, Letter by the Chief Bantu Affairs Commissioner, Suidelike Reservate: Taung Distrik, p. 166.

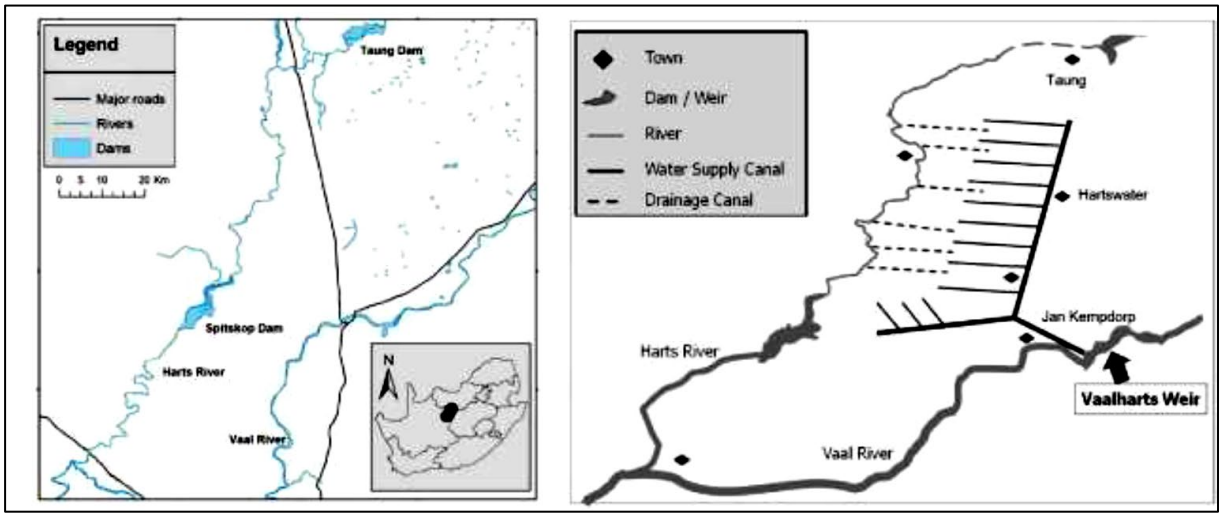
plot holders to Mokassa No. 2 as the area had not yet been prepared for the livestock owners. Situations such as these called for the moving and removing (once again) of people within the reserve itself which caused further tension between governmental authorities and local inhabitants. This is evident through letters to governmental authorities by local inhabitants and representatives of Chief Mankuroane of the Ba Ga Phuduhucwana.[95] It was, however, the need to place people with no irrigation rights in a general area, that initialised the development of the "Taungstat" as we know Taung today.[96] However, Breutz acknowledges the town district of Taung to have first been a European centre around which Batlhaping settled and who did not own or have access to land.[97] Access to water, however, remained a problem with 14 earth-filled stock dams and 211 boreholes for the entire area. One other continuous concern was the threat of water logging as flood irrigation would often lead to a rise in the water table and further salination of the soil.[98] Sprinkler irrigation was a subsequent substitute investigated by Agricor in the 1970s.[99] In 1973 measures to help prevent the silting of the Spitskop Dam included conservation strategies involving erosion control and subsequently saw initiatives in better practices in animal husbandry in areas reaching as far north as the Manthe area, among others, as part of the Harts River Catchment area.[100]

The VHIS (inclusive of Taung) thereafter stretched approximately 75 km from Warrenton in the south to Taung in the north with larger towns such as Jan Kempdorp and Hartswater situated in between.[101] The flow of water from the VHIS is fed from the Vaal River at the Vaalharts Weir at Warrenton near Jan Kempdorp and then diverted through gravitational

---

[95] NASA/ BAO/ Vol. 5760, Ref. H128-1665, Letter by the Chief Bantu Affairs Commissioner, Complaint Sidwell Mankuroane, 26 January 1963, p. 154.
[96] NASA/ BAO/ Vol. 5760, Ref. H128-1665, Letter by the Chief Bantu Commissioner, Voorgestelde Stigting en Ontwikkeling van Taung Bantoestat: Distrik Taung, 1 Oktober 1964, p. 181.
[97] PL Breutz, The Tribes of The Districts of Taung … (1968), p. 43.
[98] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 34-35, 77-78 & 97.
[99] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 98.
[100] NASA/ BAO/ Vol. 3/4832, Ref. A14/12/3/T4, Ontwikkelingswerk. Watervoorsiening. Damme. Brief aan Die Sekretaris van Bantoe-Ontwikkeling-en-Administrasie, Sekretaris van Landbou, Gevare van toeslikking: Spitskopdam, 14 November 1973.
[101] J Jordaan, The Civil Engineering Aspects of Improvements to The Vaalharts Water Scheme, *Civil Engineer in South Africa,* 2(3), 1994, pp. 21 & 23.

flow through a series of canals to the tributary Harts River (see Map 4-4). Its 1,176 km of canals supply water to 39,820 ha of licenced farmlands.[102]



Map 4-4: Rivers and canals providing water to the scheme[103]

This allows the distribution of water throughout the scheme before it finally returns to the Vaal River. The north canal is the area that feeds into the Taung Irrigation Scheme distributing water to three receiving dams which in turn feed water to smaller holdings dams (Dams 1, 6, & 7 – see Map 4.3) throughout the Taung region. These receiving dams are each controlled by a water bailiff charged with distributing the correct amount of water to the smaller dams and pump houses that applied for it. Each pump house could support three to six pivots.[104] As such, they must always check dam levels. This process largely ensued from the 1970s after the success of an experiment in which farmers were allocated 10ha plots of land, a project elaborated on in more detail in the next section as an agricultural initiative in the Bophuthatswana era.[105] Currently, farmers log their requests for water and receive the amount required from the receiving dams, a process that has been monitored and controlled by the government-funded Vaalharts Water User Association (VHWUA).[106] Though the maintenance and management of the scheme was transferred in 1994 from Agricor to the Department of Agriculture of the North-West

[102] WM Pretorius, Vaalharts … (MA, NWU, 2018), p. 6.
[103] Though the map already indicated the Taung dam in this image, the focus for this section remains on the VHIS section below Taung. WM Pretorius, Vaalharts … (MA, NWU, 2018), p. 31.
[104] JE Kokome, Evaluation of Irrigation … (MA, Central University of Technology, 2004), pp. 10; 18.
[105] JP Klopper, Mainstreaming of Smallholder Irrigators … (MA, UFS, 2009), p. 51.
[106] SPA, OA-18, De'Dre Titus, Vaalharts Water User Association, Water Bailiff at Taung station, 6 October 2022.

Province, the VHWUA, in the end, took over these responsibilities in 2003 from the Department of Water Affairs (DWAF). It was noted that in 2004 the arrangements for free water from the government continued, though at a calculated rate of 7,700 + 10 percent = 8,470 m^3/yr/ha on an area of 6,424 hectares which equates to 54.4 million m^3/yr.[107]

4.3.3 A growing sector: Agricultural progress in Taung since the initial Taung Irrigation Scheme, spanning the mid-20th century to the Bophuthatswana era (1977-1990)

Despite the progress in irrigation agriculture by the mid-1960s, Breutz observed a limiting factor for further development - the lack of education, both formal and in terms of agricultural practices involving irrigation farming.[108] Due to this, two educational institutions were established in 1965 in Taung, respectively named the Taung Agricultural School and the Taung Agricultural College.[109] The institutions were set up to train future agricultural advisers and officers as potential governmental appointees, but both had a vested interest in building capacity in irrigation agricultural practices. Both institutions also benefited from the VHIS to provide them with water as part of their departmental arrangements at that stage (pre-1994). This was observed to have changed when the new dispensation after 1994 classified the two institutions within different departmental bodies (Department of Higher Education and the Department of Basic Education). The school could therefore no longer benefit from water from the VHIS arrangements and had to make other plans for funding for water.[110]

As mentioned in Chapter Two, in his report in 1910 Kanthack already purported the importance of community involvement in irrigation projects.[111] It was therefore apt that in the latter 1970s, several primary and secondary co-operatives were established as a means to help manage the different sections in Taung benefitting from the initial irrigation

---

[107] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards into Water User Associations in South Africa: Case Studies of the Lower Olifants, Great Letaba and Vaalharts Water User Associations, (Working Paper 72), (International Water Management Institute: Colombo, Sri Lanka, 2004), pp. 50-53; WM Pretorius, Vaalharts … (MA, NWU, 2018), pp. 6, & 50.

[108] PL Breutz, *The Tribes of The Districts of Taung* … (1968), p. 72.

[109] PL Breutz, *The Tribes of The Districts of Taung …* (1968), p. 67; As described in: NASA/ BAO/ Vol. 5385, Ref. H62/7/1/4, Dept. Bantoe Administrasie en Ontwikkeling, Bantoe Landboukollege, ca.1961, p. 134.

[110] SPA, OA-09, Mr Joseph Mapunyana, Teacher at Taung Agricultural School, 1 October 2021.

[111] FE Kanthack, Irrigation Development…, *Agricultural Journal of the Union of South Africa*, 36(5), 1910, p. 533-535.

negotiations.[112] Despite this, once trading and mining-related economic activities became a feature of the region in the 19th and 20th centuries, the availability of labour was problematic on occasion, even in the agricultural sector. Much of this was not just due to seasonal work in other areas, but also to migrant labour required in mines towards the east of the country. These labourers also found a more stable income in the diamond mines towards to western regions of the province during the 1970s.[113] According to Du Toit's statistics in his 1985 study, of the 1150 registered farmers of the cooperatives, only about half were actively involved in agricultural practices year-round.[114] Below are some possible explanations.

As mentioned earlier, the sizes of initial farms allocated to farmers in the Taung Irrigation Scheme (dating from 1939) were said to be between 1.5 and 1.7ha. However, between 1974 and 1975 in Mokassa 200ha of land was put aside for an irrigation project where some 20 farmers were given plots of 10ha each. This initiative was managed by the Bantu Investment Corporation of South Africa up to 1981.[115] The plots were put under centre pivots and overhead sprinklers, each pivot serving 40ha, thus helping four farmers simultaneously.[116] They were further introduced to a rigorous crop rotation schedule and all the support they may need in terms of education, planning, and market information. Between 1978 to 1985, it was noted that with the guidance of the Lesedi Cooperative, farmers were following a seasonal two-year crop rotation cycle. In the first and second summers maize and cotton were respectively produced. While the first winter rotation consisted of wheat, the second was held fallow as part of the field recovery process.[117] The success of this project was to determine the revitalisation of the Taung Irrigation Scheme with the support of the newly established Agricor (a parastatal agricultural

---

[112] SPA, OA-26, Mr Ian Smit, Retired employee of Department of Lands, Hartswater, 18 April 2024.
[113] JW Hudson, Responses to Climate Variability of The Livestock Sector in The North-West Province, South Africa (MA, Colorado State University, 2002), pp. 19-20.
[114] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), p. 13. Additionally, consider, for example, the figures given by Roodt in 1985 on his study in the Ditsobotla region not far from Taung. They had a farming population of 2,640 full-time farmers and 2,550 part-time farmers of which the latter would most likely leave the women behind to maintain the home and farming activities. *See* JJM Roodt, Capital penetration and rural development in Bophuthatswana: A case study of the Ditsobotla Dryland Projects (MA, Wits, 1985), p. iii.
[115] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), p. 33.
[116] JP Klopper, Mainstreaming of Smallholder Irrigators … (MSc, UFS, 2009), p. 51.
[117] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985) p. 83.

agency of the Bophuthatswana government)[118] and Lesedi Cooperative to enhance agricultural practices in the irrigated crop industry within Bophuthatswana. Their support was imperative since the Batlhaping farmers did not own the land and were thus dependent on the structures, especially for financial assistance. Subsequently, the project was expanded and by 1982 the more than 1,500 farmers who were originally allocated land, were reduced to 411 farming families. Those put off the farming lands had to find employment elsewhere, such as in the mining industry or surrounding farming districts as labourers.[119] They likely also had to move physically and most probably did so to the town area of Taung as their homes were now part of the larger farming plots. This is another likely reason for the discontent hardly mentioned in archival sources. According to a report by Lesedi Secondary Cooperative (as explained by Du Toit), the 411 farmers who remained part of the scheme in 1982 henceforth operated under sprinkler irrigation systems under the guidance of eight primary co-operatives and one secondary co-operative.

Cooperatives were established after 1977 with the passing of the "Koöperatiewe Wet van Bophuthatswana (Wet 20 van 1977)", again as mentioned as a means to enhance the Bophuthatswana governmental goals. Their areas of support included Tsidiso Primary Cooperative (Jim Molala area); Ikageng Primary Cooperative (Molala) area; Bosele Primary Cooperative (Collin Moss); Boiteko Primary Cooperative (Bogosing); Rethuseng Primary Cooperative (Mokassa); Ikhutseng Primary Cooperative (Smous); Ipelegeng Primary Cooperative (Mokgareng); Are Ageng[120] Primary Cooperative (Pudimoe), (once again see Map 4.3 for their area of service).[121] Each with an average annual income of R1,000.[122] Lesedi Cooperative was already registered in 1978. It was a secondary

---

[118] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards ... (Working Paper 72, 2004), p. 50.

[119] JP Klopper, Mainstreaming of Smallholder Irrigators … (MSc, UFS, 2009), pp. 51-52. It is noted though that in the Working Paper 72 report the number of farmers put off their land were written as "around 178", a number that does not make sense when considering the original number of farmers allocated land based on the negotiations of 1.5-1.7 ha plots. *See* J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards ... (Working Paper 72, 2004), p. 50.

[120] Sometimes spelled *Areageng*.

[121] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 12-13; A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 99; JP Klopper, Mainstreaming of Smallholder Irrigators … (MSc, UFS, 2009), pp. 5-6.

[122] PG Pienaar, Water for Agriculture, Unpublished paper, CSIR, ca. 1986, (online source, accessed: 29 March 2020, https://www.ircwash.org/sites/default/files/71CSIR86-3037-2.pdf), pp. 8-9.

cooperative for which seven new members were elected annually in a general meeting.[123] These members were chosen from the eight primary cooperatives, which combined, formed the Lesedi Secondary Cooperative. It was known to locals as the Lesedi Trust as it had no legal status.[124] The structure of the Lesedi Cooperative was such that the general manager had three sub-managerial positions that reported to it, namely Agricultural Production, Marketing, and Administrative/Financing. The first position's activities were directly financed by the farmers who were supported by the Department of Agriculture of the Bophuthatswana government in terms of training and support for the optimal use of irrigation water. Five project leaders from the primary cooperatives were employed in this role. The second sub-managerial committee was responsible for sourcing agricultural supplies and the marketing of produce. The last was responsible for all financial matters, including timely provision, collection, receipt, allocation and financial reporting. The secondary cooperative thus also played the role of financer to farmers of especially maintenance of operational matters and electricity.[125] By 1983 the scheme showed an improved average annual income from R1,700 to R6,000 for farmers.[126]

Additionally, to the benefit of the nearby South African market was the advantage of a dedicated marketer which was found in the Lesedi Cooperative. This was all under a banner of "controlled" agricultural produce ("*Beheerde landbouprodukte"*),[127] which entailed that their produce could be sold off to South African markets at a competitive market price. The crops included in this arrangement, however, were limited to wheat, maize, and oilseeds. Other crops such as cotton, lucerne, peas, roughage, and vegetables did not form part of this arrangement, and farmers needed to exclusively rely on the co-operatives to advise them in planting the correct crops for the ideal markets available.

Furthermore, elaborating on the management of water allocation in the schemes, Dam 1 supplied water directly to the Mokassa/ Rethuseng area through four small holdings dams to the Bosele area. The former is supplied through gravity feed and overhead sprinklers.

---

[123] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985) pp. 12, 16, 22-23.
[124] JP Klopper, Mainstreaming of Smallholder Irrigators … (MSc, UFS, 2009), p. 51.
[125] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985) pp. 53-54.
[126] Mahikeng Provincial Archive (MPA), Mahikeng, Republic of Bophuthatswana, Five Years of Independence, Republic of Bophuthatswana, 1977-1983, pp. 19-21.
[127] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985) pp. 61-63.

It is an area that has been developed since 1975 on only 200ha at first but was expanded by a further 875ha in 1984 and put under overhead (drip/micro) sprinkler irrigation. The Collin Moss area has also been served by centre pivots supporting 120ha of land since 1982. The costs for these developments amounted to R21,18 million.[128] Dam 6 supplies irrigation water to Tshidiso by having water pumped to three holding dams, respectively named Jim Molale Middle, South, and North. Together they supply water to 14 centre pivots. The Jim Molala and Molala irrigation areas were developed between 1980 and 1981, and a total area of 680ha is served with centre pivots. The area of Pudimoe, and more specifically Are Ageng are served by Dam 7. Due to it being the lowest area and possibly being the furthest from the scheme, it often struggled with low water allocation. It often does not receive water for up to three days. Serving water to 16 centre pivots since 1983 with a total of 640ha thus comes with great strain on the system during such times. The area of Ipelegeng, however, was directly served by three holding dams named Mokgareng North and South as well as the Smous Dam. Each of these serves six centre pivots of 20ha. The Mokgareng and Smous areas were respectively added to the irrigation areas in 1978 and 1980. The former made use of flood - (130ha served) and centre pivot (217ha served) irrigation. It is noted that each of these areas formed part of a primary cooperative.[129] However, further expansion in the field of irrigation was limited due to several factors. Of the approximately 10,000ha of land in Bophuthatswana available for irrigation, only 3,500ha of the available 6,000ha in Taung itself could be developed by 1985.[130] A significant reason for this was the limited availability of irrigation water. According to Seshoke, De Lange and Faysse the flow of water to Taung is severely limited during times of drought such as in 1983-1987 when farmers only received 60% of the usual amount.[131] Du Toit concurs that water infrastructure, instead of land, was the limiting factor for growth in the sector and why the careful management of the Taung Irrigation Scheme as part of the VHIS is so important.[132] More than thirty years later, the author observed the same sentiments from local agriculturalists and relevant role players

---

[128] A Manson, The Batlhaping of The Taung District …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 99.
[129] JE Kokome, Evaluation of Irrigation … (MA, Central University of Technology, 2004), p. 19; CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), p. 35.
[130] JE Kokome, Evaluation of Irrigation … (MA, Central University of Technology, 2004), p. 17.
[131] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards ... (Working Paper 72, 2004), pp. 48, & 52.
[132] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 4, & 20.

as none complained about a lack of water, but rather a lack of infrastructure to get the water to them, which in turn was caused by a lack of funds.[133] Additional to the lack of infrastructural development by 1985, was the findings shared in a report by Agricor in 1990 that a portion of the land to the north of Taung as negotiated in the 1939 agreements were still not officially occupied by Batlhaping.[134] Though this area was earmarked for pastoralism, the report also highlights the disruptive impact resettlement strategies had on the Batlhaping due to the implementation of various initiatives as part of the VHIS and betterment planning.

Further support systems that were put in place to assist in this project (among others) were the initiation by the Department of Agriculture (1977) in Bophuthatswana of the Agricultural Development Corporation (AGRICOR[135]) in 1978 as a means to help support the growth of the industry by promoting human and agricultural resources.[136] Its goals were for instance to establish sound agricultural practices that were in line with conservation principles and in so doing establish viable and sustainable agricultural communities (very much in line with the betterment strategies that involved western methods of cattle herding among others).[137] It had four main goals combined into one term: *Temisano* (or 'farming together') as the produce was first and foremost to be used to feed their own (Bophuthatswana) nation.[138] Two areas of speciality were the financial support it rendered and the sourcing and hiring of experts for the completion of agricultural projects that also train local producers. Both these roles were taken over by the cooperative from the previous South African Economic Development Cooperative after 1979. Together with the Lesedi Cooperative centre pivot – (244 farmers on 10ha plots),

---

[133] SPA, OA-04, Mr Tebogo Thapiso, Cattle herder, Manthe, 30 September 2021; SPA, OA-06, Mr Monnapula Senokwane, Vegetable farmer, Taung (Pudimoe), 30 September 2021; SPA, OA-19, Mr Joseph Mothibi, Rrangwane to Kgosi Mothibi, Batlhaping Ba Ga Mothibi Council Offices, 7 November 2022.

[134] NASA/ BAO/ Vol. 4/2459/ Ref. GB6/5/2/1/T4, Grondsake - Verkryging en Vervreemding van Trustgrond: I Schmidt, Dryharts Tribal Ranch, The Dynamics of Livestock Farming, Report 2: The Historical Context Within Which This Development is Taking Place – With Special Reference to Land, Agricor, January 1990, pp. 3-21.

[135] In most sources its acronym is used as *Agricor*, instead of AGRICOR. The former us also used in this study.

[136] JH Drummond, Rural Land Use …, G*eoJournal*, 22(3), 1990, p. 337; ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (eds.), *Taung in History …* (2024), p. 31.

[137] MPA, Mahikeng, Republic of Bophuthatswana, A Nation on The March: Bophuthatswana, 1977-1987, Ten proud years, p. 76.

[138] C Naumann, "Where We Used to Plough": Environmental Governance, Rural Livelihoods and Socio-Ecological Change in South Africa, (LIT VERLAG: Zurich, 2017), pp. 189-190.

sprinkler irrigation – (139 farmers on 7.5ha plots), and flood irrigation farming (26 farmers on 7.5ha plots) were expanded with the 411 newly settled farmers between 1978 and 1988.[139] Costs inferred from Agricor and Lesedi at that stage were recovered simultaneously as "irrigation costs" on an annual basis and usually done so when funds for each harvest were collated. Where Agricor mainly provided support on the operational side, Lesedi later largely functioned as a financer.[140] One of the projects in which the former also assisted for example, was the provision of increased storage capacity with setting up two large grain silos for an additional 190,000 tons of harvested grain.[141] It also encouraged the move to more modern methods of bagging grain, rather than the traditional *sefala*-method mentioned in Chapter Three. Additional support came just before 1980 when the government of South Africa established permanent water commissions with several of the governments of the independent homeland states, one of which was in Bophuthatswana. This was done as a means to collaboratively work towards providing solutions to their respective water authorities on problems relating to, among others, water supply.[142]

4.4 Concluding thoughts

In Chapter Three, the context of the Taung region was provided with emphasis on the geography and the people who have found themselves within its confines. Chapter Four built further on that contextual analysis by specifically focusing on the irrigation agricultural landscape of the Taung district as part of the Bophuthatswana government. To do this, it was important to highlight the various means of water procurement by the Batlhaping and the impact of practices by the other groups that settled in the area, especially as far as the government involvement played a role. The significance of the chapter lies in the need to understand how people interacted with their surroundings to survive. Adapting to new forms of securing livelihood was often marked by the ruling government and their motivations, as seen especially after the appearance of European rule and their control of the movement and placement of the Batlhaping. Adapting to

---

[139] JP Klopper, Mainstreaming of Smallholder Irrigators … (MSc, UFS, 2009), pp. 51-52.
[140] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 53-54.
[141] MPA, Mahikeng, Republic of Bophuthatswana, A Nation on The March: Bophuthatswana, 1977-1987, Ten proud years.
[142] JWN Tempelhoff, *South Africa's Water Governance …* (2018), p. 275.

betterment strategies saw the establishment of fenced farms and irrigation projects derived from negotiations enhancing the success of the adjacent Vaalharts Irrigation Scheme (VHIS) dating back to the 1930s. Its spill-over project in the form of the initial Taung Irrigation Scheme and the Mayeng Irrigation Scheme was also successful, but once more dictated the movement of people as government authorities saw fit. As such, it is evident that this success often came at the price of losing much of the locals' traditional forms of agricultural practices, especially in the keeping of cattle, not to mention their form of livelihood. Endeavours towards more commercial forms of agriculture ensued with the establishment of educational institutions set up to train future agriculturalists and agricultural administrators. Additionally, co-operatives assisted in the management of the sector by supporting farmers, if not financially, with key market-related knowledge. This chapter aimed to give a contextual background to the agricultural landscape within Taung as a precursor to the initiative of furthering agricultural goals within the region with the construction of the Taung Dam Irrigation Scheme as will be reported on in Chapter Five.

CHAPTER 5 IRRIGATION HISTORY IN THE MAKING: THE CONSTRUCTION AND MANAGEMENT OF THE TAUNG DAM IRRIGATION SCHEME (1977-2023)

5.1 Introduction

The Taung region has a long history within the agricultural sector as captured in Chapters Three and Four. It is evident from these chapters that Taung had much potential for agricultural development, but that its full capacity is yet to be reached. Up to 6,424ha of potential agricultural land is available, of which barely more than half (3,700ha) is developed and benefiting from the current water supply from the Taung Irrigation Scheme section as part of the Vaalharts Water User Association (VHWUA).[1] It is for this reason that the history of the undeveloped Taung Dam Irrigation Scheme and the endeavours embarked on by various of its stakeholders has become a point of interest. This is done as a means to answer the research question relating to the key motivators that served as the inspiration for the planning of the Taung Dam Irrigation Scheme that was built and completed before the advent of the democratic elections in 1994. In this chapter, attention is drawn to Taung's further development in the agricultural sector as the president of Bophuthatswana, Mr LM Mangope, earmarked the region for irrigation agriculture development in 1977. Focus is drawn to Mangope's key motivators as economic and political goals. The historic agricultural successes enshrined in the original Taung Irrigation Schemes (discussed in Chapter Four) are also of importance as without these the construction of the Taung Dam would be suspect. These suspicious notions are mostly linked to illicit diamond mining activities in the surrounding regions which also feature as a possible motivation according to some sources. However, regardless of the latter, some would still argue for the scheme to be implemented. The rationale behind the location of the Taung Dam therefore becomes a matter of interest which spills over into the construction and management history of the Taung Dam from 1990 up to 2023. All

[1] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards into Water User Associations in South Africa ... (Working Paper 72, 2004), pp. 48-49.

these points are discussed to establish an understanding of the key motivators behind the construction of the Taung Dam Irrigation Scheme.

5.2 Key motivators for the establishment of the Taung Dam Irrigation Scheme

Though this study is not a political analysis of decisions made between Bophuthatswana and the South African government, it is noted that the homeland state had to operate as a political state as it endeavoured towards further independence. With the Harts River's "international" status (in years before 1994) due to it being shared by Bophuthatswana and South Africa, negotiations towards any development become of interest.[2] The section below follows some key motivators surrounding the need for another dam within the Bophuthatswana state, especially considering it reportedly already benefited from nine other dams, some of which had existing international connections.[3]

5.2.1 Economic and political growth through the agricultural sector for the Bophuthatswana Homeland state (1977-1990)

Chief Lucas Manyane Mangope was the first (and only) president of the independent state of Bophuthatswana. He was perceived by some as an autocratic and dominating leader, which often caused conflict among the Batswana chieftaincies in his homeland state.[4] However, under his leadership and with the assistance of the South African government, Bophuthatswana's development has been exponential since its independence in 1977. It was considered one of the most economically successful 'national states' in its time.[5] Similar to the South African government's attempts after the depression of the 1930s and seeking to strengthen its Afrikaner government after gaining its independence from Britain in 1961,[6] the Bophuthatswana government sought to also

---

[2] L van Vuuren, *In the Footstep of Giants …* (2012), p. 159.

[3] The source mentions a dam on the Marico River with whom the Bophuthatswana had a 20-year agreement with Botswana in providing them with water. *See* Anon, Bophuthatswana's Living Gold, *Bophuthatswana Pioneer*, 14(1), Feb/Mar 1992, p. 11.

[4] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (Eds.), *Taung in History …* (2024), p. 33.

[5] Anon, Bophuthatswana, *African Insight*, 14(2), Jan. 1984, p. 133; J Cowley, & A Lemon, Bophuthatswana: Dependent Development in a Black 'Homeland', *Geography*, 71(3), Jun. 1986, p. 252.

[6] L Thompson, *A History of South Africa*, (2014), pp. 187-189; H Giliomee, Afrikanernasionalisme, 1902-1924, *in* F Pretorius (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 280-281; H Giliomee, 'n "Gesuiwerde" Nasionalisme, 1924-1948 *in* F Pretorius (ed.), *Geskiedenis van Suid-Afrika …* (2012), pp. 295-304.

further its growth after 1977 in an attempt to extend its independence (especially economically) from South Africa. This is not a unique stance for nations endeavouring to improve their economic condition. There are however various aspects that play a role especially in how agricultural development is to support the growth in other sectors.[7] This was attempted through various projects in the mining, tourism, and agriculture industries, with major investments in projects such as water (irrigation) schemes.[8] The specific focus on the agricultural sector for sustainable economic growth and development was captured in a memorandum to the executive council from the Department of Agriculture. Listed among the initiatives to enable their developmental goals were agricultural schools and colleges as part of their endeavours to enhance research and training, but also to establish agro-industries, such as those found in Israel's kibbutz and China's communes.[9]

Like in many developing nations,[10] one of the cornerstones for development was to be within the agricultural sector with irrigation farming playing an important role.[11] For the Bophuthatswana government, the area chosen to be ideal for this venture was Taung, partly because a needs analyses done before the completion of the dam indicated that the people in this region mentioned water as a necessity for development (though the access to this report proved allusive).[12] The region also already benefited from an existing irrigation scheme and was geographically well placed (consider Chapter Three's spatial orientation). It was said to have the potential to develop its scheme (or expand the existing one) for the surrounding agricultural community. According to Van Eeden, the 1980s was an era of socio-economic upliftment for the people of Taung, with initiatives especially in

---

[7] WH Nicholls, The place of agriculture in economic development, *in* C Eicher, & L Witt, *Agriculture in Economic Development* (McGraw-Hill Book Company: New York, 1984), pp. 11-16.

[8] SAWHAR, PRCDPR- 21-018, AR Turton *et al*, 2004. *A Hydropolitical History of South Africa's International River Basins* (WRC Report No. 1220/1/04, Gezina), pp. 51-52; GME Leistner, Bophuthatswana: Economic Development – Problems and Policies, *South African Journal of African Affairs,* (2), 1977, pp. 135-136, 138-141; LM Mangope, Mangope on Progress in Bophuthatswana, *Africa insight*, 12(2), 1982, pp. 68, 70-72; MJ Roodt, Bophuthatswana's State Farming Projects: An Aggro Business? *Indicator SA*, 3(1), 1985, pp. 7-9.

[9] MPA, Mafikeng, Bophuthatswana, Office of the President, 206, OP 6/16/2001, Department of Agriculture and Forestty, Routine Enquiries, Memorandum to the Executive Council, 22 November 1978, pp. 4-5.

[10] WH Nicholls, The Place of Agriculture in Economic Development, *in* C Eicher & L Witt, *Agriculture in Economic Development* (McGraw-Hill Book Company: New York, 1984), pp. 11-16.

[11] JH Drummond, Rural Land Use …, G*eoJournal*, 22(3), 1990, p. 335; CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PU vir CHO, 1985), p. 2.

[12] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.

the allocation of water taking headway.[13] However, some decisions by Mangope did not instil trust within the nation. One particular incident that left people traumatised for decades thereafter, was the donkey massacre of 1983.[14] Up to 10,000 donkeys were killed daily throughout Bophuthatswana, and though Jacobs' study summarised the effect of this decision in Kuruman, the other regions (such as Taung) likely experienced it in much the same manner.[15] Contrary to Mangope's development plans, many believed it had a rather detrimental effect on the local population's economic well-being as donkeys were used as transport and therefore a key element to their economic activities.[16] The reason for highlighting this incident speaks to the way governmental initiatives were implemented. The effects of their approach in the resettlement processes are captured in Chapter Six.

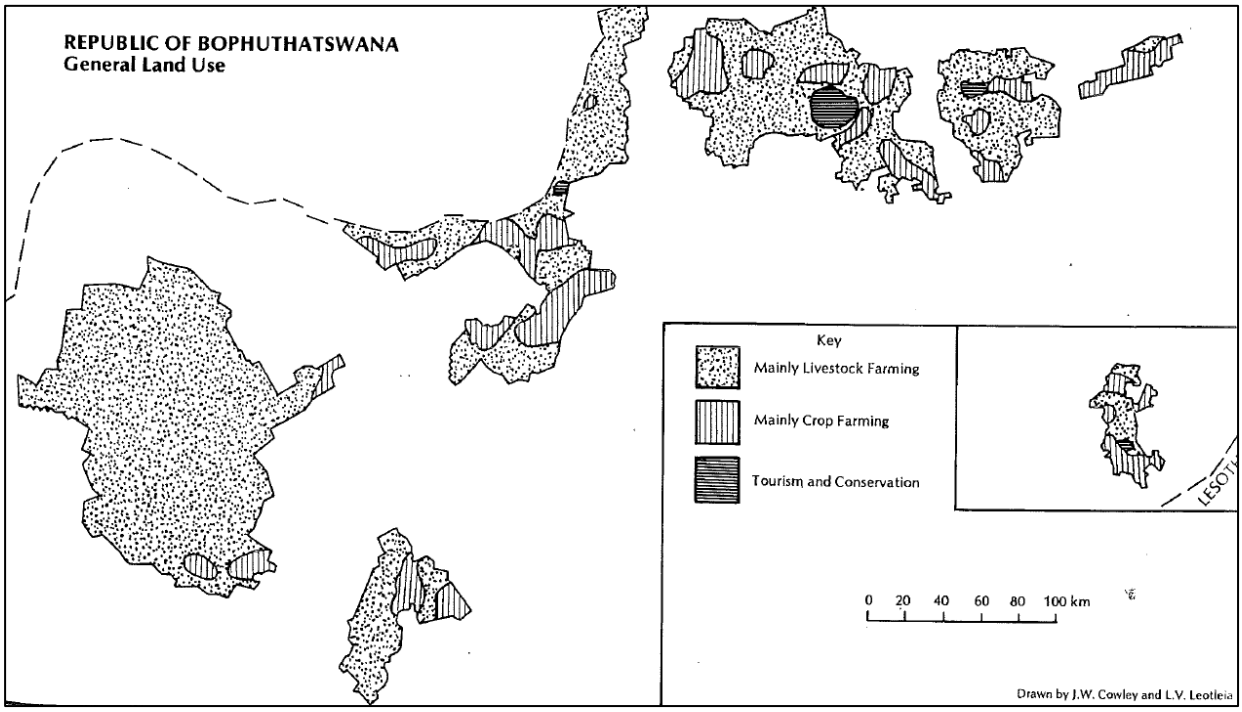
5.2.2 A brief outline of the agricultural success before 1989 in the Taung Irrigation Scheme as motivation[17]

According to Klopper, smallholder irrigators in South Africa consist of four categories, which include farmers in irrigation schemes (comprising approximately 46,000 to 49,500ha in former homeland areas); independent irrigation farmers; community gardeners; and home gardeners.[18] Though Taung was still an area generally known for its livestock farming by the 1970s, and its limited crop cultivation mainly on a communal level, there was reason for hope for further growth.[19] Firstly there was the continued use of the existing Taung Irrigation Scheme (from the 1939 negotiations with the VHIS) that was further absorbed into the Bophuthatswana economy between 1977 and 1994.[20]

---

[13] ES van Eeden, A Brief Topography …, *in* ES Van Eeden, & A Manson (Eds.), *Taung in History …* (2024), p. 33.
[14] A Manson, The Tlhaping of The Taung …, *in* ES Van Eeden, & A Manson (Eds.), *Taung in History …* (2024), p. 97.
[15] NJ Jacobs, The Great Bophuthatswana Donkey Massacre, *American Historical Review,* 106(2), 2001, pp. 485–507.
[16] MPA, Mahikeng, Republic of Bophuthatswana, Office of the President, Agenda and Minutes, Regional Development Advisory Committee, Taung District Development Plan, 15 Jan 1988-27 to Feb 1990, p. 1.
[17] This section only briefly touches on some of the successes of the Taung Irrigation Scheme since it was elaborately discussed in Chapters Three and Four.
[18] JP Klopper, Mainstreaming of Smallholder Irrigators … (MSc, UFS, 2009), p. 3.
[19] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PU vir CHO, 1985), p. 2; J Cowley & A Lemon, Bophuthatswana ..., *Geography*, 71(3), 1986, p. 254.
[20] SS Tekana, & OI Oladele, Impact Analysis of Taung Irrigation Scheme on Household Welfare Among Farmers in North-West Province, South Africa, *Journal of Human Ecology*, 36(1), 2011, p. 69.

Since its inception, it contributed to small-scale farmers as a means to alleviate poverty, enhance food security, boost economic stability and growth, expand job opportunities and contribute to household welfare.[21] In the 1978/1980 financial year the annual report of the Department of Works and Housing of the Bophuthatswana Government reported on the progress made with the upgrades to the existing Taung Irrigation Scheme. According to the report installed extensions already enlarged the scheme's capacity from 2,000ha to 3,900ha with mechanised sprinkler irrigation. The cost of the project then amounted to R1,M and should have been completed by September of 1980.[22]



Map 5-1: Bophuthatswana land use distribution by 1987[23]

The project was well in line with the development goals noted in a memorandum by the Department of Agriculture in 1979 as they lamented the need to develop more of the

[21] ES van Eeden & M Diedericks, Taung Region's Local Governance …, *in* ES Van Eeden, & A Manson (Eds.), *Taung in History* … (2024), p. 122.

[22] MPA, Republic of Bophuthatswana, Office of the President, Department of Works and Housing, Annual Report, 1979-1980, p. 27; According to Crause R 1 mil in 1980 equals R 35,181,818.18 on 16 Nov 2024 according to inflation rates. *See* R Crause, Inflation Adjustment Calculator, [online source, accessed: 16 Nov. 2024, https://inflationcalc.co.za/?date1=1980-01-31&date2=2024-11-16&amount=1000000].

[23] MPA, Office of the President, Republic of Bophuthatswana, A Nation on The March, Bophuthatswana - 1977-1987 - 10 Proud years, 1987, p. 77.

surface and groundwater resources in Bophuthatswana.[24] Since 1977 crop farming production is said to have doubled in four years as reportedly 138,000 tons of maize were harvested in 1981, producing more than their domestic consumption. This allowed for the potential of exports and further economic growth.[25] These were largely produced under the Taung Irrigation Scheme in Taung and the Tsholofelo Irrigation Scheme in Zeerust.[26] Trade opportunities thus became far more viable, and agriculture further excelled towards other development goals. This success was also attributed to Bophuthatswana's economic ties with South Africa which allowed for easier access to markets.[27] By 1983 the scheme showed a further improved average annual income of R1,700 to R6,000 for farmers.[28] However, expansion in the field of irrigation is limited due to several factors. Of the approximately 10,000ha of land in Bophuthatswana available for irrigation, only 3,500ha of the available 6,000ha in Taung itself could be developed by 1985.[29] This was with limited availability of irrigation water and the majority of the land area in Taung still being dedicated to livestock farming by 1987. Du Toit concurs that water infrastructure, instead of land, is the limiting factor for growth in the sector and why the careful management of the Taung Irrigation Scheme as part of the VHIS was so important.[30] Tekana and Oladele's study of the impact of the Taung Irrigation Scheme speaks to its importance for the alleviation of poverty and food insecurity for the surrounding Taung communities as it contributes to household welfare.[31] Dryland crop production was encouraged as the full potential of the initial Taung Irrigation Scheme was still not achieved due to this lack of installed water supply infrastructure. With the Taung Dam Irrigation Scheme, it was hoped the additional water could build the agricultural sector of

---

[24] MPA, Office of the President, Republic of Bophuthatswana, 206, OP 6/16/2001, Department of Agriculture and Forestry, Routine Enquiries, Memorandum to the Executive Council, 22 November 1978, pp. 1-6.
[25] JJM Roodt, Capital Penetration and Rural Development in Bophuthatswana: A Case Study of the Ditsobotla Dryland Projects (MA in Faculty of Arts, University of Witwatersrand, 1985), p. 1.
[26] MPA, Office of the President, Republic of Bophuthatswana, A Nation on The March, Bophuthatswana - 1977-1987 - 10 Proud years, 1987, p. 74.
[27] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 61-62.
[28] MPA, Mahikeng, Republic of Bophuthatswana, Office of the President, Five Years of Independence, Republic of Bophuthatswana, 1977-1983, pp. 19-21.
[29] JE Kokome, Evaluation of Irrigation … (MA, Central University of Technology, 2004), p. 17
[30] CA du Toit, 'n Koste Analise van Besproeiingsboerdery … (MA, PUvCHO, 1985), pp. 4 & 20.
[31] SS Tekana, & OI Oladele, Impact Analysis of Taung Irrigation Scheme …, *Journal of Human Ecology*, 36(1), 2011, pp. 69-77.

Bophuthatswana.[32] Despite the noted limitations to the expansion of irrigation agriculture in the existing Taung Irrigation Scheme, according to the Water Corporation of Bophuthatswana's proposed policy statement in 1982, no new schemes (specifically irrigation) would be considered without a comprehensive investigation.[33] This was linked to the scarcity of natural water resources in the homeland and the socio-economic benefit that any additional schemes had to prove their viability and worth the risk of investment. Though the author could not readily trace the results of this thorough investigation, the prerequisites for the Taung Dam Irrigation Scheme includes considering the possibility of one being completed in the 1980s and proving a viable socio-economic endeavour for the government of the time to pursue. Indeed, very little to no information on the planning of the Taung Dam Irrigation Scheme could be found in the sources of the Office of the President dating from the 1970s to 1990.

5.2.3 Suspicions of diamond activity since the inception of the Taung Dam Irrigation Scheme

Rumours of diamond activity may be called conspiracy theories at this stage since little proof exists surrounding the origins of some of the speculations surrounding the connection between these speculations and the reason for the construction of the Taung Dam. One such rumour that was shared among some of the interviewees was that the dam was built by the Bophuthatswana (or more specifically the Mangope) government as a means to cover the area and thus prevent any further exponential alluvial diamond mining. Some sources claim that the Bophuthatswana president LM Mangope himself, was in business with conglomerate companies such as the De Beers Mining magnate at the time that negotiations for the end of apartheid were underway.[34] The dam wall of the Taung Dam Irrigation Scheme was completed before the end of apartheid, and in addition to the latter statement the *Kgosi* Motlhabane believes that should the Grootte Schuur negotiations during the time of extreme political turmoil have ended differently (presumably no end to apartheid) the suggested partnership between Mangope and the

---

[32] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.
[33] MPA, Mahikeng, Republic of Bophuthatswana, 321, 11/1/20, Office of the President, Departments. Water Corporation (Annual reports, Minutes), Draft Policy Statement, Oct 1982, pp. 5-6.
[34] SPA, OA-24, *Kgosi* Nyoko Motlhabane, Ba Ga Maidi Tribal Offices, Manthe, 17 April 2024.

De Beer company would have resulted in further mining initiatives where the dam has now submerged the area. No official connection between these parties was however investigated.

Though documentation about the planning of the Taung Dam Irrigation Scheme has proven difficult to come by, sources referring to feasibility studies and planning that have been completed before construction were found.[35] The same documents that refer to these studies have however largely omitted any mention of potential mining initiatives being hampered by the construction of the dam. This, coupled with the fact that it is only in the 21st century that many of the initiatives to make use of the dam surfaced (see Chapter Six), raises the likelihood that the conspiracy theory in so far as it is covering potential diamond fields could be easily believed by the public. Though it was generally the message received from informal conversations with locals in the area, also consider Mrs Albertina Phutieagae;s testimony in Chapter Three as a worker in the kitchens of miners on the Harts and Kolong Rivers before the Taung Dam.[36] An environmental impact assessment and positive prospecting results would further add to this theory, but not completely confirm it as solid proof between the two involved parties (Mangope and De Beers).

5.3 Site planning of the Taung Dam Irrigation Scheme from the late 1970s to 1990

Politics plays an important role in such large-scale developments and their successful completion, especially considering their dependence on economic investment.[37] Southern Africa has a long history of transboundary water negotiations with its bordering nations, including former homelands such as Bophuthatswana. It is noted in the White Paper J-89 that the Bophuthatswana government negotiated with the South African government regarding the construction of the Taung dam by 1989.[38] As such, the collaboration process between the two governments on the completion of the Taung Dam

---

[35] MPA, Office of the Presidency, 242, 9/5/2(21), Part 1, Taung District Development Plan: Agenda for Minutes, Technical Working Group, Meeting no. 06, 31 January 1990.
[36] SPA, OA-17, Albertina Phutieagae (79) (resident), Ba Ga Maidi Council Office, Taung, 6 October 2022; SPA, Taung research, OA-05, Orapeleng Talakase (41) (Government official), Taung Mall, Taung, 30 September 2021.
[37] J Cowley, and A Lemon, Bophuthatswana: ..., *Geography*, 71(3), 1986, pp. 254-255.
[38] Republic of South Africa (RSA), 1989, Report on the VaalHarts Government Water Scheme (Enlargement and Betterment of The Existing Main Canal System), Pretoria: Department of Water Affairs, Doc. No. WP. J-89, p. 5.

Irrigation Scheme led to a bilateral agreement called the "Taung Dam Agreement", which, according to Turton *et al.* ensued in 1989.[39] Its official report was called the "Agreement Relating to the Construction of the Taung Dam and the Operation of the Dam in Conjunction with the Operation of Certain Other Water Works Between the Government of the Republic of South Africa and the Government of the Republic of Bophuthatswana" and was signed in 1990.[40] However, according to Mr Ian Smit, his department (Department of Lands) already initiated site explorations and land surveys for the Taung Dam in the late 1970s and completed his work in 1980 in the year of his retirement.[41] More than a decade later, in January 1990, reports on a soil survey showed promising results for the feasibility of the construction of the dam.[42] The final area for the construction of the Taung Dam proved ideal, as noted in Chapter One and Three with the spatial orientation of the valley region of the Harts River. It was to be completed in two phases with the first allowing for a capacity of 60 mil m^3 to be enlarged to 90 mil m^3 in a second phase at a later stage. This latter stage was however never completed. At full capacity, its flood line would stretch some 13 km upstream of the Harts River.[43] Access to the dam was also included in its structure with a road of about 12 km connecting from Manthe on one side to Tshokonyane on the other (Taung) side.[44] In the event of large dam construction projects, the hydro-politics involved in the movement of people does not go unnoticed (and is explored in more detail in Chapter Six).[45]

---

[39] AR Turton, R Meissner, PM Mampane, & O Seremo, A Hydropolitical History … (2004), Report No.: 1220/1/04, p. 228; Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.

[40] PJ Ashton, A Earle, D Malzbender, MBH Moloi, MJ Patrick, & AR Turton, A Compilation of All the International Freshwater Agreements Entered into by South Africa with Other States, WRC Report No. 1515/1/06, [online source, accessed: 16 November 2024, https://www.wrc.org.za/wp-content/uploads/mdocs/1515-1-061.pdf], p. 86. The author could not access this source and would endeavour to do so in further articles that may emanate from this research.

[41] SPA, OA-26, Mr Ian Smit, Retiree of the Department of Lands, 18 April 2024.

[42] MPA, Office of the Presidency, 242, 9/5/2(21), Part 1, Taung District Development Plan: Agenda for Minutes, Technical Working Group, meeting no. 06, 31 January 1990.

[43] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.

[44] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.

[45] Not ignoring the need to investigate the claims of such events, an example is the news report by SABC News on the impact of the Taung dam on the people of Kolong, a village now submerged by the dam. *See* L Mothibedi, Over 250 graves remain under a dam in Kolong, SABC News, [online source, accessed: 25 March 2023, https://www.youtube.com/watch?v=FslZrWQc3SQ&list=WL&index=19].

5.4 Constructing and managing the Taung Dam Irrigation Scheme: 1990-2023

The construction of the Taung Dam ensued mid-1990 as the Minister of Water Affairs (Bophuthatswana), Mr TM Tlhabane turned the first sod at the designated space on the Harts River. As briefly mentioned in Chapter One, the dam was planned and built in consultation with the South African Department of Lands.[46] It was designed by EVN Consulting Engineers in the style of a concrete gravity structure, which in essence refers to compacted low-strength roll-crete with mass concrete gravity configuration of which the dam used 110,000m^3, along 25,000m^3 of conventional concrete.[47] This method of construction (adopted from America) was the first of its kind for the Northern Cape[48] and the highest of only five of its kind in South Africa. Most of the material was said to be sourced on site, except for the cementitious materials.[49] Its wall is about 315 m long with a spillway designed to withstand major floods. The construction of the project started in 1990 under the guidance of Savage and Lovemore contractors.[50] In due time a road bridge was constructed across it to improve general access, with the completion of the dam in 1993. The final costs of the dam amounted to R41 million.[51] Once completed at a height of 42 meters and 255 meters across, with a storage capacity of 60 million m^3 it was believed to be enough for the community's irrigated crop farming requirements[52] and was the second largest dam in Bophuthatswana.[53] It was hoped that the dam itself would also become a potential source of revenue with complete architectural development plans for the surrounding areas.[54] It seems from an analysis by Seshoka *et al.* that the dam was to be connected to the existing canal system put in place from the VHIS arrangements, but

---

[46] Smit Personal Archive (SPA), Oral Archive (OA)-26, Mr Ian Smit, Retired employee of Department of Lands, Hartswater: 18 April 2024.
[47] Anon, Taung: A Dam for The People, *Civil Engineer in South Africa,* (2(7), 1994, pp. 11, 13.
[48] It is noted that the dam was never situated in the Northern Cape per se, but the area as part of the VHIS that stretches into Jan Kempdorp was sometimes referred to as part of the Northern Cape as was done in the source.
[49] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.
[50] SAWHAR, ACHA, 38-035, F Hollingworth, & JJ Geringer, Concrete Dams (draft paper), 1993, p. 18.
[51] Anon, Taung …, *Civil Engineer in South Africa,* (2(7), 1994, p. 11.
[52] A Bailey, The Orange-Senqu River Basin Infrastructure Catalogue, ORASECOM Report 001/2013, [online source, accessed: 18 Apr. 2022, https://wis.orasecom.org/content/study/UNDP-GEF/InfrastructureCatalogue/Documents/Reservoirs/Taung%20Dam.pdf], p. 151; Anon, Taung ..., *Civil Engineer in South Africa*. (2(7), 1994, p. 11.
[53] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.
[54] Anon, Taung: A Dam for The People, *Civil Engineer in South Africa,* (2(7), 1994, p. 13.

this was never completed.[55] It was also supposed to be enlarged to accommodate an additional 30 million m^3 capacity, but this was also never completed,[56] likely due to the departmental changes brought by the political changes after 1994 as so many other aspects of the agricultural endeavours were affected (consider Chapter Three).

Figure 5-1: The Taung dam was completed in 1993[57]

In a 1992 article, water was explicitly mentioned as a commodity belonging to the state (then Bophuthatswana government) to be governed by the state. This was because providing water became a national priority for the Department of Water Affairs of Bophuthatswana as water was declared a strategic resource in terms of its National Water

[55] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards ... (Working Paper 72, 2004), p. 50.
[56] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.
[57] Photographer unknown, c.2006, Photo obtained from Mr Ricky Oliphant, Municipal official of GTLM in October 2024.

Plan.[58] A year later, however, the Bophuthatswana Water Supply Authority (BWSA) promulgated a new rural water supply policy.[59] The policy signed over the responsibility for the operation and maintenance of all water supply equipment from the BWSA to each tribal authority. The implementation of the policy ensued in December 1993 and impacted operation costs that would henceforth be payable by the tribal authorities within Bophuthatswana. The money from this would be determined based on the amount of people within each tribal unit. Though it is not explicitly mentioned in this document, it could be assumed that the maintenance costs incurred for the supply of water from the Taung Dam would have likely been shared by the Ba Ga Maidi and Ba Ga Phuduhucwana tribal authorities. Though the documents proving their participation could not be found the source did list the authorities that were yet to sign the agreement, of which their names were omitted. These arrangements were likely null and void after the end of apartheid was announced in April 1994 and the Bophuthatswana government no longer existed. The Taung Dam has since belonged to the Department of Water Affairs (in all its variations over the years).

The Harts River divides the tribal authorities between the Batlhaping Ba Ga Phuduhucwana and the Batlhaping Ba Ga Maidi. According to Batswana custom the water should belong to everyone but features as a contentious issue since it covers the supposed diamond-rich soils. The dam structure, however, belongs to the Department of Water Affairs (DWA, now Department of Water and Sanitation (DWS)).[60] Disputes have since become threefold as possible reasons contributing to the disparity, all of which form part of a complex tri-relationship in its management and utilisation. The Taung dam was built during the era in which the DWA was focusing on dam safety requirements, referred to by Oosthuizen *et al.* as the “lean” years (1987-1994) and the imminent failure years (1994-2003) for dam projects. During the latter era, the DWA had taken over the ownership of homeland dams and was actively looking into their standard of safety.[61] As

---

[58] Anon, Bophuthatswana’s Living Gold, *Bophuthatswana Pioneer*, 14(1), Feb/Mar 1992, p. 10.
[59] MPA, Office of the President, Mahikeng, Republic of Bophuthatswana, 321, 11/1/20, Office of the President, Departments. Water Corporation (Annual reports, Minutes), Bophuthatswana Water Supply Authority: New Rural Water Supply Policy, 21 December 1993, pp. 1-12.
[60] A Bailey, The Orange–Senqu River Basin Infrastructure Catalogue, ORASECOM Report 001/2013 [online source, accessed: 7 June 2024, https://wis.orasecom.org/content/study/UNDP-GEF/InfrastructureCatalogue/Documents/Reservoirs/Taung%20Dam.pdf].
[61] C Oosthuizen *et al.,* Rehabilitation of Dams in South Africa…. 40 Years On, *in* RR Garcia, *et al.* (eds.), *Dam Maintenance and Rehabilitation II* (Taylor & Francis, London: 2011), pp. 242-243.

such, by 1996/8 (and again in 2006) several faults in its construction were found by members of the VHWUA after which further expenditure was required to stabilise the dam and make it functional.[62] This task was, however, to be completed by the DWA's Dam Safety Department. Additionally, according to Tempelhoff, though irrigation schemes in homelands provided 50,000ha of water, they largely failed after 1994 due to the government withdrawing subsidies and support.[63] This also happened with the Taung Irrigation School mentioned in Chapter Four. As such, in 2003 the VHWUA made arrangements with the DWAF to first tend to the Taung Dam's leakage problem in the inspection gallery (where monitoring instruments for the wall's performance is kept in the dam wall) before also taking over its maintenance and management as they did with the Taung Irrigation Scheme (as part of the VHIS) between 2001 and 2003.[64] A 2002 dam safety report, however, still showed extensive damages to the dam wall interior due to poor construction and wear and tear from predominantly corrosion caused by water dampness, which in turn caused further leakages, which needed to be tended to as a matter of urgency.[65] Though urgent, these dam safety concerns have been tended to in due course since 2007.[66] The dam is still owned by the DWS, but inputs from the VHWUA have since been featured.[67]

One of the reasons for the lack of development and implementation of projects such as the Taung Dam Irrigation Scheme lies within the tensions relating to land use and mineral rights. In a meeting held on 22 August 2005 *Kgosi* Motlabane from the Ba-Ga-Maidi tribe

---

[62] SPA, OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023.
[63] JWN Tempelhoff, *South Africa's Water Governance* ... (2018), pp. 159-160, & 317.
[64] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards ... (Working Paper 72, 2004), p. 54.
[65] SPA, OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023, Files given to the author by the Mr Kruger during visits to the VHWUA in Jan Kempdorp during April 2024. File reference: GJ Janse van Noordwyk, Taungdam: Jaarlikse Damveiligheid Inspeksie Verslag, 2002, pp. 2-10.
[66] As captured in the minutes of a meeting concerning the progress report by a company that tendered to fix the landings, staircases and hand railings in the dam: SPA, OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023, Files given to the author by the Mr Kruger during visits to the VHWUA in Jan Kempdorp during April 2024. File reference: DWAF & BKS, Rehabilitation of Group 2 Dams: Tender No. W9347 – Taung Dam – Construction of New Concrete Staircases and Platforms in The Valve Shaft, Minutes of Site Meeting no. 5 held at Taung Dam, 3 April 2008.
[67] OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023.

captured in so many words the tensions between the municipality and traditional houses[68]:

> "Ba-Ga-Maidi, confirmed such conflicts, blaming that on officials who always play political roles, with the intension to perpetuate instability and to have access to diamonds. The other concern is that the Councilors [sic] do not involve Traditional Leaders, when implementing projects, whereby, they in most cases target their friends as beneficiaries, instead of addressing the community needs; …"

The tensions are said to be political and have thwarted the success of various projects since the democratic elections in 1994. Added to this is the complex relationship between the traditional authorities and local municipal government, which has not always been good. According to Van Eeden and Diedericks' analyses of sources it was found that tensions between the duties have often led to the failure of projects such as the Taung Regeneration Plan.[69] More on the initiatives surrounding the development of Taung Dam for its intended purpose and otherwise ensues in Chapter Six.

5.5 Concluding thoughts

This chapter sought to underpin the key motivators behind the construction of the Taung Dam Irrigation Scheme since the scheme was never completed in its entirety. Due to this incompleteness, many questions arose as to its final purpose and more specifically the motivators that drove its construction in the first place. Additionally, its planning, construction and maintenance were elaborated on in so far as any sources found allowed for. This chapter highlighted that though Mangope's rule was oft seen as dictatorial, the growth in projects from departments such as Housing and Works and Water Affairs aimed towards economic growth. Agricultural endeavours took a front seat for the region of Taung, but water needs in this sector were not exclusively the reason behind the construction of the Taung dam. Domestic use too was an identifiable reason, though its implementation by the end of apartheid was not realised.

---

[68] MA-R, Minutes of Meeting with Greater Taung Political and Traditional Leadership, Mayor's Office, 22 August 2005, pp. 6-7.

[69] ES van Eeden & M Diedericks, Taung Region's Local Governance …, *in* ES Van Eeden, & A Manson (Eds.), *Taung in History* … (2024), p. 118.

Political nuances also spilled over into rumours of illicit diamond mining activities which seemed justified as the dam lay dormant for well over two decades with its management by parastatal entities also delayed due to structural faults and urgent maintenance required of the DWS at the beginning of the 21st century. Chapter Six points to the historical impact on people and the surrounding environment are highlighted as part of the main question for this study.

CHAPTER 6 REVIEWING THE TAUNG DAM IRRIGATION SCHEME DEVELOPMENTS AND CONTEMPORARY STATUS – A CRITICAL ANALYSIS

6.1 Introduction

To be able to conduct this study, a research framework in Chapter One was developed that required a research response on five research questions as objectives. These had been mostly complied to from Chapters Two to Five. By positioning intellectual perspectives and a conceptual understanding of irrigation historiography from a global understanding (yet developed firstly in all places as microspatial regional engagements), and as intensively discussed in Chapter Two, assisted this study well towards understanding how to consider the research and writing of the Taung Dam Irrigation Scheme development. In Chapters Three to Five an engagement with the microspatial regional history of the Greater Taung Local Municipality, revealed a fascinating context on the aspects that this study in particular had focussed on, namely irrigation history.

The 20th century saw the Batlhaping adapting from pastoral agriculture (for which the region is greatly suited) to irrigation crop agriculture (as the area also holds great potential for this). This growth was furthered by a need for political and economic independence enshrined in the political ideals of the independent Bophuthatswana governmental goals. Key motivators that drove the initiative for the construction of the Taung Dam Irrigation Scheme were elucidated as a prerequisite to the outline given on the construction and management of the Taung Dam. Eventually only one component of the project was completed.

In this chapter I want to critically review the historic impact of the Taung Dam Irrigation Scheme, even in its uncompleted state, on the surrounding communities and the environment. What in particular I have learned from the literature survey that mostly guided me in my research on Taung will be touched on in the first part. The second part highlights the historical socio-environmental impact of the Taung Dam. Though the loss of habitat has not broadly been bemoaned, its impact on the displaced community features strongly. Its state of disuse as political agendas feature as limitations to its utilisation are raised. The next part critically considers the various plans over the decades

to attempt to use the dam as a potential economic asset for the communities of the surrounding Taung district. The chapter ends by briefly discussing the stance of the dam and its use in 2023. With this chapter, how the Taung Dam Irrigation Scheme has impacted socio-environmentally will be highlighted to elaborate on its historic significance since its inception.

6.2 Prominent intellectual pointers that facilitated the Taung research

A part of the methodological approach included in the historical method was to cover diverse community and leadership perspectives from the top down and bottom-up and to scrutinise these voices well through a process of internal and external source criticism. The understanding of the Taung region as a frontier zone for the development of various economic endeavours (like irrigation) was assisted by relying on authors such as Ganoe,[1] and Sterling[2] as laid out in Chapter Two. This was especially applicable as mining interests too played a role in the development of the American West. Additionally, working towards interpreting the sources from the perspective of a regional history especially from both spectrums of the societal hierarchy (top down and bottom up) helped to understand the development of an area (as noted in Chapter One). An important critique continuously kept in mind, was the impact of autocratic leaders on the control of societies dependent on water for their further development. This was weighed as the various authors criticising the contributions of Wittfogel remained of interest.[3] It is believed that though the Taung Dam Irrigation Scheme remained in an undeveloped state, that its mere presence could be seen as a symbol of the way the state has played a role in the movement of people and their unachieved potential. This relationship between the people (bottom up) and government as implementers and enablers of economic growth (top down) has also been elucidated by the contributions of authors such as Josephson, as the idea of the Taung

---

[1] JT Ganoe, The Desert Land Act in Operation, 1877-1891, *Agricultural History*, (Washington), 11, 1937, pp. 142-157. Sterling himself also references Ganoe's contribution to better understanding the impact of legislature on irrigation prospects, *see* EW Sterling, The Powell Irrigation Survey, 1888-1893, *The Mississippi Valley Historical Review*, 27(3), Dec. 1940, p. 423.

[2] EW Sterling, The Powell Irrigation Survey, 1888-1893, *The Mississippi Valley Historical Review*, 27(3), Dec. 1940, pp. 421–434.

[3] KA Wittfogel, *Oriental Despotism …* (1957); AM Bailey, & JR Llobera, Karl A. Wittfogel and The Asiatic Mode of Production: A Reappraisal, *The Sociological Review*, 27(3), 1979, pp. 541-559; SH Lees, Irrigation and Society, *Journal of Archaeological Research*, 2(4), 1994, pp. 361-378.

Dam as a potential "hero project" was weighed.[4] An important observation by Lipton, Litchfield and Faure was that the pursuit towards poverty alleviation by state endeavours through, for example, large projects involving especially irrigation and agriculture was globally in declined between the late 1990s and early 2000s.[5] Though the economic status of the Taung region was not a focus in this study, contributions such as theirs helped shed light on the different cycles involved in the agricultural sector as well as the typical characteristics involved in successful irrigation schemes were weighed in light of Taung. This was especially helpful when interviewing agricultural experts on the topic of irrigation agricultural and the application thereof in the area. Sutton, Ertsen and Beer were a reminder to also not forget the indigenous knowledge systems already employed by local inhabitants as they pursue their livelihoods.[6] Especially as the history of agricultural development in Taung was mapped throughout the centuries and the impact of continuous advancements in agricultural practices and management styles on local inhabitants have come to the fore. Several South African historians' scholarly contributions to irrigation histories have assisted in formulating an idea of the flow of argument and sources to be pursued for this study.[7] Tempelhoff, on the other hand, assisted in better understanding the nuances surrounding the political and legal changes in the irrigation sector over especially the last century.[8] Though the above few sources are highlighted, much of the sources from Chapter Two (in especially the section of South African scholars) played an important part in the pursuit of the interpretation of information

---

[4] PR Josephson, *Hero Projects: The Russian Empire and Big Technology from Lenin to Putin* (Oxford University Press: New York, 2024), pp. 1-5, 15-21.

[5] M Lipton, J Litchfield, & J Faurès, The Effects of Irrigation on Poverty: A Framework for Analysis, *Water Policy*, 5(5-6), Oct. 2003, pp. 413-427.

[6] JEG Sutton, Irrigation and Soil-Conservation in African Agricultural History: With a Reconsideration of the Inyanga Terracing (Zimbabwe) and Engaruka Irrigation Works (Tanzania), *The Journal of African History*, 25(1), 1984, pp. 25-41; MW Ertsen, Colonial Irrigation: Myths of Emptiness, *Landscape Research*, 31(2), 2006, pp. 147-167; WM Ertsen, The Development of Irrigation Design Schools or How History Structures Human Action, *Irrigation and Drainage*, 56, 2007, pp. 1-19; CW Beer, Social Development in the Gezira Scheme, *African Affairs*, 54(214), 1955, pp. 42-51.

[7] ES Van Eeden, Waterkwessies, met Spesifieke Verwysing na die Uitwerking Van Wateronttrekking op die Landboubedryf in die Oberholzerdistrik (Carltonville-gebied), 1959 - 1972, *New Contree*, 39, 1996, pp. 78-91; W Beinart, The Rise of Conservation in South Africa … (2008); TJD Middelmann, The Hartebeespoort Irrigation Scheme: A Project of Modernisation, Segregation and White Poverty Alleviation, 1912–1926*, South African Historical Journal,* 67(2), 2015, pp. 158-179; W Visser, Water Contestations in The Little Karoo: Liaisons Between the Calitzdorp Irrigation Board and The Calitzdorp (Kannaland) Municipality, 1912- 2013, *TD The Journal for Transdisciplinary Research in Southern Africa*, 11(3), Dec. 2015, pp. 186-207; W Visser, Water as Agent for Social Change, 1900–1939 …, *Historia*, 63(2), Nov. 2018, pp. 40-61; D Whelan, Water, Settlement and Food Provision in Natal Colony: The Winterton Irrigation Settlement, 1902–1904, *Historia*, 64(1), May 2019, pp. 42-64.

[8] JWN Tempelhoff, *South Africa's Water Governance …* (2018).

obtained, as relating to the historical socio-environmental impact of the Taung Dam Irrigation Scheme.

6.3 The relationship between the Taung Dam Irrigation Scheme and the surrounding people and environment (1993-2023)

As Ekobi referred to in his study, many irrigation schemes have had negative and positive impacts on societies, a cost if you will, of environmental and social measures.[9] In the following sections an attempt is made to analyse the historical impact the Taung Dam Irrigation Scheme has had on the surrounding people and environment.

6.3.1 The environmental impact of the Taung Dam: The loss of land and movement

The long history of supplanting traditional forms of agriculture, such as discussed in Chapters Three and Four, with irrigation initiatives in parts of Taung cannot directly be linked to the Taung Dam Irrigation Scheme.[10] This is because it was never developed to its full potential and farming practices have never benefitted from water from this dam for agricultural purposes.[11] For more than two decades the dam has been effectively a white elephant.[12] The environmental impact therefore solely lies within the impact of the construction and presence of the Taung Dam. Even though mention is made of conservation and ranching studies being conducted before the construction of the Taung Dam,[13] these studies remained elusive to the author. In this instance, cartographic analyses give some insight into the natural plant loss,[14] but with obvious limited success since there is no indication that an environmental impact assessment before the construction of the dam was ever done - and if it was, the author could not trace it. A

---

[9] AG Ekobi, Problems Faced by Small-Scale Farmers in Taung Irrigation Scheme in The North West Province, South Africa (MA, NWU, 2019), p. 48.

[10] Consider chapters three and four for this transitioning period.

[11] I Fourie (ed.), Investigation of Groundwater and Surface Water Interaction for The Protection of Water Resources in the Lower Vaal Catchment: Inception Report, WSM Leshika Consulting, Report no. RDM/WMA05/00/GWSW/0122, (Department of Water and Sanitation (DWS): South Africa, Pretoria, 2022), p, 7, [online source, accessed: 10 November 2024, https://www.dws.gov.za/wem/currentstudies/doc/groundwater/Inception%20Report%20.pdf].

[12] In this instance the Taung Dam is referred to as a white elephant, since it is maintained, yet not used at all and merely exists.

[13] MPA, Office of the Presidency, 242, 9/5/2(21), Part 1, Taung District Development Plan: Agenda for Minutes, Technical Working Group, meeting no. 06, 31 January 1990.

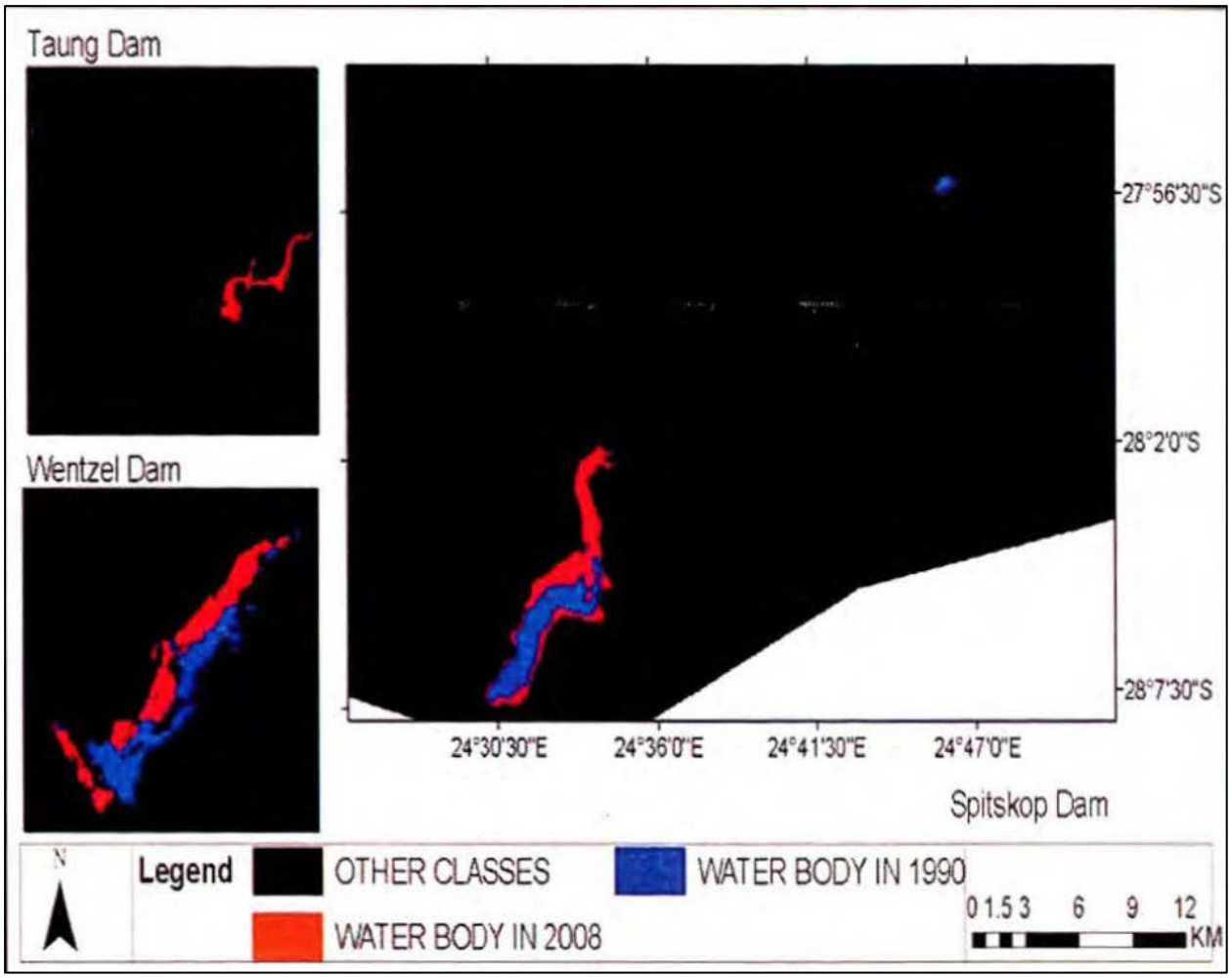
[14] We are reminded of Ertsen's cartographic analysis (mentioned in Chapter Two) in determining the impact of colonial-influenced farming practices on African communities. *See* MW Ertsen, Colonial Irrigation: Myths of Emptiness, *Landscape Research*, 31(2), 2006, pp. 163-166.

study that did however attempt to compare the land use cover changes by comparing five key land cover uses identified from the year 1990 to 2005 and again to 2008, was captured in a thesis study by Kabanda.[15] Since his study includes the whole of the Harts catchment area, a discussion of his findings follows where applicable (and possible) to the Taung district.

For the whole Harts River catchment area (roughly 1,312,650ha) the land use/cover areas identified included water bodies (0.1%), agricultural land (2.6%), vegetation (likely natural) (60.4%), barren land (17.3%), and built structures (19.6%) in 1990.[16] The latter three accounted for 97.3% of the land area, with water bodies and agricultural land only covering 2.7%. These are important figures to consider since the percentage of water bodies increased to 0.2% in his 2005 analysis. Though the area percentage does not account for much, the figures given by Kabanda reflect an increase from 1220.9ha to 2526.48ha, which is a 106% increase. The Taung Dam covers an area of 465ha, well within the increased amount noted.[17] Together, the figures on water bodies henceforth constitute the Spitskop and Taung Dams and the 1,120 km of canal systems, feeder and holding dams, though the latter has been in place since the 1940s (Map 6.1).[18] The combined impact of these large water bodies (and decades of subsequent irrigation activities) had the added effect of raising the water table of the region at large. Turton *et al.* note this negatively since it impacted the salinity levels in the soil and increased the rate of waterlogged areas.[19] However, a move from flood irrigation to sprinkler irrigation in the 1970s mitigated these effects to a degree.

---

[15] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012).
[16] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), pp. 53-56.
[17] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), p. 60.
[18] L van Vuuren, Water Savings: Persistence Pays Off at Vaalharts, *The Water Wheel*, Nov/Dec 2009, pp. 12-15, [online source, accessed: 11 November 2024, https://www.wrc.org.za/wp-content/uploads/mdocs/08%20vaalharts%20p%2012-15.pdf].
[19] AR Turton, R Meissner, PM Mampane, & O Seremo, A Hydropolitical History … (2004), Report No.: 1220/1/04, p. 227.



Map 6-1: Changes in land use as water bodies increased from 1990 to 2008 in the Harts River Catchment Area[20]

A noticeable observation was the reduction in vegetation cover with 792,901.6ha in 1990 reduced to 758,345ha in 2005 and further reduced to 736,879.4ha in 2008. At the same time, barren land seemed to increase from 226,670ha in 1990 to 324,321.5ha by 2008, but is mostly observed in the western regions of Taung (closer to the Ba Ga Mothibi area). It could likely account for the reduction in vegetation cover over the years, but the growth in agricultural land (34,402.8ha in 1990 to 37,035.38ha in 2008) could also be a likely cause for the reduction in natural vegetation, although it could not be attributed to the influence of the Taung Dam Irrigation Scheme. Kabanda notes that the growth in agricultural land could be linked to a dedicated effort towards establishing commercial agriculture in the Harts Catchment Area.[21] He surprisingly remarks that the increase in

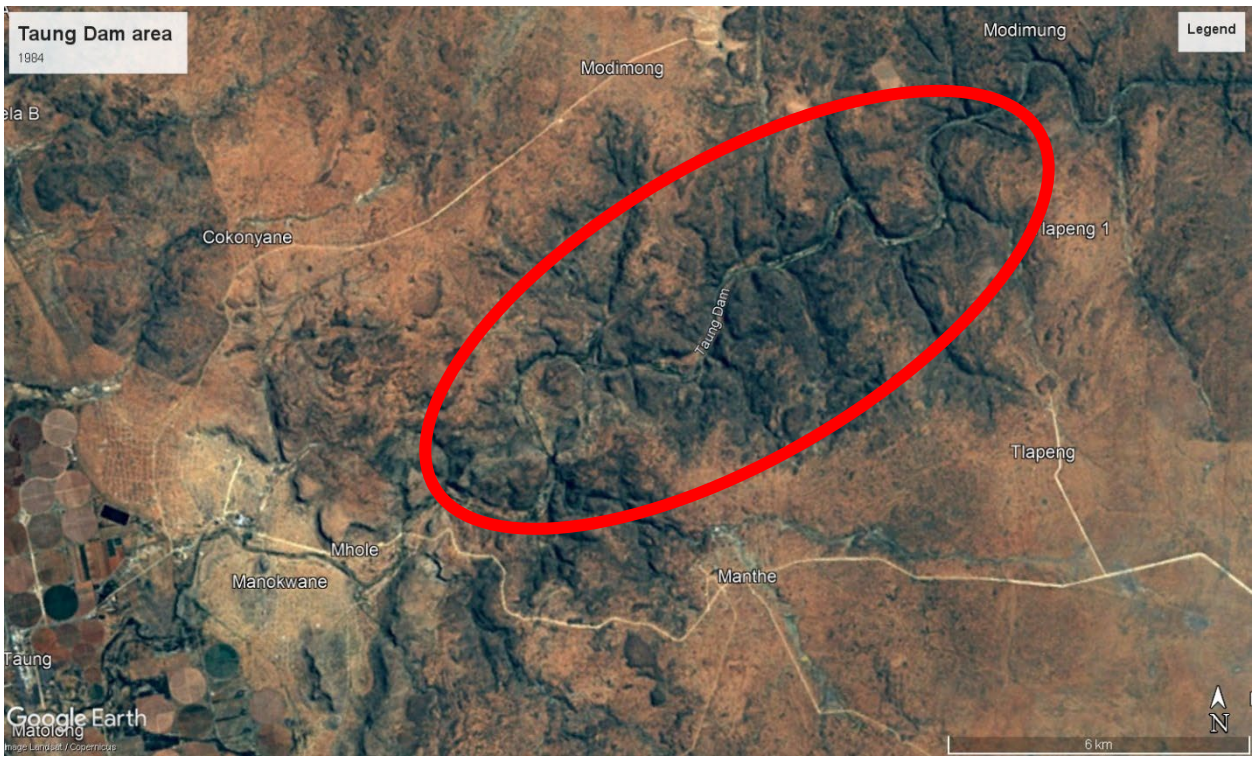
[20] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), p. 60.
[21] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), p. 57.

water bodies harmed the amount of agricultural land as 224.64ha of agricultural land changed to water bodies between 1990 and 2008. Inversely, 61.65ha of water bodies changed to agricultural land. The image below gives an idea of what the area at the bottom of the dam likely looked like before its construction, with thick bush covering the valley regions. The image was taken by the author in an area where gravel roads lead to the eastern shorelines of the Taung Dam on the Ba Ga Maidi side.

Figure 6-1: Photo illustrating the thick bush coverage throughout the valleys surrounding the Taung Dam[22]

Considering the above image and comparing it with Map 6.1 before and Map 6.2 below from a satellite image dating to 1984, the loss of vegetation noted by Kabanda is not insignificant for an area predominantly reliant on vegetation that supports mainly animal husbandry.

[22] Photos taken by author: 17 April 2024.



Map 6-2: Satellite image of the Harts River before the Taung Dam[23]

Another plausible reason observed for the decline in natural vegetation, agricultural land, and changes to land covered with bodies of water was the noted presence of alluvial diamond mining in and around the Taung region (among others).[24] Even within the explorations for diamond-bearing rocks the use of heavy earth-moving equipment (including the process of getting such equipment at the required location) and the clearing of land negatively impacted the environment (be it natural vegetation, agricultural, or water-bearing).[25] In the ensuing section, an analysis of the historic impact of the presence of the dam on the local communities is given.

6.3.2 Displacement and resettlement: Stories of discontent and appeasement among the villagers of Kolong

A source from the *Civil Engineering* periodical claims that consultation processes with surrounding communities preceded the construction of the Taung Dam as they

[23] A Google Earth screenshot by the author.
[24] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), p. 67.
[25] PP Ramollo, Impact of Alluvial Diamond Mining on Macroinvertebrate Community Structure in The Lower Vaal River, Northern Cape Province in South Africa, *International Journal of Environment*, 9(2), 2020, pp.1-2.

endeavoured to make full use of the dam.[26] No evidence could, however, be found by the author to substantiate that community members were consulted before the dam's construction. In a Working Group meeting held on 16 October 1989, a Mr Wentzel from the Department of Justice though noted that due to the sensitive history around resettlement, no future projects should be considered that would require "forced resettlement initiatives" since it was contrary to existing policy.[27] Despite this, it is said that with the construction of the Taung Dam, a village by the name of Kolong (Dikgageng) was submerged and with it 116 graves.[28] Tebogo Thapiso is a cattle herder who was a young boy at the time of the Taung Dam's construction. He remembers a village his family moved to before the construction of the dam as Kgatumane, after which they moved to Randstad.[29] The village of Kgatumane is listed twice on maps, once, along the Harts River near the area where the dam would have flooded and again slightly north of that area (indicated with red arrows on Map 6.3).[30] The village of Kolong, however, is not indicated on this map. It could indicate that the village was much smaller than initially considered, and likely features in the area marked as Kolong River on Map 6.3. In a copy of a map discussing the disputed areas between the Ba Ga Mothibi and Ba Ga Phuduhucwana, the village of Kolong is mentioned as a potential borderline of the latter's boundary with the Ba Ga Maidi, which is likely since rivers were often earmarked as such (marked in a blue circle on Map 6.3).[31] However, on the same map, the potential whereabouts of the village Kolong is also noted in a dotted red circle (same as Kgatumane) based upon the observations made by interviewees, with possible houses indicated on the map dating to 1989 (before the Taung Dam). Very few of the original inhabitants that lived in Kolong could be found, with most of them having already passed

---

[26] Anon, Taung: A Dam for The People, *Civil Engineer in South Africa*, (2(7), 1994, p. 11.

[27] MPA, Office of the President, 242, 9/5/2(21), Part 1, Minutes of the Technical Working Group meeting no. 05: Taung District Development Plan, 16 October 1989, pp. 3-4.

[28] MA-R, Office of the Municipal Manager, Internal Memo: Report of meeting held on 27 January 2006 between Kolong, Dikgageng, GTLM, Traditional Leadership, Department of Water Affairs and Forestry, and other stakeholders, 27 January 2006.

[29] SPA, OA-04, Tebogo Thapiso, Cattle herder, Manthe, 30 September 2021.

[30] MPA, 6/1/2(31) Vol 2, Department of the President, Institution, Composition and Jurisdiction of Baphuduhucoana, 1986-1992, Memorandum: Commission of Inquiry into The Land Claim by the Batlhaping Ba Ga Mothibi tribe, Taung, 23 Dec. 1991.

[31] MPA, 6/1/2(31) Vol 2, Department of the President, Institution, Composition and Jurisdiction of Baphuduhucoana, 1986-1992, Memorandum: Commission of Inquiry into The Land Claim by the Batlhaping Ba Ga Mothibi tribe, Taung, 23 Dec. 1991; NASA/ URU/ Vol. 3641/ Ref. 470, Prime Minister's Office, Omskrywing van Die Gebiede van Die Batlhaping-stam en Instelling van Die Ba Ga Maide- en Bapuduhuchwane-Stamowerheid: Distrik Taung, 9 March 1957.

on.[32] Those that were interviewed could reflect that they had been relocated from the village as far back as between 1972 and 1973 by the then-apartheid government.[33] What followed after the relocation in the early 1970s was surface alluvial mining activities which Mrs Albertina Phutieagae (one of the elders now resident in Manthe) witnessed.[34] She worked in what she refers to as “diggeries” by providing provisions for the riverbed miners and working in their makeshift “kitchens”. Her story at the very least confirms that alluvial mining in the Harts River in the Kolong area did indeed occur. At some point it was not unusual for women to accompany men to their mining activities as more and more Batlhaping sought other means of income when their livelihood in agriculture became increasingly threatened due to either betterment strategies, loss of access to land (also due to betterment strategies), or environmental constraints such as drought.[35] Mrs Phutieagae, however, recounted that the miners that she worked for were not Batlhaping, but rather white men not from the area. Another respondent, however, recalls a different version of events. Mr Kenny Moepang, remembers the stories from his grandmother and grandfather, Mr Jackson Moepang a chief (likely a headman) and leader of the Kolong village.[36] According to Kenny’s testimony, the people who remained in Kolong (likely after the first warning of removal in the early 1970s) were forcefully relocated much closer to the initial stages of the construction of the dam in the latter part of the 1980s.[37] (He could not recall the exact date). According to him, the forced removal was preceded by intimidation tactics by the then Bophuthatswana police force when the construction workers began with their diggings with heavy-earth-moving equipment. Though this likely featured as a threatening tactic to convince the remaining persons of Kolong to move, the place in which the village was located within the valley, and as its second name,

---

[32] An informal conversation with a goat farmer in Manthe revealed that only three elders were left in Manthe that used to live in Kolong. I managed to interview one, *see* Smit Personal Archive (SPA), Oral Archive (OA)-17, Albertina Phutieagae, Ba Ga Maidi Council Office - Manthe, 6 October 2022.

[33] MA-R, M Mphane, Legal Services Officer, Internal Memo, Report to The Meeting Held on 27 February 2006 Between Kolong, Dikgageng, GTLM, Traditional Leadership, Department of Water Affairs and Forestry and Other Stakeholders, 6 February 2006.

[34] SPA, OA-17, Albertina Phutieagae (79), previous resident of Kolong now resident at Manthe, and Dodo Gaenone, son of Mrs Albertina Phutieagae and resident at Manthe, Ba Ga Maidi Council Office, Manthe - Taung, 6 October 2022.

[35] We recall this observation from previous chapters as the Batlhaping adapted to changing economies due to increasing European presence in the area.

[36] SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024.

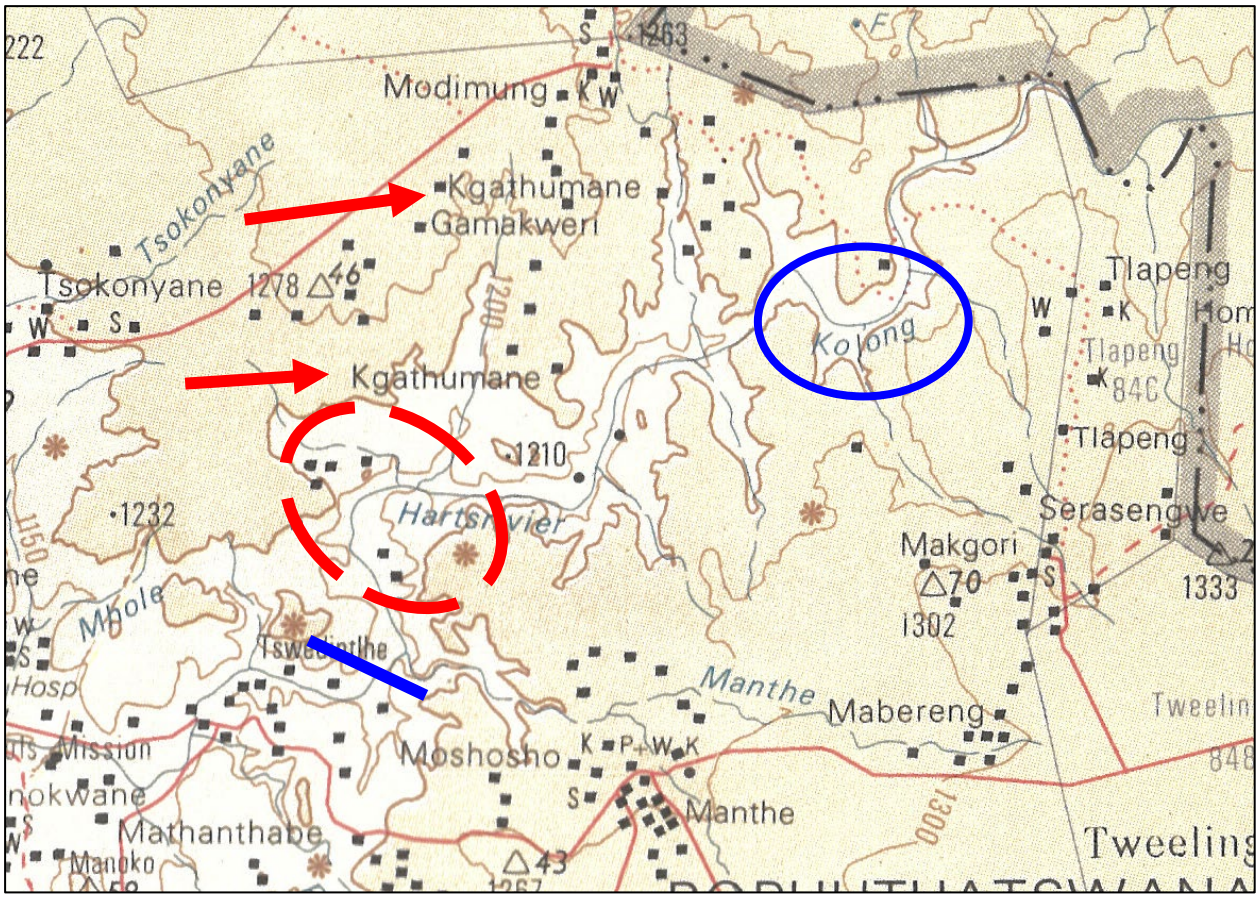
[37] A letter from *Kgosi* Mankuroane of the Ba Ga Pudhuhuchwane to Mr Kenny Moepang confirms that they have been forcefully removed. SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024, additional documents.

Dikgageng, indicated ("the place hidden in the valley") made it difficult for these last groups of people to leave with much other than what they could carry.[38] As observed in several histories where the relocation of people had to take place due to the construction of large structures such as dams, there are habitually groups of people that remain until the bitter end. These groups are often removed by force.[39] When asked why the people of Kolong did not act more adamant during the time of the removals, several of the interviewees mentioned that opposing the governing body (Mangope's government) was not a practice even considered.[40] This is also preceded by a long history of forced removals as captured in Chapters Three to Five.

[38] We are reminded of the previous section's Map 6.2 and Figure 6.1 that pictures the environmental circumstances through which these persons likely had to travel to a new home.

[39] We recall the observations in Chapter Two from various (especially international) authors, *see* T Schudder, *Aswan High Dam Resettlement of Egyptian Nubians* (2016); TC Bisht, Development-Induced Displacement and Women …, *The Asia Pacific Journal of Anthropology*, 10(4), 2009, pp. 301-317; S Robinson, The experience with Dams and Resettlement in Mexico, *Contributing paper* …, 2000, pp. 1-12, [online source, accessed: 30 August 2024, https://www.irn.org/files/pdf/mexico/Resettlement.pdf]; J Jing, Rural resettlement …, *The China Journal*, (38), 1997, pp. 65-92; J Colajacomo, & C Chen, The Chixoy dam …, *Contributing paper …*, 1999, pp. 1-20, [online source, accessed: 30 August 2024, http://che.rabinal.info/doc/ChixoyDam_StoryOfForcedResettlement.pdf]; AA Jibowo, & M Mncina, Benefits and Challenges of Maguga Dam Resettlement Scheme …, *South African Journal of Agricultural Extension*, 47(4),2019, pp. 18–28; D Whelan, Water, Settlement and Food Provision in Natal Colony …, *Historia*, 64(1), May 2019, pp. 42-64.

[40] SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024; SPA, OA-17, Mrs Albertina Phutieagae, previous resident of Kolong now resident at Manthe, Dodo Gaenone, son of Mrs Albertina Phutieagae and resident at Manthe, Manthe, 6 October 2022.



Map 6-3: A portion 2724 Christiana (1:250 000) map showing a section of the Harts (Kolong) River before the Taung Dam.[41]

The blue line on the map shows the area where the dam is currently situated, with everything to the right submerged by the dam, right up to the point on the dam marked as the Kolong River (encircled in blue).[42] Regardless of where Kolong was situated, the dots and small black squares in the area below the 1,200m contour line (above sea level) were likely affected by the relocation initiatives, especially those situated close to the river as they were located within the planned flood zone of the dam. Being situated in a valley, their agricultural activities hardly ever had to contend with severe cold and frost with ready access to the river. It was noted that those situated at Manthe, virtually on top of the valley thus had to deal with severe winds and built wind break structures to help contend its effects (Figure 6.2).[43] This likely also had an impact on their new standard of living. A

[41] A snippet was taken by the author of the map: Chief Director of Surveys and Mapping: Mowbray, 2724 Christiana, 1:250 000, 2nd ed, June 1989.
[42] As mentioned in Chapter Three, the Harts River is often locally referred to as the Kolong River.
[43] The author recalls the building of windbreak structures from mud bricks around outside-fireplaces at Manthe as a means to keep the wind from affecting it.

visible adaptation to this was observed in Manthe where homes had an additional windbreak structure protecting fires hearths from harsh winds (see Figure 6.2).[44]

Figure 6-2: A typical windbreak structure observed at several homesteads in Manthe.[45]

According to Mr Moepang, little of their livelihoods survived the move, with remnants of the people scattered to various surrounding villages. This scattering is in contrast to the planned resettlements of days past (Chapters Three and Four), which begs the question of the supposed consultations (referring to Mr Wentzel's observation shared earlier) that were done before construction (Chapter Five). Be that as it may, the Moepangs made their way to Manokwane, where others settled at either Manthe, Chokonyane, Randstad, or Taung.[46] When asked to reflect on life in the village and what his grandparents remembered about Kolong, Mr Moepang reflected: "Home is your home", further

[44] SPA, OA-16, Mrs Violet Mabisang and Mr Josef Maboitshege, residents at Manthe, 6 October 2022.
[45] Photo taken by author in Manthe on 6 October 2022.
[46] SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024; SPA, OA-04, Tebogo Thapiso, Cattle herder, Manthe, 30 September 2021.

expanding that though the village was not modernised it is remembered fondly for its simplicity.[47] In all, it may be concluded that though some members of the Kolong village were relocated at an earlier stage, some stalwarts were adamant about staying in the village, come what may. This, however, had dire consequences as Mr Moepang reflects on how his grandmother and his family were relocated. He recalls that in Kolong his grandparents lived in traditional mud-structure homes. When the remaining people moved to the new area, they began incorporating more modern structures, such as galvanised roofing, an element they were not entirely familiar with. This, he notes, was reflected in the poor construction of his grandmother's home. He also mentioned that the people who relocated had to leave their cattle behind as the new area they moved to was often not able to accommodate extra livestock nor did they have the required permission to keep livestock in the new areas. Mrs Mabisang, a lifelong resident in Manthe, did, however, recall that the animals were also relocated by the Mangope government at a later stage.[48] These families were forced to find new forms of livelihood. By that time (late 1980s) his grandfather had already passed, and his remains were buried in the place of his birth at Kolong. The relocation of these families is a sensitive subject since many people in South Africa already had a history of being displaced due to political ideologies imposed on them (as seen in Chapters Three and Four). It is, therefore, that in 2006 petitions and letters to the local municipality and the Department of Water Affairs and Forestry (DWAF) saw the erection of a memorial plate close to the dam alongside a tree of remembrance representing the names of the 116 buried family members (Figure 6.3 – A full list of the names can be found in Annexure A).[49] The unveiling of the stone took place on 8 September 2007 with promises from the then Minister of the DWAF to look into how the Taung Dam can be utilised for employment opportunities.[50] Mr Moepang noted that the members of the historic Kolong village were henceforth first to be considered for any employment opportunities surrounding the dam.[51]

---

[47] SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024.
[48] SPA, OA-16, Mrs Violet Mabisang and Mr Josef Maboitshege, residents at Manthe, 6 October 2022.
[49] MA-R, M Mphane, Legal Services Officer, Internal Memo, Report to The Meeting held on 27 February 2006 between Kolong, Dikgageng, GTLM, Traditional Leadership, Department of Water Affairs and Forestry and other stakeholders, 6 February 2006. See Annexure A for a list of the names.
[50] LB Hendrick, Speech: Unveiling of the Taung Dam Memorial Stone by DWAF Minister, Manthe Village, 8 September 2007 [online source, accessed: 24 April 2024, https://www.dws.gov.za/Communications/MinisterSpeeches/2007/TaungDam8Sep07.pdf].
[51] SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024.

Figure 6-3: Kolong village memorial stone at Taung dam[52]

Though the GTLM also endeavoured to care for the remaining graves situated on the edge of the dam, compensation was out of the question for these families.[53] The latter matter weighed heavy on the hearts of the villagers, and Mr Moepang noted that he continued consultations with the DWS as the elders of the village would also often meet to discuss the matter.[54] Almost, as a gathering to remember and reconnect as a village - especially in the light that many had to start anew with little to nothing to their name.[55] As such, in 2019 feelings of discontent flagged up once more as reports of the number of graves under the dam increased to 250, and those affected called for government compensation.[56] Traditions surrounding duties towards ancestral rites are still deeply rooted within the community, however, the call for compensation for families of more than an extra 100 deceased (compared to the original list of 116) does raise suspicion. No

[52] Photos taken by N Smith, 30 September 2021.
[53] MA-R, M Mphane, Legal Services Officer, Internal Memo, Report to The Meeting Held on 27 February 2006 between Kolong, Dikgageng, GTLM, Traditional Leadership, Department of Water Affairs and Forestry and other stakeholders, 6 February 2006.
[54] SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024.
[55] A letter from Kgosi Mankuroane of the Ba Ga Pudhuhuchwane to Mr Kenny Moepang confirms that they have been forcefully removed. SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024, additional documents.
[56] L Mothibedi, Over 250 Graves Remain Under a Dam in Kolong, SABC News, [online source, accessed: 25 March 2023, https://www.youtube.com/watch?v=FsIZrWQc3SQ&list=WL&index=19].

further documentation regarding any such compensation being given (attention to) was found by the author. The stories shared by the people of Kolong are in stark contrast to what Jibowo and Mncina described in Chapter Two. In their case the people of the Hhohho region of Eswatini in ca 2001 whose relocation for the construction of the Maguga Dam were mostly positive due to the high level of involvement from all stakeholders.[57] Their inclusion of the traditional authorities in these processes is a lesson that authorities involved in the construction of the Taung Dam Irrigation Scheme could have benefitted from.[58] However, had developments earmarked for the dam ensued as planned, it might not have had as negative a view as it did in the decades that unfolded since its construction, since much of the discontent expressed was also related to the dam's disuse.

6.3.3 The Ba Ga Maidi and Ba Ga Phuduhucwana: Political access to the dam

The land area covered by the Taung Dam belongs to the Batlhaping Ba Ga Phuduhucwana and Batlhaping Ba Ga Maidi.[59] According to *Kgosi* Motlhabane of the Ba Ga Maidi, what bothers him is not so much a sense of loss of land, but a loss of opportunity in access to mineral resources that could have contributed to the development of his tribal district.[60] This section is only a short note of acknowledgement as the majority of the disputes relating to the Taung Dam culminating between the two affected tribal authorities (Batlhaping Ba Ga Maidi and the Batlhaping Ba Ga Phuduhucwana) related to mining developments covered in a section below. Of importance here is that the lack of development in the area as noted by government officials (but also by tribal stakeholders)

---

[57] AA Jibowo, & M Mncina, Benefits and Challenges of Maguga Dam Resettlement Scheme to Displaced People in Hhohho Region of Eswatini, *South African Journal of Agricultural Extension*, 47(4), 2019, pp. 18–19.

[58] It is noted that the Maguga dam was constructed a decade after the Taung Dam, but the author highlights this contrast due to the involvement of traditional authorities and tribal communities and what could have been had a different approach been followed in the Taung Dam Irrigation Scheme.

[59] Smit Personal Archive (SPA), Oral Archive (OA-1), Mr Macdoland Motlabane, & Mr GG Mocwiri, Department of Agriculture – Taung office, 29 September 2021.

[60] SPA, OA-24, *Kgosi* Nyoko Motlhabane, Ba Ga Maidi Tribal Offices, Manthe, Interviewer: Nadine Smit & Mr Reggie Pienaar (VHWUA representative), 17 April 2024.

is related to tribal authorities' endeavours to avoid the exploitation of their people and the mineral rights they seek surrounding the dam.[61]

6.3.4 A dam not fit for purpose: The historical impact of the Taung Dam Irrigation Scheme and the surrounding farming community

The level of preparation for especially the initial Taung Irrigation Scheme to be successful denotes the seriousness with which its success was intended.[62] None of this was visible in the sources found for the Taung Dam Irrigation Scheme. According to Kokome, for planning an irrigation schedule for prospective irrigation farmers, two factors need to be weighed, namely crop requirements and evaporation rates.[63] For the former, the author found references made to soil studies completed as part of a feasibility study for the area that was supposed to benefit from the Taung Dam as a potential source of irrigation.[64] However, the results of these studies were not found, nor an indication of where these studies were conducted. As to the latter, a feasibility study post-completion of the Taung Dam between 2006 and 2008 found that the amount of water that would be required from the Taung Dam taking the evaporation rate into consideration, would far exceed the inflow of the Harts River into the Taung Dam.[65] The investigations into the possibility of making use of the dam in this 2006 to 2008 study were extensive and conclusive.[66] On the map below prospective areas for further irrigation initiatives are highlighted in an area totalling 1,750ha (10ha for 175 previously dispossessed farmers from the upgrades to the Taung Irrigation Scheme in the 1970s) to be situated southeast of the Dam and supplied with untreated water for irrigation purposes. The finding surrounding the water required to maintain these 1,750ha of additional irrigation plots however, proved, unsustainable.

---

[61] This statement was also observed from various interviews: SPA, OA-01, Mr Macdoland Motlabane and Mr GG Mocwiri, Department of Agriculture Offices, Taung, 29 September 2021; SPA, OA-25, *Kgosi* Nyoko Motlhabane, Ba Ga Maidi Tribal Offices, Manthe, 17 April 2024.

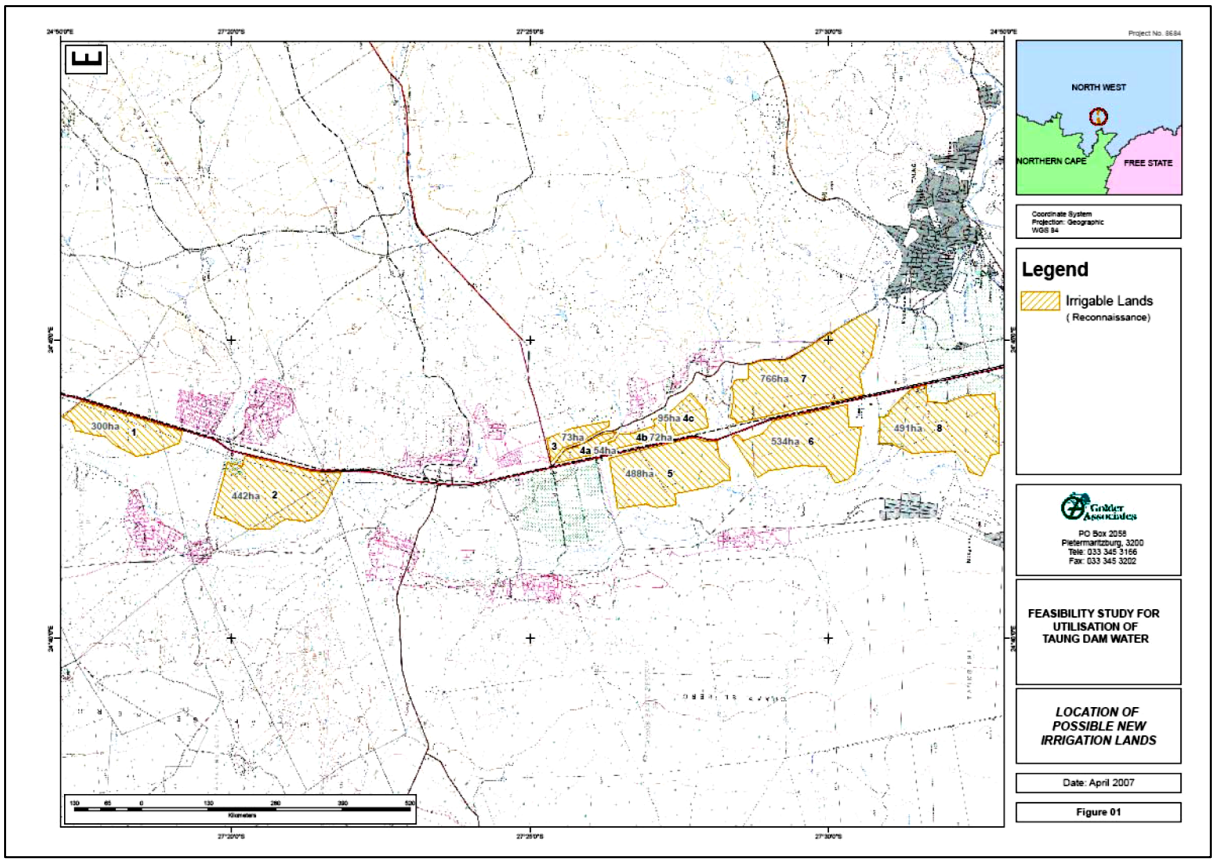
[62] PL Breutz, *The Tribes of The Districts of Taung and Herbert* (1968), p. 72. Also consult Chapters Three and Four.

[63] JE Kokome, Evaluation of Irrigation … (MA, Central University of Technology, 2004), p. 13.

[64] MPA, Office of the Presidency, 242, 9/5/2(21), Part 1, Taung District Development Plan: Agenda for Minutes, (5-7-1990 to 24-7-1990), folder date: 1978-1990.

[65] SPA, OA-20, Niel van Eeden & Kobus Harbron, VHWUA, online meeting, 12 October 2022.

[66] D Mnguni, & AJ Alletson, Vaal River System: Feasibility Study for Utilization of Taung Dam Water - Environmental Impact Assessment and Public Participation, DWAF Report Number: P WMA 10/C31/00/1508 (Supporting Report 11), July 2008.



Map 6-4: Location of possible new irrigation lands investigated during the feasibility study of the Taung Dam[67]

Due to the flat topography and high evaporation rates (enhanced by the semi-arid climate) large-scale crop production may be hampered due to a lack of surface water potential. This is further restricted by the slow river in-flow which would impact the re-intake of water into the existing dam sites. It was also mentioned in an Environmental Management Framework completed in 2015, that should water from the Taung Dam be applied for irrigation purposes in the Taung region, the return water flow into the Harts River and subsequent Spitskop Dam could negatively impact the surface water quality and therefor agricultural development in the larger VHIS.[68] This would make the extraction of water for irrigation and agriculture purposes from the Taung Dam likely to fail in the long run.

[67] Department of Water Affairs and Forestry (DWAF), South Africa, Feasibility Study for Utilisation of Taung Dam Water: Irrigation Planning and Design: prepared by Golder Associates, 2007 (PWMA 10/C31/00/0908), p. 22 & Annexure A.

[68] T Meyer, & D Cilliers, Greater Taung Local Municipality (GTLM) – Environmental Management Framework (EMF) report, Project number: CEM 2013/222 and RDLR-0077, 2015, pp. 44-45.

6.3.5 Observing the community's engagement with the Taung Dam

During a visit to the dam on 30 September 2021 the author observed from afar a man performing what looked like a spiritual cleansing ritual by dancing naked and washing his body with the water coming down from the steps descending on the spillway of the dam wall. The guide accompanying the author on the excursion to the dam informed the author that the man was likely a traditional healer performing a cleansing ritual.[69] Though it was noted that the dam was rather avoided by most locals due to negative spiritual connotations, it appears that for some the water remains significant in this regard.[70] Apart from a spiritual significance, there was evidence that the dam was being used for other purposes, especially recreational (and are reflected on later in this chapter).[71] As to the use of water from the dam by cattle herders and alike, Tebogo Thapiso noted that the various water holes in the vicinity was sufficient for their needs.[72] The 2008 utilisation feasibility report also contended that there was sufficient ground water supplies to support animal husbandry in the area, but that vandalism to the structures were a noted problem.[73] As stated earlier, according to Mr Moepang, as the recognised headman of the village of Kolong (Dikgageng) any future projects related to the dam would henceforth first be considered by him and the family members that were relocated, as potential source of employment.[74] In the ensuing section the various use cases of the dam is elaborated on.

6.4 Making plans to make use of the Taung Dam since 1994

It has become evident that throughout the years news reports have brought Taung Dam's potential utilisation to the fore. This is especially in light of the economic growth envisioned in its irrigation potential, but largely also tourist possibilities feature.[75] With a local unemployment rate of 49.8% (of which 61.7% are youths) in 2011, initiatives such

---

[69] An informal conversation with a local guide, Mrs Fatima Tlakase, 30 September 2021.
[70] SPA, OA-04, Tebogo Thapiso, Cattle herder, Manthe, 30 September 2021.
[71] R Kanyane, Revellers Flock to Taung Dam for New Year Celebration, *Taung Daily News*, 3 January 2018 [online source, accessed: 30 September 2023, https://taungdailynews.com/2018/01/03/].
[72] SPA, OA-04, Tebogo Thapiso, Cattle herder, Manthe, 30 September 2021.
[73] DWAF, Vaal River System: Feasibility Study for the Utilisation of Taung Dam Water - Main Report, July 2008, Report number: P WMA 10/C31/00/0408, pp. iii-vi.
[74] SPA, OA-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024.
[75] M Mfoloe, Land for The Poor of Taung, *Sowetan,* 2003-09-29, p. 8; E Torerai, Dam Facelift to Boost Rural Tourism, *The New Age*, 10 January 2014, p. 27.

as those surrounding the Taung Dam Irrigation Scheme have resurfaced especially in the 21st century.[76] In this section, some of those are highlighted, though it is noted that many have not ultimately culminated into anything substantial.

6.4.1 Taung Dam - a source of water for the municipal supply

In 1990 with the turning of the first sod, the Minister of Water Affairs of Bophuthatswana mentioned that one of the purposes of the dam was to augment the supply of domestic water to Taung.[77] In the 2006/2008 feasibility study of the dam, its water was confirmed sufficient for primary use.[78] This finding was once again confirmed in 2015 as the level of quality of water from the Taung Dam has been noted as of adequate for domestic use.[79] Areas closest to the dam were also earmarked to be the first to benefit from this use.[80] Villages situated further away would be considered at a later stage if supplies allowed. The Bulk Water Supply (first completed in 1980)[81] in Taung were also to be augmented with the addition of the Taung Dam. The areas identified as potential beneficiaries included the Bogosing Water Supply Scheme which could, in turn, directly be connected to the Taung Water Supply area, which is the second area identified. For the latter to be successfully implemented, meant that the water obtained from the Vaalharts Canal could then be earmarked for Vryburg. In the second phase of the Bulk Water Supply Scheme in which a gravity pipeline from Taung to the Taung Dam was to be constructed, the Ba Ga Phuduhucwana first requested a cleansing ceremony.[82] Other traditional matters, not mentioned in the report, also set the project back by five months. Among the 16

---

[76] StatsSA, Greater Taung, (online source, accessed: 27 October 2024, https://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality); ES van Eeden & M Diedericks, Taung Region's Local Governance …, *in* ES Van Eeden, & A Manson (Eds.), *Taung in History* … (2024), p. 124.

[77] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.

[78] AJ Smook and Project Team, Vaal River System: Feasibility Study for Utilization of Taung Dam Water - Water Development and Supply Plans, DWAF Report Number: P WMA 10/C31/00/1508 (Supporting Report 6), July 2008, p. 3.2.

[79] T Meyer, & D Cilliers, GTLM – EMF report, Project number: CEM 2013/222 and RDLR-0077, 2015, pp. 44-45.

[80] OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023, Files given to the author by the Mr Kruger during visits to the VHWUA in Jan Kempdorp during April 2024. File reference: DWAF, Taung Dam: Water Utilisation Feasibility Study, Minutes for the Stakeholders Committee Meeting No. 3, Taung Local Municipality Boardroom, 29 February 2008.

[81] MPA, Department of Works and Housing (Republic of Bophuthatswana), Annual Report, 1979-1980, p. 23.

[82] It was noted that the cleansing ceremony would have costed R130,000.00. *See* MA-T, Special and Ordinary Exco Council Meeting Minutes, 29 November 2012, p. 89.

communities that stood to immediately benefit from the completion of the pipeline and water works project were Chokonyane (just north of Taung), Taung village, Taung station and Taung depot.[83] Once the second phase of this project was completed a further 16 communities in and around Taung would benefit, of which Manthe (directly next to the Taung Dam) are included. It was thus in 2017 that a project was completed in which a pipeline from the Taung Dam pumps water to the town of Taung to augment its current supply.[84] Its use as a supplier for large irrigation projects, as mentioned, is not possible due to the low inflow rates from the Harts River. As mentioned in a previous section, the third area of potential supply identified in 2008 was the area of 1,750ha. This option was however short-lived as the same feasibility study concluded that the supply needed for the successful implementation of expanding irrigation near Taung would far exceed the capacity of the dam.[85] However, before any of these initiatives could also take place, the required upgrades to the dam identified in the 2009/2010 DWA annual report amounting to R 8 million had to be dealt with first.[86] Additional, to the proposed utilisation of the water from Taung was the consideration of where water purification needed to take place. Two scenarios documented in the meeting minutes were considered, which included building a purification plant at the Taung Dam (this never featured) or pumping water to the Pudimoe Water Treatment Works (an expensive option, but one that was ultimately decided upon).[87] In the 2020/2021 annual report of Sedibeng Water it was reported that additional water directly for the supply to Taung would be augmented by Taung Water Works that were to be completed in September 2021.[88] He water from this facility will add 11 Mℓ/day to the address the 48 Mℓ/day demand for Taung.

---

[83] MA-T, Special and Ordinary Exco Council Meeting Minutes, 21 August 2012, pp. 84-85.
[84] OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023.
[85] OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023, Files given to the author by the Mr Kruger during visits to the VHWUA in Jan Kempdorp during April 2024. File reference: DWAF, Taung Dam: Water Utilisation Feasibility Study, Minutes for the Stakeholders Committee Meeting No. 3, Taung Local Municipality Boardroom, 29 February 2008.
[86] DWA, Dam Safety Office, Annual Report, 2009/2010, [online source, accessed 11 November 2024, https://www.dws.gov.za/DSO/Documents/DSOAnnualReport2009-10.pdf], p. 15.
[87] Department of Water and Environmental Affairs (DWEA), Speech by Minister E Molewa, The Rollout of the Taung/ Vryburg Bulk Water Project, Dr Ruth Segomotsi Mompati District, 31 March 2012, [online source, accessed: 14 November 2024, https://www.dws.gov.za/Communications/MinisterSpeeches/2012/The%20%20Rollout%20of%20the%20Taung_Vryburg%20Bulk%20Water%20Project.pdf#:~:text=raw%20water%20from%20the%20Taung%20Dam%20to,part%20of%20the%20regional%20bulk%20supply%20scheme].
[88] Sedibeng Water, Annual Report, 2020-2021, [online source, accessed: 29 November 2024, https://static.pmg.org.za/2020-21_Annual_Report_for_Sedibeng_Water_compressed_1.pdf], p. 62.

6.4.2 Agricultural initiatives that have come and gone

This study revealed that some of the changes brought on by the new dispensation after 1994 impacted farmers negatively in the Taung district. One such change was that with the end of the Bophuthatswana government, subsidies to farmers also stopped.[89] Apart from this loss of support, the cost of water is marked as another great limiting factor in furthering crop agricultural growth, especially as its pumping is linked to the costs of electricity.[90] Though the irrigation farming practices from the Taung Irrigation Scheme since 1994 gradually reduced due to high maintenance and running costs, new relationships with stakeholders such as the South African Breweries (SAB) and South African Breweries Malted (SABM) saw a renewed increase in agricultural activities. In 2002, whilst growing barley on 2,400ha contracted farmers managed to produce 10,000 tons of produce for the SAB with some farmers also noted to have sold their produce to the open market.[91] Additionally, according to the National Development of Agriculture's economic analysis (as quoted by Kloppers), in 2004 the GDP contribution of agriculture to the country's economy from the North-West Province was 8.6%. In addition, 16.7% of employment opportunities were also provided for in this province's agricultural sector. In another route, in 2005 in the minutes of a meeting held between the political leaders of the municipality and the three traditional leaders of the Taung area, various projects were discussed as a means towards poverty alleviation. One of these projects was similar to an initiative investigated in 2003 which was angling as sporting events,[92] but rather involved fish farming at the Spitskop and Taung Dams which should have commenced in 2004.[93] The project plan for this endeavour involved the closure of the Pering Mine near Buxton as their attempt to ensure those who would lose their employment with the closure of the mine would find employment elsewhere. The Taung Dam was chosen as one of the solutions as this venture entailed trout farming. It seemed feasible due to the dam's

---

[89] JE Kokome, Evaluation of irrigation … (MA, Central University of Technology, 2004), p. 10.
[90] SPA, OA-06, Mr Monnapula Senokwane, Farmer at Pudimoe – Mogopela Village, 30 September 2021.
[91] J Seshoka, W de Lange, & N Faysse, The Transformation of Irrigation Boards ... (Working Paper 72, 2004), pp. 50-51.
[92] Department of Agriculture, Conservation and Environment - North-West Province (DACE-NWP), Strategic Plan, April 2003 to March 2006, [online source, accessed: 11 November 2024, https://www.treasury.gov.za/documents/provincial%20budget/2003/strategic%20plans/North%20West/NW%20-%20Vote%2013%20-%20Agriculture,%20Cons%20&%20Env.pdf], p. 19.
[93] MA-R, Minutes of Meeting with Greater Taung Political and Traditional Leadership, Mayor's Office, 22 August 2005.

low levels of pollution and easily manageable depths.[94] In collaboration with the University of Stellenbosch as quality controllers, it was projected that 332 people would have found employment with the project.[95] However, it never featured and reasons for its failure have also proven elusive.

Commercial agriculture, however, still features in the region and contributed R34 million to the South African GDP in 2010, though without contributions made from the Taung Dam Irrigation Scheme.[96] This makes agriculture the second most contributing sector to the economy, after mining.[97] This, even though by 2011 only 88% of the farmers are currently still benefitting from the original Taung Irrigation Scheme having received some form of formal education in agricultural water management.[98] Though the dam cannot be utilised for one of its initial intended purposes, that is, augmenting crop irrigation, expansion outside this prospect in this industry is still possible in the original arrangements of the Taung Irrigation Scheme as noted in Chapters Four and Five.[99]

6.4.3 Interests in the mineral wealth in Taung

It was noted in public meetings captured in an Environmental Management Framework (EMF) Report that diamond mining in the vicinity of the Taung Dam could potentially contribute to the economy and subsequent development of Taung.[100] However, as the EMF report also states, areas identified as positive for potential mining are often regarded as areas of potential conflict, but drivers of development.[101] Nothing captures this as well as the initiatives launched by *Kgosi* Motlhabane of the Batlhaping Ba Ga Maidi tribe. This

---

[94] MA-R, S Lephoi, Pering Social Development Company: Business Plan, (National Productivity Institute), 2003, pp. ii-iii.
[95] MA-R, S Lephoi, Pering Social Development Company: Business Plan, (National Productivity Institute), 2003, pp. 14-15.
[96] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), p. 7.
[97] JP Klopper, Mainstreaming of Smallholder Irrigators … (MA, UFS, 2009), p. 6.
[98] SS Tekana, & OI Oladele, Impact Analysis of Taung Irrigation Scheme on Household Welfare among Farmers in North-West Province, South Africa, *Journal of Human Ecology*, 36(1), 2011, p. 74.
[99] Planning to this effect was done in 2003 in a strategic plan proposed by the Department of Agriculture, Conservation and Environment for the North-West Province. *See* DACE-NWP, Strategic Plan, April 2003 to March 2006, [online source, accessed: 11 November 2024, https://www.treasury.gov.za/documents/provincial%20budget/2003/strategic%20plans/North%20West/NW%20-%20Vote%2013%20-%20Agriculture,%20Cons%20&%20Env.pdf], p. 24.
[100] T Meyer, & D Cilliers, GTLM – EMF report, Project number: CEM 2013/222 and RDLR-0077, 2015, pp. 26-27.
[101] T Meyer, & D Cilliers, GTLM – EMF report, Project number: CEM 2013/222 and RDLR-0077, 2015, p. 64.

tribe has been in collaborations since 2005 with mining companies such as Noble Minerals, exploring alluvial diamonds within 20 km² diamantiferous gravels of the river system.[102] However, since 2006, the *Kgosi* has also been embroiled in legal battles with miners and prospectors digging on his tribal lands. He has since been loath to agree to projects marked for development in the area as he awaits the completion of his prospecting reports. According to a conversation with *Kgosi* Motlhabane in 2024, he sees no point in developing an area (for tourism for example) only to have it demolished years later due to potential mining activities.[103] As such, the development of the area surrounding his side of the Taung Dam awaits these reports before further plans can be made.

6.4.4 Recreational uses and tourism

The Taung Dam was envisioned as a potential tourist attraction when its first soil was turned in 1990[104] and has indeed since featured as a tourist attraction for local populations.[105] In 2012, there were further hopes of marketing Taung by, amongst other stakeholders, the North-West Parks and Tourism Board during their cultural calabash by having the Taung Dam form part of the entertainment activities.[106] Though the Kolong memorial site features a sensitive topic, its value as a space of commemoration holds tourist value. An existing parking lot near both the site and the dam denotes that tourism has likely been part of the planning surrounding the installation of the memorial stone.[107] It also features pathways to recreational spaces situated to the side and behind the dam wall (Figure 6.4). Tourism in this sense has played a role in various projects as the same board in partnership with the Department of Environmental Affairs endeavoured to again boost the area's economy two years later with a more accessible route to the Taung

---

[102] TH Kabanda, Land Use/Cover Changes … (MA, NWU, 2012), p. 8.
[103] SPA, OA-25, *Kgosi* Nyoko Motlhabane, Manthe, 17 April 2024.
[104] Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.
[105] E Torerai, Dam Facelift to Boost Rural Tourism, *The New Age*, 2014-01-10, p. 27; O Maje, Revellers at Taung Dam, *The New Age*, 2018-01-03, p. 7.
[106] E Torerai, Taung Has More Than Just the Cultural Calabash, *The New Age*, 16 September 2013, p. 24.
[107] EC Coetzee, The Greater Taung District Municipality's Places of Interest: A bird's eye view, *in* ES Van Eeden, & A Manson (eds.), *Taung in History: Moments, Memories & Human Encounters* (Ivyline: Vanderbijlpark, 2024), p. 200.

Dam.[108] Their endeavours proved to be successful as the dam has been utilised as a tourist destination for annual events and a space where these events attract fundraisers.[109] Additionally, other cases of tourism to the Taung Dam have also been noted with the scenic village of Kokonyana near Taung Dam as one entry point.[110]

Figure 6-4: Recreational facilities such as benches feature next to the Taung dam wall[111]

Though it features as a much-loved spot for locals, the use of it as a swimming hotspot so close to the dam wall, potential drownings have been a concern.[112] With up to 3,000 visitors to the dam during such social events,[113] the added environmental impact these have was evident when visits to the dam on numerous occasions indicated severe pollution in terms of litter, especially of glass in the form of alcoholic beverages (see Figure 6.5 below).

[108] E Torerai, Dam Facelift to Boost Rural Tourism, *The New Age*, 10 January 2014, p. 27.
[109] O Maje, Revellers at Taung Dam, *The New Age,* 3 January 201, p. 7
[110] T Meyer, & D Cilliers, GTLM – EMF Report, Project number: CEM 2013/222 and RDLR-0077, 2015, p. 27.
[111] Photos taken by the author, 6 October 2022.
[112] O Maje, One Dies Another Drowns at Taung Dam, *Taung Daily News* , 1 January 2014, [online source, accessed: 17 November 2024, https://taungdailynews.com/2014/01/01/one-dies-another-drowns-at-taung-dam/].
[113] O Maje, A Body Search of a Missing Person at Taung Dam Continues, *Taung Daily News,* 2 January 2014, [online source, accessed: 17 November 2024, https://taungdailynews.com/2014/01/02/a-body-search-of-a-missing-person-at-taung-dam-continues/].

Figure 6-5: A large number of bottles are littered around the recreational spaces set up on the left side of the Taung Dam[114]

However, this level of glass pollution also poses a potential form of income for anybody willing to collect them for glass recycling initiatives. No such endeavours were however observed by the author.

6.5 Remaining questions and recommendations for further research

This study is a historical analysis of the socio-environmental impact of the Taung Dam Irrigation Scheme on the region's people and environment dating from the inception of its planning in 1977 to 2023. The study relied on primary and secondary sources and as shortly reflected once more in this chapter, took guidance for their interpretation from a large corpus of historiography on dam irrigation projects from across the world. This study was done as a means to add to the field of water and regional history as very little on the topic of irrigation histories for South Africa's homelands era has thus far featured. As such, during the pursuit of writing up this research a few themes have come to the fore that may benefit from further investigations. One such recurring theme was calling for a better historical understanding of the impact of mining, and especially diamond mining, on the Taung region's development and its impact on the movement of people. One of

[114] Photo taken by author, 30 September 2021.

the challenges was finding concrete proof to the involvement of mining activities concerning the key motivation to the construction of the Taung Dam Irrigation Scheme. I believe with further research into this line of thought, more could be delineated on the topic. Furthermore, though the study mainly pursued an understanding of the development of specifically irrigation agriculture, a broader analysis (inclusive of animal husbandry) of its agricultural development since its settlement may prove interesting. Another grey area, which was already highlighted in Chapter Two, was a need to better understand the historic development of specifically the Bophuthatswana homeland, especially pertaining its economic goals and its endeavours to achieve them. The economic relationship between the Bophuthatswana government and South African government was especially intriguing and may prove insightful as a political history of a region within a region. On a more social-cultural note, the impact of technological advances on changing cultural dynamics especially seemed a point that were subtly overlooked by both society (based on fieldwork observations) and historians alike. Considering all these potential further pursuits, that the study area holds value for postgraduate students (and other researchers) has also been evident in Chapter Two's analysis of intellectual contributions for especially the Taung region remains true.

BIBLIOGRAPHY

Primary Sources

Archival

Mahikeng Provincial Archive (MPA), Mahikeng, Bophuthatswana, Office of the President, 206, OP 6/16/2001, Department of Agriculture and Forestry, Routine Enquiries, Memorandum to the Executive Council, 22 November 1978.

Mahikeng Provincial Archive (MPA), Republic of Bophuthatswana, Office of the President, Department of Works and Housing, Annual Report, 1979-1980.

Mahikeng Provincial Archive (MPA), Office of the President, Anon, Five Years of Independence: Republic of Bophuthatswana, ca.1982, pp. 19-21.

Mahikeng Provincial Archive (MPA), Mahikeng, Republic of Bophuthatswana, 321, 11/1/20, Office of the President, Departments. Water Corporation (Annual reports, Minutes), Draft Policy Statement, Oct 1982.

Mahikeng Provincial Archive (MPA), Office of the President, Republic of Bophuthatswana, Office of the President, Agenda and Minutes, Drought Relief, 27 March 1985-1 August 1985.

Mahikeng Provincial Archive (MPA), Office of the President, Republic of Bophuthatswana, A Mation on The March: Bophuthatswana, 1977-1987, Ten Proud Years.

Mahikeng Provincial Archive (MPA), Office of the President, File 9/6/3 (23), Vol 8, Agenda and Minutes: Drought Relief, 4 July 1988 to 27 February 1989, pp. 129-133.

Mahikeng Provincial Archive (MPA), Office of the President, 242, 9/5/2(21), Part 1, Minutes of the Techincal Working Group meeting no. 05: Taung District Development Plan, 16 October 1989.

Mahikeng Provincial Archive (MPA), Office of the President, 242, 9/5/2(21), Part 1, Taung District Development Plan: Agenda for Minutes, Technical Working Group, Meeting no. 06, 31 January 1990.

Mahikeng Provincial Archive (MPA), Office of the Presidency, 242, 9/5/2(21), Part 1, Taung District Development Plan: Agenda for Minutes, (5-7-1990 to 24-7-1990), folder date: 1978-1990.

Mahikeng Provincial Archive (MPA), Office of the President, 6/1/2(31) Vol 2, Department of the President, Institution, Composition and Jurisdiction of Baphuduhucoana, 1986-1992, Memorandum: Commission of Inquiry into The Land Claim by the Batlhaping Ba Ga Mothibi Tribe, Taung, 23 December 1991.

Mahikeng Provincial Archive (MPA), Office of the President, Mahikeng, Republic of Bophuthatswana, 321, 11/1/20, Office of the President, Departments. Water Corporation (Annual reports, Minutes), Bophuthatswana Water Supply Authority: New Rural Water Supply Policy, 21 December 1993.

Municipal Archive-Reivilo (MA-R), Publication with Municipal Maps: Map of Municipal Borders of Taung Inclusive of Traditional Areas. Map date: February 2000, Map no. 23.

Municipal Archive-Reivilo (MA-R), Lephoi, S, Pering Social Development Company Business Plan, (National Productivity Institute, 2003), pp. 1-7.

Municipal Archive-Reivilo (MA-R), GTLM Minutes of the Meeting with Greater Political and Traditional Leadership, 2005, pp. 1-8.

Municipal Archive-Reivilo (MA-R), Minutes of Meeting with Greater Taung Political and Traditional Leadership, Mayor's Office, 22 August 2005.

Municipal Archive-Reivilo (MA-R), Strijdom, P, & Swart, J, Taung Ostrich Project, Business Model and Key Issues, ca.2006, pp. 1-7.

Municipal Archive-Reivilo (MA-R), M Mphane, Legal Services Officer, Internal Memo, Report to the Meeting held on 27 February 2006 between Kolong, Dikgageng, GTLM, Traditional Leadership, Department of Water Affairs and Forestry and Other Stakeholders, 6 February 2006.

Municipal Archive-Reivilo (MA-R), Consultative Meeting Between Kolong, Dikgageng and the Government, held with Traditional Leadership on Taung Partnership for Development, c.2006-ca.2011, pp. 1-16.

Municipal Archive-Reivilo (MA-R), Office of the Municipal Manager, Internal Memo: Report of a meeting held on 27 January 2006 between Kolong, Dikgageng, GTLM, Traditional Leadership, Department of Water Affairs and Forestry, and Other Stakeholders, 27 January 2006.

Municipal Archive-Reivilo (MA-R), M Mphane, Legal Services Officer, Internal Memo, Report to the meeting held on 27 February 2006 between Kolong, Dikgageng, GTLM, Traditional

Leadership, Department of Water Affairs and Forestry and Other Stakeholders, 6 February 2006.

Municipal Archive-Taung (MA-T), Special and Ordinary Exco Council Meeting Minutes, 21 August 2012.

Municipal Archive-Taung (MA-T), Special and Ordinary Exco Council Meeting Minutes, 29 November 2012.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 3/4835, Ref.: A14/12/7/2/T4, Ontwikkelingswerk Watervoorsiening Besproeiing Taung: Samewerking en Ontwikkeling, Deel 1, 1974-1977.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 3/4832, Ref. A14/12/3/T4, Ontwikkelingswerk. Watervoorsiening. Damme. Brief aan Die Sekretaris van Bantoe-Ontwikkeling-en-Administrasie, Sekretaris van Landbou, Gevare van toeslikking: Spitskopdam, 14 November 1973.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 4/2459, Ref. GB6/5/2/1/T4, Grondsake - Verkryging en vervreemding van trustgrond: I Schmidt, Dryharts Tribal Ranch, The Dynamics of Livestock Farming, Report 2: The Historical Context Within Which This Development is Taking Place – With Special Reference to Land, Agricor, January 1990.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 5385, Ref. H62/7/1/4, Dept. Bantoe Administrasie en Ontwikkeling, Bantoe Landboukollege, ca.1961.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 5760, Ref. H128-1665, Ad hoc Committee's Report on the Lower Taung Reserve, Comments by Chief Agricultural Officer – Taung, 18 November 1954.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 5760, Ref. H128-1665, Beplanning – Taung, 1949-1963.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 5760, Ref. H128-1665, Letter by the Chief Bantu Affairs Commissioner, Suidelike Reservate: Taung Distrik, 1949-1963.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 5760, Ref. H128-1665, Letter by the Chief Bantu Affairs Commissioner, Complaint Sidwell Mankuroane, 26 January 1963.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 5760, Ref. H128-1665, Letter by the Chief Bantu Commissioner, Voorgestelde stigting en ontwikkeling van Taung Bantoestat: Distrik Taung, 1 Oktober 1964

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 10942, Ref. H67/1665/3, Boorgate: Baviaanskloof – Taung.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 10942, Ref. H67/1665/8, Boorgate: Dikhuting – Taung.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 10942, Ref. H67/1665/11, Boorgate: Dryharts – Taung.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 10942, Ref. H67/1665/14, Boorgate: Kolong – Taung.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 10942, Ref. H67/1665/18, Boorgate: Lower Mayakgora – Taung.

National Archive of South Africa (NASA), Bantoe-Administrasie en-Ontwikkeling (BAO), Vol. 10942, Ref. H67/1665/19, Boorgate: Magogong – Taung.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 7927, Ref. 148/337, Part 1, Taungs: Dryharts Location – Water Supply, pp. 7-19.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 7994, Ref. 317/337, Part 1, Taung Native Reserve – Dam Construction.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 8392, Ref. 1/359, Taung: Erection of Bridge over Hartz River, 1920-1928.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 9449, Ref. 25/389, Part 1, Taung. Railway line. Taung Reserve - Northern Lime Corporation, 1935-1936.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 10444, Ref. D1-D11, Mokgareng Dam, District Taungs, 1948-1957.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 10447, Refs. D62-D69, Dams in Taung.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 10447, D62, Mokgareng Dam – Taungs.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 10447, Ref. D64, Manthe Dam – Taungs.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 10447, Ref. D66, Marubising Dam – Taungs.

National Archive of South Africa (NASA), Native Affairs (NTS), Vol. 10447, Ref. D68, Sedukung Dam – Taungs.

National Archive of South Africa (NASA), Native Affairs (NTS)/, Vol. 10447, Ref. D69, Modutung Dam – Taungs.

National Archive of South Africa (NASA), Uitvoerende Raadsbesluite (URU), Vol. 3641/ Ref. 470, Prime Minister's Office, Omskrywing van die Gebiede van die Batlhaping-Stam en Instelling van die Ba Ga Maide- en Bapuduhuchwane-Stamowerheid: Distrik Taung, 9 March 1957.

South African Water History Archival Repository (SAWHAR) Vanderbijlpark, North-West University, Alan Conley Collection (ACHA), Box 38, Item 35 [ACHA/38-035], F Hollingworth & JJ Geringer, Concrete Dams (Draft paper) (1993).

South African Water History Archival Repository (SAWHAR) Vanderbijlpark, North-West University, Department Heads of Water (DHW), LA MacKenzie (LM), Box 2, Item 11, [2-011], Cost of Dams, Correspondence Letters Dated Between 29 April 1952 – 12 May 1952.

South African Water History Archival Repository (SAWHAR), Paul Roberts Collection (PRC), ICOLD (PRCIC).

South African Water History Archival Repository (SAWHAR), Paul Roberts Collection (PRC), ICOLD (PRCIC), Box 3, Item 22, [3-022], ICOLD, Position Paper on Dams And Environment, pp. 1-7.

South African Water History Archival Repository (SAWHAR), Paul Roberts Collection Dam Projects & Research (RCDPR-), Box 21, Item 18, [21-018] AR Turton *et al.*, 2004, *A*

Hydropolitical History of South Africa's International River Basins (WRC Report No. 1220/1/04, Gezina).

South African Water History Archival Repository (SAWHAR), Paul Roberts Collection Personal (PRC), Personal (PRCP), Box 6, Item 6, [6-006], CPR Roberts, Environmental Geotechnics for Water Projects, pp. 58-68, in Course on Environmental Engineering with Geotechnics.

South African Water History Archival Repository (SAWHAR), Paul Roberts Collection (PRC), SANCOLD (PRCSC).

South African Water History Archival Repository (SAWHAR), Waterlit Collection, C-Collection [C2186], Proceedings from the Southern African Irrigation Symposium from June 1991 held in Durban (1995, WRC: Pretoria).

South African Water History Archival Repository (SAWHAR) Vanderbijlpark, North-West University, Zoltan Kovacs Collection (ZKC), 627.8 LAR, JM Jordaan, *et al.* (eds.), *Large Dams and Water Systems of South Africa* (SANCOLD, Pretoria: 1994).

Western Cape Archives (WCA)/ A12 - Unknown, Conditions Applicable to the Co-operative Dairy Farming Scheme: Taung, date unknown [draft contract].

Western Cape Archives (WCA)/ 1 TGS, Vol 4/27, Ref. N7/3 and Ref. N8/18/3, Correspondence: Native Rain Doctor in Taung's Reserve, dated March 1908.

Interviews

Personal Collection Nadine Smit (PCNS), E-mail Communication, N Smit/L van Vuuren, 8-9 October 2019.

Smit Personal Archive (SPA), Oral Archive (OA-1), Mr Macdoland Motlabane, & Mr GG Mocwiri, Department of Agriculture – Taung office, 29 September 2021.

Smit Personal Archive (SPA), Oral Archive (OA)-04, Mr Tebogo Thapiso, Cattle herder, Manthe, 30 September 2021.

Smit Personal Archive (SPA), Oral Archive (OA)-05, Orapeleng Talakase (41) (Government official), Taung Mall, Taung, 30 September 2021.

Smit Personal Archive (SPA), Oral Archive (OA)-06, Mr Monnapula Senokwane, Vegetable farmer, Taung (Pudimoe), 30 September 2021.

Smit Personal Archive (SPA), Oral Archive (OA)-09, Mr Joseph Mapunyana, Teacher at Taung Agricultural School, 1 October 2021.

Smit Personal Archive (SPA), Oral Archive (OA)-16, Mrs Violet Mabisang and Mr Josef Maboitshege, residents at Manthe, 6 October 2022.

Smit Personal Archive (SPA), Oral Archive (OA)-17, Albertina Phutieagae (79), a previous resident of Kolong now resident at Manthe, and Dodo Gaenone, son of Mrs Albertina Phutieagae and resident at Manthe, Ba Ga Maidi Council Office, Manthe - Taung, 6 October 2022.

Smit Personal Archive (SPA), Oral Archive (OA)-18, De'Dre Titus, Vaalharts Water User Association, Water Bailiff at Taung station, 6 October 2022.

Smit Personal Archive (SPA), Oral Archive (OA)-19, Mr Joseph Mothibi, Rrangwane to Kgosi Mothibi, Batlhaping Ba Ga Mothibi Council Offices, 7 November 2022.

Smit Personal Archive (SPA), Oral Archive (OA)-20, Niel van Eeden & Kobus Harbron, VHWUA, online meeting, 12 October 2022

Smit Personal Archive (SPA), Oral Archive (OA)-22, Mr Patrick Mothibi (Rrangwane to Kgosi Mothibi), Batlhaping Ba Ga Mothibi tribal offices, 6 October 2022.

Smit Personal Archive (SPA), Oral Archive (OA)-23, Mr Gert Kruger, (Ex-CEO of VHWUA), Potchefstroom: 27 November 2023.

Smit Personal Archive (SPA), Oral Archive (OA)-24, Mr Kenny Moepang, grandson of chief of Kolong village, Taung, 16 April 2024.

Smit Personal Archive (SPA), Oral Archive (OA)-25, Kgosi Nyoko Motlhabane, Ba Ga Maidi Tribal Offices, Manthe, 17 April 2024.

Smit Personal Archive (SPA), Oral Archive (OA)-26, Mr Ian Smit, Retired employee of Department of Lands, Hartswater: 18 April 2024.

Taung Research Project, Oral Archive (OA)-12, Community Group Meeting in Taung Hotel School, Interviewer: Prof ES Van Eeden, 5 May 2022.

Secondary Sources

Periodicals (Newspapers and Magazines)

Allerhand, A, Hydroelectric Power: The First 30 Years [History], *IEEE Power and Energy Magazine*, 18(5), 2020, pp. 76-87.

Anon, Irrigation Scheme That Heralded a New Era, *Civil Engineering*, 7(7), Jul 1965, p. 178.

Anon, Bophuthatswana, *African Insight*, 14(2) Jan 1984, pp. 133-136.

Anon, Taung Gets a 90m Cubic Metres Capacity Dam, *Bophuthatswana Pioneer,* 12(3), July-September 1990, p. 5.

Anon, Bophuthatswana's Living Gold, *Bophuthatswana Pioneer*, 14(1), Feb/Mar 1992, pp. 10-11.

Anon, Taung: A Dam for the People, *Civil Engineer in South Africa*, 2(7), 1994, pp. 11-13.

Government Gazette, Department of Irrigation, Vaal River Development Scheme, No. 2651, 21 November 1952.

Jordaan, JJ, The Civil Engineering Aspects of Improvements to the Vaalharts Water Scheme, *Civil Engineering*, 2(3), March 1994, pp. 21-25.

Lyu, Z, Chai, J, Xu, Z, Qin, Y, & Cao, J, A Comprehensive Review on Reasons For Tailings Dam Failures Based on Case History, *Advances in Civil Engineering*, (1), 2019, pp. 1-18.

Magyar, K, Planning for Economic Development in Bophuthatswana, *Indicator South Africa*, 2(1), 1984, pp. 11-13.

Mangope, LM, Mangope on Progress in Bophuthatswana, *Africa insight*, 12(2), 1982, pp. 65-73.

Mfoloe, M, Land for the Poor of Taung, *Sowetan,* 2003-09-29, p. 8.

Roodt, MJ, Bophuthatswana's State Farming Projects: An Aggro Business? *Indicator SA*, 3(1), 1985, pp. 6-9.

Torerai, E, Dam Facelist to Boost Rural Tourism, *The New Age*, 10 January 2014, p. 27.

Van A de Jager, AM, & Marais AH, Die Aanloop tot die Vaalhartsbesproeiingskema, *Civil Engineering*, 36(1), January 1994, p. 6-12.

Van Vuuren, L, Large Dams and The Environment: SA's Cooperative History (1945-1980), *Civil Engineering*, August 2013, pp. 40-45.

Online sources

African Union, The Comprehensive African Agricultural Development Programme, 2021, [online source, accessed: 1 September 2024, https://au.int/en/articles/comprehensive-african-agricultural-development-programme].

Ashton, PJ, Earle, A, Malzbender, D, Moloi, MBH, Patrick, MJ, & Turton, AR, A Compilation Of All The International Freshwater Agreements Entered Into By South Africa With Other States, WRC Report No. 1515/1/06, [online source, accessed: 16 November 2024, https://www.wrc.org.za/wp-content/uploads/mdocs/1515-1-061.pdf].

Bailey, A, The Orange-Senqu River Basin Infrastructure Catalogue, ORASECOM Report 001/2013, [online source, accessed: 18 Apr 2022, https://wis.orasecom.org/content/study/UNDP-GEF/InfrastructureCatalogue/Documents/Reservoirs/Taung%20Dam.pdf].

Chakraborti, H, History of Irrigation in Ancient India, *Proceedings of the Indian History Congress*, 32(1), 1970, pp. 150-156, [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44141060].

Crause, R, South African Inflation calculator, [Online Source, Accessed: 21 July 2024, https://inflationcalc.co.za/?date1=1963-07-01&date2=2024-07-21&amount=300].

Colajacomo, J, & Chen, C, The Chixoy dam: The Maya Achi'genocide. The story of forced resettlement, *Contributing paper to Displacement, Resettlement, Rehabilitation, Reparation and Development. World Commission on Dams Thematic Review 1.2: Dams, Indigenous People and vulnerable ethnic minorities*, 1999, pp. 1-20, [online source, accessed: 30 August 2024, http://che.rabinal.info/doc/ChixoyDam_StoryOfForcedResettlement.pdf].

Data First, South African Census, 1980, [online source, accessed: 5 September 2024, https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/252/data-dictionary/F2].

Department of Water Affairs and Sanitation, Provincial State of Dams, n.d. [online source, accessed: 7 June 2024, https://www.dws.gov.za/Hydrology/Weekly/ProvinceWeek.aspx?region=NW].

Department of Water Affairs and Forestry (DWAF), South Africa, *Lower Vaal Water Management Area: Internal Strategic Perspective*, DWAF Report No P WMA 10/000/00/0304, 2004, [online source, accessed: 4 October 2023, https://www.dws.gov.za/Documents/Other/WMA/10/LowerVaalISPOct04full.pdf].

Department of Agriculture, Conservation and Environment - North-West Province (DACE-NWP), Strategic Plan, April 2003 to March 2006, [online source, accessed: 11 November 2024, https://www.treasury.gov.za/documents/provincial%20budget/2003/strategic%20plans/North%20West/NW%20-%20Vote%2013%20-%20Agriculture,%20Cons%20&%20Env.pdf].

Department of Water Affairs (DWA), Dam Safety Office, Annual Report, 2009/2010, [online source, accessed 11 November 2024, https://www.dws.gov.za/DSO/Documents/DSOAnnualReport2009-10.pdf].

Department of Water and Environmental Affairs (DWEA), Speech by Minister E Molewa, The Rollout of the Taung/ Vryburg Bulk Water Project, Dr Ruth Segomotsi Mompati District, 31 March 2012, [online source, accessed: 14 November 2024, https://www.dws.gov.za/Communications/MinisterSpeeches/2012/The%20%20Rollout%20of%20the%20Taung_Vryburg%20Bulk%20Water%20Project.pdf#:~:text=raw%20water%20from%20the%20Taung%20Dam%20to,part%20of%20the%20regional%20bulk%20supply%20scheme].

Durand, JF, Proposed electrification project within Taung Skull buffer zone in Buxton (Norlim), North West Province, Palaeontological Impact Assessment, (Unpublished report for Integrated Specialist Services (Pty) Ltd), 2017, [online source, accessed: 30 September 2024, https://sahris.sahra.org.za/sites/default/files/heritagereports/Taung-Report.pdf].

FAO, Dams and Agriculture in Africa, FAO AQUASTAT Dams Africa – 070524, 2007, [Online source, Accessed: 17 April 2022, https://www.fao.org/3/bc815e/bc815e.pdf].

Fourie, I (ed.), Investigation of Groundwater and Surface Water Interaction for the Protection of Water Resources in the Lower Vaal Catchment: Inception Report, WSM Leshika Consulting, Report no. RDM/WMA05/00/GWSW/0122, (Department of Water and Sanitation (DWS): South

Africa, Pretoria, 2022), [online source, accessed: 10 November 2024, https://www.dws.gov.za/wem/currentstudies/doc/groundwater/Inception%20Report%20.pdf].

Greater Taung Local Municipality (GTLM), Leadership, [online source, accessed: 20 January 2023, https://www.gtlm.gov.za/leadership/traditional-leadership/batlhaping-ba-ga-mothibi/].

Haasbroek, B, Orange-Senqu Infrastructure Catalogue: The Taung Dam, 2013, [online source, accessed: 16 June 2020, http://wis.orasecom.org/orange-senqu-infrastructure-catalogue-reservoirs/].

Hendrick, LB, Speech: Unveiling of the Taung Dam Memorial Stone by DWAF Minister, Manthe Village, 8 September 2007 [online source, accessed: 24 April 2024, https://www.dws.gov.za/Communications/MinisterSpeeches/2007/TaungDam8Sep07.pdf].

International Commission on Large Dams. Publications, [online source, accessed: 15 July 2020, https://www.icold-cigb.org/GB/publications/publications.asp].

Kanyane, R, Revellers Flock to Taung Dam for New Year Celebration, *Taung Daily News*, 3 January 2018 [online source, accessed: 30 September 2023, https://taungdailynews.com/2018/01/03/].

Kottakkunnummal, M, TP Kuttiammu: How an Irrigation Engineer Shaped Our Present [online source, accessed: 12 August 2024, https://www.kuttiammusahib.com/research.pdf].

Kumar, R, Irrigation Technology in Medieval India: a Study of Satpula Weir, *Proceedings of the Indian History Congress*, Golden Jubilee Session, 50, 1989, pp. 850-854, [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44146147].

Maje, O, One Dies Another Drowns at Taung Dam, *Taung Daily News* , 1 January 2014, [online source, accessed: 17 November 2024, https://taungdailynews.com/2014/01/01/one-dies-another-drowns-at-taung-dam/].

Maje, O, A body Search of a Missing Person at Taung Dam Continues, *Taung Daily News,* 2 January 2014, [online source, accessed: 17 November 2024, https://taungdailynews.com/2014/01/02/a-body-search-of-a-missing-person-at-taung-dam-continues/].

Makhambeni, R, North West Provincial Legislature Concludes Visit to Taung Flood Villages, North-West Provincial Legislature, 9 April 2006, [online source, accessed: 30 September 2024,

https://www.gov.za/af/news/north-west-provincial-legislature-concludes-visit-taung-flood-villages-09-apr-2006].

Maluleke, R, Census of Commercial Agriculture, North West: Financial and Production Statistics, Report No. 11-02-07, (StatsSA: Pretoria, 2017), p. 13, [online source, accessed: 13 October 2024, https://www.statssa.gov.za/publications/Report-11-02-07/Report-11-02-072017.pdf].

Mosche, T, 2022, Heavy Rains in North-West Damage at Least 40 Houses, [online source, accessed: 30 September 2024, https://www.sabcnews.com/sabcnews/heavy-rains-in-north-west-damage-at-least-40-houses/#:~:text=26%20April%202022%2C%2011%3A41%20%5BSAST%5D%201%20minute%20Heavy,rains%20have%20also%20severely%20damaged%20the%20local%20roads].

Mothibedi, L, Over 250 Graves Remain Under a Dam in Kolong, SABC News, [online source, accessed: 25 March 2023, https://www.youtube.com/watch?v=FslZrWQc3SQ&list=WL&index=19].

Office of the Premier, Spatial Development Framework of 2016, (Republic of South Africa, North West Provincial Government, 2017), [online source, accessed: 30 September 2024, https://code4sa-gazettes.s3.amazonaws.com/archive/ZA-NW/2017/provincial-gazette-ZA-NW-vol-258-no-7723-dated-2017-01-12.pdf].

Orange-Senqu River Commission (ORASECOM), *Wentzel dam*, The Orange–Senqu River Basin Infrastructure Catalogue, ORASECOM Report 001/2013, [online source, accessed: 13 January 2023, https://wis.orasecom.org/content/study/UNDP-GEF/InfrastructureCatalogue/Documents/Reservoirs/Wentzel%20Dam.pdf].

Passchier, CW, & Sürmelihindi, G, Sinter Deposits in Roman Aqueducts, *AOURAS*, 6, 2010, pp. 276-281, [online source, accessed: 13 August 2024, https://www.researchgate.net/publication/292099878_Sinter_deposits_in_Roman_aqueducts].

Ranade, AK, Water Sources and Irrigation in Medieval Maharashtra, *Proceedings of the Indian History Congress*, 66, 2005-2006, pp. 330-333, [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44145849].

Republic of Bophuthatswana, Constitution, (5th Ed.), 1991, pp. 56-57, [online source, accessed: 29 September 2023, http://www.nationalarchives.gov.za/sites/default/files/ITEM_COD-0066-0151A-_-001.pdf].

Robinson, S, The Experience with Dams and Resettlement in Mexico, *Contributing paper to Displacement, Resettlement, Rehabilitation, Reparation and Development, World Commission on Dams Thematic Review 1.3: Displacement, Resettlement, Rehabilitation, Reparation and Development*, 2000, pp. 1-12, [online source, accessed: 30 August 2024, https://www.irn.org/files/pdf/mexico/Resettlement.pdf].

SANCOLD, c.2024, South African Register of Large Dams: Dam Safety - Small and Large dams [online source, accessed: 28 February 2024, https://sancold.org.za/sa-register-of-large-dams/].

Sedibeng Water, Annual Report, 2020-2021, [online source, accessed: 29 November 2024, https://static.pmg.org.za/2020-21_Annual_Report_for_Sedibeng_Water_compressed_1.pdf],

South Africa, Department of Water Affairs and Forestry (DWAF), A History of the First Decade of Water Service Delivery in South Africa, 1994 to 2004 (Department: Water Affairs and Forestry, 2004), [online source, accessed: 18 October 2020, https://www.gov.za/sites/default/files/gcis_document/201409/dwafirstdecade070720060.pdf].

South African Commission on Large Dams, Publications, [online source, accessed 15 July 2020, https://sancold.org.za/publications/].

South African Weather Service, *Annual State of the Climate of South Africa 2021,* WCS-CLS-ASC-2021 (Pretoria: South Africa, 2022), [online source, accessed: 30 September 2023, https://www.weathersa.co.za/Documents/Corporate/Annual%20State%20of%20the%20Climate%202021_04042022114230.pdf].

Srivastava, S, Means of Irrigation in North Central India During The Early Medieval Period, *Proceedings of the Indian History Congress*, 66, 2005-2006, pp. 259-263, [online source, accessed: 29 May 2024, https://www.jstor.org/stable/44145844].

StatsSA, Greater Taung, 2011, [online source, accessed: 9 June 2020, http://www.statssa.gov.za/?page_id=993&id=greater-taung-municipality].

The Citizen Reporter, 2021, North-West motorists Urged to Avoid N18 in Taung Due to Flooding, *The Citizen* [online source, accessed, 30 September 2024, https://www.citizen.co.za/news/south-africa/weather/north-west-motorists-urged-to-avoid-n18-in-taung-due-to-flooding/].

Turton, A, n.d., Scientific Publications, [Online source, Accessed: 27 April 2022, https://www.anthonyturton.com/scientific-publication-anthony-turton.php].

United States Central Intelligence Agency, Bophuthatswana, 1977, (Library of Congress), [online source, accessed: 2 June 2020, https://www.loc.gov/item/80692110/].

Van Vuuren, L, Water savings: Persistence Pays Off at Vaalharts, *The Water Wheel*, Nov/Dec 2009, pp. 12-15, [online source, accessed: 11 November 2024, https://www.wrc.org.za/wp-content/uploads/mdocs/08%20vaalharts%20p%2012-15.pdf].

Van Vuuren, L, & Backeberg, G, Sustainable Irrigation in South Africa: Evidence from History, International Commission on Irrigation and Drainage 2015, Workshop Paper, [online source, accessed: 24 September 2024, https://icid2015.sciencesconf.org/75961/ICID_26th_ERC_Paper_final_by_L_van_Vuuren_and_G_R_Backeberg_for_WG_HIST_Side_Event.pdf].

Wikimedia Commons, 2005, Clanwilliam Dam, [online source, accessed: 25 September 2022, https://commons.wikimedia.org/wiki/File:Clanwilliam_Dam_2005.jpg].

Wikimedia Commons, 2012, South Africa-Eastern Cape-Paul Sauer Dam, [online source, accessed: 25 September 2022, https://commons.wikimedia.org/wiki/File:South_Africa-Eastern_Cape-Paul_Sauer_Dam01.jpg].

World Bank, *World Development Report 2008: Agriculture for Development* (Washington DC, The World Bank: 2007), [online source, accessed: 21 Dec 2023, https://openknowledge.worldbank.org/entities/publication/ba969388-b5eb-5155-b8f2-6d323a6e5a52].

Published

Acocks, JPH, *Veld Types of South Africa,* (2nd Ed.), (Botanical Research Institute: Pretoria, 1975).

Adams, WM, & Anderson, DM, Irrigation Before Development: Indigenous and Induced Change in Agricultural Water Management in East Africa, *African Affairs*, 87(349), October 1988, pp. 519-535.

Adams, WM, How Beautiful is Small? Scale, Control and Success in Kenyan Irrigation, *World Development*, 18(10), 1990, pp. 1309-1323.

Adams, WM, Large Scale Irrigation in Northern Nigeria: Performance and Ideology, *Transactions of the Institute of British Geographers*, 16(3), 1991, pp. 287-300.

Adams, WM, T Potkanski, T, & Sutton, JEG, Indigenous Farmer-Managed Irrigation in Sonjo, Tanzania, *The Geographical Journal*, 160(1), Mar. 1994, pp. 17-32.

Adams, WA, *Wasting the Rain* (Routledge Revivals). 1st Ed. (Taylor and Francis: London, 2014).

Akhter, M, & Ormerod, KJ, The Irrigation Technozone: State Power, Expertise, and Agrarian Development in The U.S. West and British Punjab, 1880–1920, *Geoforum*, (60), Mar. 2015, pp. 123-132.

Alexander, JA, *The Life of George Chaffey: The Story of Irrigation Beginnings in California and Australia* (Macmillan & Company Limited: Melbourne, 1928).

Ammirati, C, "You'll See Our Tracks": The Raquette River Dams Oral History Project, Voices: *The Journal of New York Folklore*, 43(1-2), Spring-Summer 2017, pp. 24-31.

Anderson, D, & Grove, RH (eds.), *Conservation in Africa: Peoples, Policies and Practice* (Cambridge University Press: Cambridge, 1988).

Aton, JM, *John Wesley Powell: His Life and Legacy* (Bonneville Books: Salt Lake City, 2010).

Aubriot, O, The History and Politics of Communal Irrigation: A Review, *Water Alternatives*, 15(2), pp. 307-340.

Baba, A, Tsatsanifos, C, El Gohary, F, Palerm, J, Khan, S, Mahmoudian, SA, Ahmed, AT, Tayfur, G, Dialynas, YG, & Angelakis, AN, Developments in Water Dams and Water Harvesting Systems Throughout History in Different Civilizations, *International Journal of Hydrology,* 2(2), pp. 150-166.

Bailey, AM, & Llobera, JR, Karl A. Wittfogel and The Asiatic Mode of Production: A Reappraisal, *The Sociological Review*, 27(3), 1979, pp. 541-559.

Banister, JM, Are You Wittfogel or Against Him? Geophilosophy, Hydro-Sociality, and The State, *Geoforum*, (57), Nov. 2014, pp. 205-214.

Barker G, & Gilbertson D (eds.), *The Archaeology of Dryland: Living at The Margin* (London: Routledge, 2000).

Barnett, T, *The Gezira Scheme: An Illusion of Development* (London: Cass, 1977).

Bate, R, & Tren, R, *The Cost of Free Water: The Global Problem of Water Misallocation and The Case of South Africa* (The Free Market Foundation: Johannesburg, 2002).

Beer, CW, Social Development in The Gezira Scheme, *African Affairs*, 54(214), 1955, pp. 42-51.

Beinart, W, Delius, P, & Trapido, S (eds.), *Putting a Plough to The Ground: Accumulation and Dispossession in Rural South Africa, 1850-1930* (Raven Press: South Africa, 1986).

Beinart, W, Transkeian Smallholders and Agrarian Reform, *Journal of Contemporary African Studies*, 11, 1992, pp. 178-199.

Beinart, W, & Coates, P, *Environment and History: The Taming of Nature in the USA and South Africa* (Taylor & Francis: India, 2002).

Beinart, W, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950* (OUP Oxford: United Kingdom, 2008).

Beinart, W, Beyond 'Homelands': Some Ideas about the History of African Rural Areas in South Africa, *South African Historical Journal*, 64(1), 2012, pp. 5-21.

Bellanta, M, Engineering the Kingdom of God: Irrigation, Science and the Social Christian Millennium, 1880–1914, *Journal of Religious History,* 32(1), Mar. 2008, pp. 1-15.

Bembridge, TJ, Problems and lessons From Irrigation Projects in Less Developed Countries of Africa, *Development Southern Africa*, 3(4), 1986, pp. 600-618.

Best, ACG, South Africa's Border Industries: The Tswana Example, *Annals of the Association of American Geographers*, 61(2), Jun. 1971, pp. 329-343.

Bisht, TC, Development-Induced Displacement and Women: The Case of the Tehri Dam, India, *The Asia Pacific Journal of Anthropology*, 10(4), 2009, pp. 301-317.

Black, ST, *Biography of San Diego County, California: A Record of Settlement, Organization, Progress and Achievement,* (SJ Clark: Chicago, 1913).

Borcherds, PB, *An Auto-Biographical Memoir of Petrus Borchardus Borcherds* (Books for Library Press: Freeport, New York, 1861).

Brannstrom, C, John Shary, Charles Pease, and Contested Irrigation Landscapes in Early-Twentieth-Century South Texas, *Journal of Historical Geography,* 38(3), 2012, pp. 234–246.

Breutz, PL, Tswana Tribal Governments Today, *Sociologus,* 8(2), 1958, pp. 140-154.

Breutz, PL, *The Tribes of The Districts of Taung and Herbert*, (Government Printer: Pretoria, 1968).

Brown, JA, Memoir of Colonel Sir Proby Cautley, F. R. S., 1802-1871, Engineer and Palaeontologist, *Notes & Records: The Royal Society of the History of Science*, 34, 1980, pp. 185–225.

Brioch, J, Was It Really The 'White Man's Burden'?: The Non-British Engineers Who Engineered The British Empire, *Britain and the World*, 9(2), Sept. 2016, pp. 197-212.

Bundy, C, *The Rise and Fall of The South African Peasantry* (David Philip: Cape Town, 1988).

Burchell, WJ, *Travels in The Interior of Southern Africa*, Vol 2 (Longman: London, 1822).

Burney, JA, & Naylor, RL, Smallholder Irrigation as A Poverty Alleviation Tool In Sub-Saharan Africa, *World Development*, 40(1), 2012, pp. 110-123.

Butler, HC, The Roman Aqueducts as Monuments of Architecture, *American Journal of Archaeology*, 5(2), 1901, pp. 175-199.

Butler, J, Rotberg, IR, & Adams, J, *The Black Homelands of South Africa: The Political and Economic Development of Bophuthatswana and Kwa-Zulu* (University of California Press: Berkeley, ca.1997).

Butzer, KW, Archaeology and Quaternary Environment in The Interior of Southern Africa *in* RG Klein (ed.), *Southern African prehistory and paleoenvironments* (AA Balkema: Rotterdam, 1984).

Chakawa, J, & Chambwe, TV, Displacement and Livelihoods Through the Construction of Small Dams: Legacies of Magunje Dam in Hurungwe District, Mashonaland West Province, Zimbabwe, *Africanus*, 50(2), 2020, pp. 1–16.

Chattopadhyaya, BD, Irrigation in Early Medieval Rajasthan, *Journal of the Economic and Social History of the Orient*, 16(2/3), Dec. 1973, pp. 298-316.

Childe, VG, *New Light on the Most Ancient East* (Percy Lund and Humphries Co LTD: London, 1934).

Cioc, M, *The Rhine: An Eco-Biography, 1815-2000* (University of Washington Press: USA, 2002).

Coetzee, H, Nell, W, & Bezuidenhout, C, An Assessment Of Perceptions, Sources and Uses of Water Among Six African Communities in the North-West Province of South Africa, *Water SA*, 42(3), Jul. 2016, pp. 432-441.

Cookson-Hills, C, The Aswan Dam and Egyptian Water Control Policy, 1882 – 1902, *Radical History Review*, (116), 2013, pp. 59–85.

Cornell, RD, *The Chippewa: Biography of a Wisconsin Waterway* (Wisconsin Historical Society: Wisconsin, 2017).

Costa, JE, *Floods from Dam Failures,* 85(560), (US Geological Survey: Vancouver: 1985).

Costa, JE, & Schuster, RL, *Documented Historical Landslide Dams from Around The World*, 91(239), (US Geological Survey: Vancouver, 1991).

Cowley, J, & Lemon, A, Bophuthatswana: Dependent Development in a Black 'Homeland', *Geography*, 71(3), Jun. 1986, pp. 252-255.

Cresswell, J, *Qualitative Inquiry and Research Design: Choosing Among Five Traditions* (Sage: Thousand Oaks, CA, 2008).

Crowell, WG, History and Tradition: The Origins of The Quebei Reservoir, *T'oung Pao*, *98*(4-5), 2012, pp. 349-384.

Cuomo, S, A Roman Engineer's Tales, *Journal of Roman Studies*, 101, 2011, pp. 143-147.

De la Hey, M, & Beinart, W, Why Have South African Smallholders Largely Abandoned Arable Production in Fields? A Case Study, *Journal of Southern African Studies*, 43(4), 2017, pp. 753-770.

De Wet, C, Betterment Planning in South Africa: Some Thoughts on Its History, Feasibility and Wider Policy Implications, *Journal of Contemporary African Studies*, 6(1–2), 1987, pp. 85-122.

De Wet, C, Betterment Planning in a Rural Village in Keiskammahoek, Ciskei, *Journal of Southern African Studies*, 15(2), Jan. 1989, pp. 325-345.

De Wet, C, The Socio-Ecological Impact of Development Schemes in The 'Homelands' of South Africa, *South African Journal of Science*, July-October 1990, 86, pp. 440-447.

Deakin, A & Pratt, A, *David Syme, the Father of Protection in Australia* (Ward Lock & Co LTD: London, 1908).

Deverell, W, & Sitton, T, *Water and Los Angeles: Tale of Three Rivers, 1900-1941* (University of California Press: California, 2017), pp. 81-116.

Dornan, SS, Rainmaking in South Africa, *Bantu Studies*, 3(2), Jul. 1928, pp. 185-196.

Drummond, J, Rural Land Use and Agricultural Production in Dinokana Village, Bophuthatswana, *GeoJournal*, 22(3), Nov. 1990, pp. 335-343.

Drummond, J, Reincorporating the Bantustans into South Africa: The Question of Bophuthatswana, *Geography,* 76(4), 1991, pp. 369-373.

Dugard, J, South Africa's Independent Homelands: An Exercise in Denationalization, *Denver Journal of International Law and Policy*, 10(1), 1980, pp. 11-36.

Earle, A, Jagerskog, A, & Ojendal, J, (eds.), *Transboundary Water Management: Principles and Practice* (Earthscan Publishing: London, 2010).

Easton, D, *A Systems Analysis of Political Life* (John Wiley: New York, 1965).

Eicher, C, & Witt, L, *Agriculture in Economic Development* (McGraw-Hill Book Company: New York, 1984).

Einbinder, N, *Dams, Displacement and Development: Perspectives from Rio Negro, Guatemala* (Springer: Switzerland, 2017).

Elhance, AP*, Hydropolitics in The Third World, Conflict and Co-Operation in International River Basins* (United States of America Institute of Peace Press: Washington DC, 1999).

Elmusa, SS, The Land-Water Nexus in the Israeli-Palestinian Conflict, *Journal of Palestine Studies*, 25(3), 1996, pp. 69-78.

Erasmus, P, The ‘Lost’ South African Tribe – Rebirth of the Koranna in the Free State, *New Contree* (50), Nov. 2005, pp. 77-91.

Ertsen, MW, Colonial Irrigation: Myths of Emptiness, *Landscape Research*, 31(2), 2006, pp. 147-167.

Ertsen, WM, The Development of Irrigation Design Schools or How History Structures Human Action, *Irrigation and Drainage*, 56, 2007, pp. 1-19.

Farrington, IS, Land Use, Irrigation and Society on The North Coast of Peru in The Prehispanic Era, *Zeitschrift fur Bewasserungswirtschaft*, 12, 1977, pp. 151-186.

Feinstein, CH, *An Economic History of South Africa: Conquest, Discrimination and Development* (Cambridge University Press: New York, 2005).

Fellman, S, & Rahikainen, M, *Historical Knowledge: In Quest of Theory, Method and Evidence* (Cambridge Scholars Publisher: Newcastle upon Tyne, 2012).

Ferguson, J, *The Anti-Politics Machine Development, Depoliticization, and Bureaucratic Power in Lesotho* (University of Minnesota: Minneapolis, 1994).

Fernando, AND, Major Ancient Irrigation Works of Sri Lanka, *Journal of the Sri Lanka Branch of the Royal Asiatic Society*, New Series, 22, 1980, pp. 1-24.

Fuggle, RF, & Rabie, MA (eds.), *Environmental Management in South Africa* (Juta: Cape Town, 1992).

Fuller, LL, Irrigation and Tyranny, *Stanford Law Review*, 17(6), Jul. 1965, pp. 1021-1042.

Funke, N, Nortje, K, Findlater, K, Burns, M, Turton, A, Weaver, A, & Hattingh, H, Redressing Inequality: South Africa's New Water Policy, *Environment*, 49(3), Apr. 2007, pp. 10-23.

Gaitskell, A, *Gezira: A Story of Development in the Sudan* (London: Faber & Faber, 1959).

Ganoe, JT, The Desert Land Act in Operation, 1877-1891, *Agricultural History*, (Washington), 11, 1937, pp. 142-157.

Ganoe, JT, The Beginnings of Irrigation in the United States, *The Mississippi Valley Historical Review*, 25(1), Jun. 1938, pp. 59–78.

Garcia, RR, Mir, MA, Bitrian, FH, Dios, RL, de Celix Caballero, MD, de Andres Rodriguez-Trelles, M, Minguez, AC, Sanchez, MSM-C, de Agreda, MAP, & Gonzalez-Elipe, JMV (eds.), *Dam Maintenance and Rehabilitation II* (Taylor & Francis: London, 2011).

Gilmartin, D, *Blood and Water: The Indus River Basin in Modern History* (University of California Press: Oakland, California, 2015).

Gouws, CM, “The Tragedy of the Water Commons: The Case of the Lower Orange Water Management Area”, *The Journal for Transdisciplinary Research in Southern Africa*, 4(1), 2008, pp. 251-271.

Grobler, JEH, *The War Reporter: Transvaal Western Border in Republican hands,* Weekly Edition Number 2, 21 October 1899, (Johnathan Ball Publishers: Johannesburg, 2004).

Guimarães, RN, Moreira, VR, Cruz, JR, Saliba, AP, & Amaral, MC, History of Tailings Dam Failure: Impacts on Access to Safe Water and Influence on The Legislative Framework, *Science of The Total Environment*, 15(852), Dec. 2022, 158536, pp. 1-9.

Gunawardana, RAHL, Irrigation and Hydraulic Society in Early Medieval Ceylon, *Past & Present*, (53), Nov. 1971, pp. 3-27.

Heathcote, RL, *Drought and The Human Story: Braving The Bull of Heaven* (Ashgate: Surrey, 2013).

Hess, RH, The Beginnings of Irrigation in the United States, *Journal of Political Economy,* 20(8), 1912, pp. 807–833.

Hirsch, P, The Changing Political Dynamics of Dam Building on the Mekong, *Water Alternatives*, 3(2), 2010, pp. 312-323.

Hogg, R, Development in Kenya: Drought, Desertification and Food Scarcity, *African Affairs*, 86, 1987, pp. 47-58.

Holbrook, G, Lessons to Be Learned from Two Irrigation Schemes, *Development Southern Africa*, 13(4), 1996, pp. 601-609.

Holbrook, G, Water of Life: The Social Effect of an Irrigation Scheme of the Fish River (Eastern Cape), *South African Journal of Ethnology*, 20(1), Mar. 1997, pp. 39-42.

Holbrook, G, Shoring Up Hydraulic Despotism: Class, Race and Ethnicity In Irrigation Politics in the Eastern Cape Province, South Africa, *Journal of Contemporary African Studies*, 16(1), 1998, pp. 117-132.

Holt, GD, Historical Perspectives of Engineering Project Design, Organisation and Management: Construction of The Elan Valley Dams, *Engineering Project Organization Journal*, *3*(4), 2013, pp. 213–226.

Holub, E, *Seven Years in South Africa: Travels, Researches and Hunting Adventures Between The Diamond Fields and The Zambesi. 1872-1879*, (Translated by Ellen F Frewer), Vol 1 (Sampson Low: London, 1881).

Hughes, DM, *Whiteness in Zimbabwe: Race, Landscape and The Problem of Belonging* (Palgrave MacMillan: New York, 2010).

Ijumba, JN, & Lindsay, SW, Impact of Irrigation on Malaria in Africa: Paddies Paradox, *Medical and Veterinary Entomology*, 15(1), 2001, pp. 1-11.

Isaacman, A, Displaced People, Displaced Energy, and Displaced Memories: The Case of Cahora Bassa, 1970-2004, *The International Journal of African Historical Studies*, 38(2), 2005, pp. 201-238.

Isaacman, AF, & Isaacman, BS, *Dams, Displacement, and the Delusion of Development: Cahora Bassa and Its Legacies in Mozambique, 1965–2007* (Ohio University Press, Athens, 2010).

Isaacman, A, & Sneddon, C, Toward a Social and Environmental History of the Building of Cahora Bassa Dam, *Journal of Southern African Studies*, 26(4), 2000, pp. 597-632.

Jacobs, NJ, Environment, Production and Social Difference in the Kalahari Thornveld, c1750-1830, *Journal of Southern African Studies*, 25(3), 1999, pp. 347-373.

Jacobs, NJ, The Great Bophuthatswana Donkey Massacre, *American Historical Review,* 106(2), 2001, pp. 485–507.

Jacobs, NJ, *Environment, Power, and Injustice: A South African History* (Cambridge University Press: Cambridge, 2003).

Jankielsohn, R, Defining Hydropolitics: The Politics of Water in South Africa, *Journal for Contemporary History*, 37(1), Jun. 2012, pp. 123-141.

Jibowo, AA, & Mncina, M, Benefits and Challenges of Maguga Dam Resettlement Scheme to Displaced People in Hhohho Region of Eswatini, *South African Journal of Agricultural Extension*, 47(4), 2019, pp. 18-28.

Jing, J, Rural resettlement: Past Lessons for the Three Gorges Project, *The China Journal*, (38), 1997, pp. 65-92.

Jones, FO, Tukiangyien: China's Ancient Irrigation System, *Geographical Review*, 44(4), Oct 1954, pp. 543-559.

Jones, PS, 'To Come Together for Progress': Modernization and Nation-Building in South Africa's Bantustan Periphery - The Case of Bophuthatswana, *Journal of Southern African Studies*, 25(4), 1999, pp. 579-605.

Josephson, PR, *Hero Projects: The Russian Empire and Big Technology from Lenin to Putin* (Oxford University Press: New York, 2024).

Kanthack, FE, Irrigation Development in South Africa With State Aid, *Agricultural Journal of the Union of South Africa*, 36(5), May 1910, pp. 530-540.

Kenyon, AS, Stuart Murray and Irrigation in Victoria, *Victorian Historical Magazine*, 10, Jun. 1925, pp. 113-117.

Kershner (Jr), FD, George Chaffey and the Irrigation Frontier, *Agricultural History*, 27(4), Oct. 1953, pp. 115-122.

Khan, F, Rewriting South Africa's conservation history: The role of the Native Farmers Association, *Journal of Southern African Studies*, 20(4), Dec. 1994, pp. 499-516.

Kitissou, M, Ndulo, M, Nagel, M, & Grieco, M, *The Hydropolitics of Africa: A Contemporary Challenge* (Cambridge Scholars Publishing: New Caste, 2007).

Klopper, HJ, & Pienaar, GJ, The Historical Context of Land Reform in South Africa and Early Policies, *Potchefstroomse Elektroniese Regsblad*, 17(2), 2014, pp. 676-706.

Kluiving, SJ, & Guttmann-Bond, EB, *Landscape Archaeology between Art and Science: From a Multi- to an Interdisciplinary Approach Book* (Amsterdam University Press: Amsterdam, 2012).

Koloski-Ostrow AO (ed), *Water Use and Hydraulics in the Roman City* (Archaeological Institute of America: Iowa, 2001).

Kuhn, BF, Herries, AI, Price, GJ, Baker, SE, Hopley, P, Menter, C, & Caruana, MV, Renewed Investigations at Taung: 90 Years After The Discovery of Australopithecus Africanus, *Palaeontologia Africana*, 51, 2017, pp. 10-26.

Lahiff, E, *An Apartheid Oasis: Agricultural and Rural Livelihoods in Venda* (Frank Cass: London, 2000).

Language, FJ, Herkoms en Geskiedenis van die Tlhaping, *African Studies*, 1(2), 1942, pp. 115-133.

Lees, SH, Irrigation and Society, *Journal of Archaeological Research*, 2(4), 1994, pp. 361-378.

Leistner, GME, Bophuthatswana: Economic Development – Problems and Policies, *South African Journal of African Affairs,* (2), 1977, pp. 135-148.

Leone, A, Water Management in Late Antique North Africa: Agricultural Irrigation, *Water History*, 4, 2012, pp. 119-133.

Lerer, LB, & Scudder, T, Health Impacts of Large Dams, *Environmental Impact Assessment Review*, 19(2), Mar. 1999, pp. 113-123.

Lipton, M, Litchfield, J, & Faurès, J, The Effects of Irrigation on Poverty: A Framework for Analysis, *Water Policy*, 5(5-6), Oct. 2003, pp. 413-427.

Lolos, YA, The Hadrianic Aqueduct of Corinth (With an Appendix on the Roman Aqueducts in Greece), *Hesperia: The Journal of the American School of Classical Studies at Athens*, 66(2), 1997, pp. 271-314.

Lombard, RTJ, Stigting van die Vaalhartsbesproeiingskema as Heenkome vir Hawelose Armblankes, *Contree*, (24), 1988, pp. 13-20.

Lovin, HT, Dreamers, Schemers, and Doers of Idaho Irrigation, *Agricultural History*, Water and Rural History, 76(2), Spring 2002, pp. 232-243.

Lye, WF, & Murray, C, *Transformations on the Highveld: The Tswana and Southern Sotho* (David Phillip, Cape Town, 1980).

MacKenzie, J, *The London Missionary Society in South Africa: A Retrospective Sketch* (London Missionary Society: London, 1888).

Macmillan, WM, *Bantu, Boer, and Briton: The Making of the South African Native Problem* (Faber & Gwyer: London, 1929).

Madise, M, Christian Emergence Among the Batlhaping Ba Ga Phuduhucwana Tribe in Taung: The London Missionary Society, *Studia Historiae Ecclesiasticae*, 36, 2010, pp. 41-51.

Magubane, P, *Vanishing Cultures of South Africa: Changing Customs in a Changing World* (Rizzoli: New York, 1998).

Mangope, LM, Mangope on Progress in Bophuthatswana, *Africa insight*, 12(2), 1982, pp. 65-74.

Manson, A, & Mbenga, B, Bophuthatswana and the North-West Province: From Pan-Tswanaism to Mineral-Based Ethnic Assertiveness, *South African Historical Journal*, 64(1), 2012, pp. 96-116.

Manson, A, & Mbenga, BK, *Land, Chiefs, Mining: South Africa's North West Province Since 1840* (Wits University Press: Johannesburg, 2014).

Manson, A, *The Valiant Englishman* (Unisa Press: Pretoria, 2021).

Maritz, CJ, The Political System of Bophuthatswana, *African Insight*, (7)2, 1977, pp. 203-212.

Marquardt, G, Water, Wood, and Wild Animal Populations: Seeing the Spread of Rinderpest Through The Physical Environment In Bechuanaland, 1896, *South African Historical Journal*, 53 (2005), pp. 73-98.

Marwick, A, *The Nature of History* (MacMillan, Hampshire, 1989).

Marwick, A, *The New Nature of History* (Palgrave, Houndsmill, 2001).

Matsui, K, *Native Peoples and Water Rights: Irrigation, Dams, and The Law In Western Canada* (McGill-Queen's University Press: Montreal [Que.], 2009).

Mattingly, DJ, McLaren, S, Savage, E, al-Fasatwi, Y, & Gadgood, K, (eds.), *The Libyan Desert: Natural Resources and Cultural Heritage* (Society for Libyan Studies: London, 2006).

Maylam, P, *A History of The African People of South Africa: From The Early Iron Age To The 1970s*, (D. Phillip: Cape Town, 1986).

Mays, L, *Ancient Water Technologies,* (Springer: Dordrecht, 2010).

McAllister, PA, Reversing the Effects of 'Betterment Planning' in South Africa's Black Rural Areas, *Africa Insight*, 21(2), Jan. 1991, pp. 116-119.

McCartney, M, Living with Dams: Managing The Environmental Impacts, *Water Policy*, 11(S1), 2009, pp. 121-139.

McColl, JH, Hugh McColl and the Water Question in Northern Victoria, *Victorian Historical Magazine*, 5, Jun. 1917, pp. 145-163.

Meissner, R, *Interest groups, Water Politics and Governance: The Case of the Lesotho Highlands Water Project* (Springer: Heidelberg, 2015).

Mestaz, JV, *Strength from the Waters: A History of Indigenous Mobilization in Northwest Mexico* (University of Nebraska Press: Lincoln, 2022).

Middelmann, TJD, The Hartebeespoort Irrigation Scheme: A Project of Modernisation, Segregation and White Poverty Alleviation, 1912–1926*, South African Historical Journal,* 67(2), 2015, pp. 158-179.

Mitchell, T, *Rule of Experts: Egypt, Techno-Politics, Modernity* (University of California Press: Berkeley, 2002).

Moffat, R, *Missionary Labours and Scenes in Southern Africa* (John Snow: London, 1846).

Moffat, JS, *The Lives of Robert & Mary Moffat* (12th Ed.), (T Fisher Unwin: London, c.1890).

Mogogana, BP, Olorunfemi, OD, & Oladele, OI, Knowledge and Adoption of Water Use Efficiency Techniques Among Women Irrigators: Evidence from South Africa, *Journal of Agriculture and Environment for International Development*, 112(2), 2018, pp. 271-295.

Morton, F, Settlements, Landscapes and Identities Among the Tswana of the Western Transvaal and Eastern Kalahari Before 1820, *South African Archaeological Bulletin*, 68(197), 2013, pp. 15-26.

Mossallam, A, “We Are the Ones Who Made This Dam ‘High’!” A Builders’ History of The Aswan High Dam, *Water History*, 6, 2014, pp. 297-314.

Mote, FW, The Growth of Chinese Despotism: A Critique of Wittfogel’s Theory of Oriental Despotism as Applied to China, *Oriens Extremus*, 8(1), Aug. 1961, pp. 1–41.

Murdoch, W, *Alfred Deakin: A Sketch* (Constable and Co: London, 1923).

Murito, J, & Lautze, J, Irrigation in Southern Africa: Success or Failure, *Irrigation and Drainage*, 64, 2015, pp. 180–192.

Mwamakamba, SN, Sibanda, LM, Pittock, J, Stirzaker, R, Bjornlund, H, van Rooyen, A, Munguambe, P, Mdemu, MV, & Kashaigili, JJ, Irrigating Africa: Policy Barriers and Opportunities

for Enhanced Productivity of Smallholder Farmers, *International Journal of Water Resources Development*, 33(5), 2017, pp. 824-838.

Myers, JC, *Indirect Rule in South Africa: Tradition, Modernity, and the Costuming of Political Power* (University of Rochester Press: Rochester, NY, 2008).

Nakawuka, P, Langan, S, Schmitter, P, & Barron, J, A Review Of Trends, Constraints and Opportunities of Smallholder Irrigation in East Africa, *Global food security*, 17, 2018, pp. 196-212.

Naumann, C, *"Where We Used to Plough": Environmental Governance, Rural Livelihoods and Socio-Ecological Change In South Africa*, (LIT VERLAG: Zurich, 2017).

Nelson, M, Viewpoint - Fifty Years of Hydroelectric Development in Chile: A History of Unlearned Lessons, *Water Alternatives,* 6(2), 2013, pp. 195-206.

Niane DT (ed.), *General History of Africa, (4th Ed.): Africa from The Twelfth to The Sixteenth Century*, (UNESCO: Paris, 1984).

Nüsser, M, Political Ecology of Large Dams: A Critical Review, *Petermanns Geographische Mitteilungen*, 147(1), 2003, pp. 20-27.

Nyandoro, M, Water and The Environment in Southern Africa: A Review of The Literature Since 1990, *The Journal for Transdisciplinary Research in Southern Africa*, 15(1), 2019, pp. 1-12.

Okihiro, GY, Precolonial Economic Change Among the Tlhaping, ca. 1795-1817, *The International Journal of African Historical Studies*, 17(1), 1984, pp. 59-79.

Otieno, F, Olufayo, O, & Ochieng, G, Sand Water Storage: Unconventional Methods to Freshwater Augmentation in Isolated Rural Communities of South Africa, *Scientific Research and Essays,* 6, 2011, pp. 1885-1890.

Park, CC, Water Resources and Irrigation Agriculture in Pre-Hispanic Peru, *The Geographical Journal*, 149(2), Jul. 1983, pp. 153-166.

Penna, AN, *The Human Footprint: A Global Environmental History* (Wiley-Blackwell, West Sussex, 2010).

Perret, SR, & Payen, S, Irrigation and the Environmental Tragedy: Pathways Towards Sustainability in Agricultural Water Use, *Irrigation and Drainage,* 69(2), Apr. 2020, pp. 263-271.

Pienaar, PG, Water for Agriculture, *Aqua*, (3), 1987, pp. 1-15.

Phillips-Howard, K & Porter, G, Small-Scale Irrigation and the Reconstruction and Development of Transkei, South Africa, *Area*, 28(3), Sept. 1996, pp. 373-383.

Ponseti, M, & López-Pujol, J, The Three Gorges Dam Project in China: History and consequences, *HMiC: història moderna i contemporània*, 4, 2006, pp. 151-188.

Potgieter, J, Verstedeliking in Bophuthatswana, *Stads- en Streeksbeplanning*, 5, Apr. 1977, pp. 11-13.

Porter, G, & Phillips-Howard, K, Agricultural Issues in the Former Homelands of South Africa: The Transkei, *Review of African Political Economy*, 24(72), 1997, pp. 185-202.

Pretorius F (ed.), *Geskiedenis van Suid-Afrika: Van Voortye Tot Vandag* (Tafelberg: Kaapstad, 2012).

Pretorius, F, (ed.), *A History of South Africa: From the Distant Past To The Present Day* (Protea Book House: Pretoria, 2014).

Pulleyblank, EG, Review: Oriental Despotism, *Journal of the Economic and Social History of the Orient*, 1(3), Oct. 1958, pp. 351-353.

Ramollo, PP, Impact of Alluvial Diamond Mining on Macroinvertebrate Community Structure in the Lower Vaal River, Northern Cape Province in South Africa, *International Journal of Environment*, 9(2), 2020, pp.1-22.

Raven, S, *Rome in Africa* (Routledge: London, 1993).

Reeves M (ed) *Movement, Power and Place in Central Asia and Beyond: Contested Trajectories* (Routledge: London, 2012).

Republic of South Africa, 1989, Report on the VaalHarts Government Water Scheme (Enlargement and Betterment of the Existing Main Canal System), Pretoria: Department of Water Affairs, Doc. No. WP. J-89.

Richter, BD, Postel, S, Revenga, C, Scudder, T, Lehner, B, Churchill, A, & Chow, M, Lost in Development's Shadow: The Downstream Human Consequences of Dams, *Water Alternatives*, 3(2), 2010, pp. 14-42.

Riukulehto, S, (ed.), *Between Time and Space* (Cambridge Scholars Publishing: Newcastle, 2015).

Rosier, PC, Dam Building and Treaty Breaking: The Kinzua Dam Controversy, 1936-1958, *The Pennsylvania Magazine of History and Biography*, 119(4), 1995, pp. 345-368.

Rossouw, JG, & Bembridge, TJ, Human Impact of Imposed Technology on The Ncora Irrigation Scheme in Transkei, *Development Southern Africa*, 1993, 10(4), pp. 535-547.

Rumley, D, & Minghi, JV (eds.), *The Geography of Border Landscapes* (Routledge: London, 1991).

Samarasin, P, Shuter, BJ, & Rodd, FH, After 100 Years: Hydroelectric Dam-Induced Life-History Divergence and Population Genetic Changes In Sockeye Salmon (Oncorhynchus nerka), *Conservation Genetics*, 18, 2017, pp. 1449-1462.

Schapera I (ed.), *Robert Moffat and Mary Moffat, Apprenticeship at Kuruman: Journals and Letters of Robert and Mary Moffat 1820-1828*, (Chatto & Windus: London, 1951).

Schapera, I, *Rainmaking Rites of the Tswana tribes: African Social Research Documents*, Volume 3 (African Studies Centre: Cambridge, 1971).

Schapera, I, *The Tswana* (KPI Limited: London, 1984).

Schapera, I, *A Handbook of the Tswana Law and Custom: Compiled for the Bechuanaland Protectorate Administration* (International African Institute: Munster-Hamburg,1994).

Scheumann, W, & Hensengerth, O (eds.), *Evolution of dam policies: Evidence from the Big Hydropower States* (Springer: Heidelberg, 2014).

Scott, JC, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).

Scott, Q, *The Mississippi: A Visual Biography* (University of Missouri Press: Missouri, 2010).

Scudder, T, *Aswan High Dam Resettlement of Egyptian Nubians* (Springer, Singapore: 2016).

Shaw, BD, Water and Society in The Ancient Maghrib: Technology, Property and Development, *Antiquités africaines*, 20, 1984, pp. 121-173.

Shillington, K, *The Colonisation of the Southern Tswana 1870-1900* (Raven Press, Braamfontein: 1985).

Shillington, K, *The History of Africa* (3rd Ed), (Palgrave MacMillan: Hampshire, 2012).

Shillington, K, *History of Africa*, (4th Ed), (Red Globe Press: London, 2019).

Sishuta, B, Small-scale Irrigation Development for Sustainable Rural Development: A Case Study of the Tyhefu Irrigation Scheme, *African Sociological Review*, 9(2), 2005, pp. 184-206.

Snyman, PHR, Die rol van Die Sendelinge, Die Owerheid en Ekonomiese Faktore in Die Onstaan van Kuruman, 1886-1913, *Contree*, 22, 1984, pp. 5-14.

Snyman, PHR, Die Langeberg-Rebellie en Die Totstandkoming van Olifantshoek, *Contree*, 20, 1986, pp. 16-26.

Snyman, A, *Boodskapper van God*, (10th Ed), (Vaandel Uitgewers: Ladismith, 2020).

Sparks, EE, Irrigation and the American Frontier, *Chatauquan,* 35, 1902, pp. 568-572.

Sojka, RE, Bjorneberg, DL, & Entry, JA, Irrigation: An Historical Perspective, *Encyclopedia of soil science*, 1(1070), 2002, pp. 745-746.

South African National Committee on Large Dams, *Large Dams and Water Systems in South Africa* (SANCOLD: Pretoria, 1994).

Stahl, DJ, The dam as Catastrophe: Connecting Geological Models to Modern History, *Water History*, 13, 2021, pp. 137–160.

Sterling, EW, The Powell Irrigation Survey, 1888-1893, *The Mississippi Valley Historical Review*, 27(3), Dec. 1940, pp. 421–434.

Steyn, P, A Greener Past? An Assessment of South African Environmental Historiography, *New Contree,* 46, 1999, pp. 7-9.

Sutton, JEG, Irrigation and Soil-Conservation in African Agricultural History: With a Reconsideration of the Inyanga Terracing (Zimbabwe) and Engaruka Irrigation Works (Tanzania), *The Journal of African History*, 25(1), 1984, pp. 25-41.

Sutton, JEG, Editor‘s Introduction: Fields, Farming and History in Africa, *Azania*, 24, 1989, pp. 6-11.

Sutton, JEG, Towards a History of Cultivating The Fields, *Azania*, 24, 1989, pp. 99-113.

Tagseth, M, Oral history and The Development of Indigenous Irrigation: Methods and Examples from Kilimanjaro, Tanzania, *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 62(1), 2008, pp. 9–22.

Teisch, J, 'Home Is Not So Very Far Away': Californian Engineers in South Africa, 1868–1915, *Australian Economic History Review*, 45(2), 2005, pp. 139-160.

Teisch, J, *Engineering Nature* (The University of North Carolina Press: North Carolina, 2011).

Tekana, SS, & Oladele, OI, Impact Analysis of Taung Irrigation Scheme on Household Welfare Among Farmers in North-West Province, South Africa, *Journal of Human Ecology*, 36(1), 2011, pp. 69-77.

Tempelhoff, JWN, *The Substance of Ubiquity: Rand Water 1903-2003* (Kleio Publishers: Vanderbijlpark, 2003).

Tempelhoff, JWN, 'n Historiografiese Verkenning Van Watergeskiedenis, *Koers*, 70(3), 2005, pp. 473-514.

Tempelhoff, JWN (ed.), *African Water Histories: Transdisciplinary Discourses* (North-West University: Vanderbijlpark, 2005).

Tempelhoff, JWN, Historical Perspectives on Pre-Colonial Irrigation in Southern Africa, *African Historical Review*, 40(1), 2008, pp. 121-123.

Tempelhoff, JWN, Recent Trends in South African Water Historiography, *TD: The Journal of Transdisciplinary Research in Southern Africa*, 4(1) Jul. 2008, pp. 271-296.

Tempelhoff, JWN, The Water Act, No. 54 of 1956 and the First Phase of Apartheid in South Africa (1948–1960), *Water History*, 9, 2017, pp. 189–213.

Tempelhoff, JWN, *South Africa's Water Governance Hydraulic Mission (1912–2008) in a WEF-Nexus context* (AOSIS: Durbanville, 2018).

Thompson, L, *A History of South Africa*, (4th Ed.), (Yale University Press: New Haven, 2014).

Thornton, DS, Agricultural Development in The Sudan Gezira Scheme, *Sudan Notes and Records*, 53, 1972, pp. 100-115.

Tischler, J, *Light and Power for a Multiracial Nation: the Kariba Dam Scheme in the Central African Federation* (Palgrave Macmillan: Basingstoke, 2013).

Tischler, J, Cementing Uneven Development: The Central African Federation and the Kariba Dam Scheme, *Journal of Southern Africa*, 40(5), 2014, pp. 1047-1064.

Tosh, J, *The Pursuit of History: Aims, Methods and New Directions In The Study of History*, (6th Ed), (Routledge, London, 2015).

Truter, FC, & Strauss, CA, The Pre-Transvaal Rocks at Taungs, Cape Province, *Geological Society of South Africa*, 44, 1941, pp. 161-166.

Turrell, RV, *Capital and Labour on the Kimberley Diamond Fields, 1871-1890* (Cambridge University Press: Cambridge, 1987).

Turton, A, & Henwood, R (eds.), *Hydropolitics in the Developing World: A Southern African Perspective* (African Water Issues Research Unit: Pretoria, 2002).

Turton, AR, Meissner, R, Mampane, PM, & Seremo, O, A Hydropolitical History of South Africa's International River Basins, Report No.: 1220/1/04, (Water Research Commission: Gezina, 2004).

Vaishnav, T, Increasing Food Production in Sub-Saharan Africa through Farmer-Managed Small-Scale Irrigation Development, *Ambio*, 23(8), Dec. 1994, pp. 524-526.

Van Averbeke, W, Denison J, & Mnkeni, PNS, Smallholder Irrigation Schemes in South Africa: A Review of Knowledge Generated by the Water Research Commission, *Water SA*, 37(5), WRC 40-Year Celebration Special Edition 2011, pp. 797-808.

Van Eeden, OR, Die Korrelasie van Sekere Voor-Transvaal-Gesteentes in Die Distrik Schweizer Reneke, *South African Journal of Geology*, 49(1), 1946, pp. 277-288.

Van Eeden, ES, Waterkwessies, Met Spesifieke Verwysing Na Die Uitwerking van Wateronttrekking op Die Landboubedryf in die Oberholzerdistrik (Carltonville-gebied), 1959 - 1972, *New Contree*, 39, 1996, p. 78-91.

Van Eeden, ES, Challenging Traditional Ways of Constructing Local/Regional History Research in South Africa: Some Global Learning and Sharing, *International Journal of Regional and Local History*, 9(1), May 2014, pp. 27–43.

Van Eeden, ES, & Manson, A (eds), *Taung in History: Moments, Memories & Human Encounters* (Ivyline: Vanderbijlpark, 2024).

Van Schilfgaarde, J, Irrigation - A Blessing or A Curse (Review Article), *Agricultural Water Management,* 25, 1994, pp. 203-219.

Van Vuuren, L, *In the Footsteps of Giants: Exploring the History of South Africa's Large Dams* (Water Research Commission: Pretoria, 2012).

Van Vuuren, L, Together We Can Do More – Environmental Consciousness in the South African Dam Construction Sector (1945-1980), *TD The Journal for Transdisciplinary Research in Southern Africa*, 9(1), Jul. 2013, pp. 51-80.

Verwey, PMJ, & Vermeulen, PD, Influence of Irrigation on The Level, Salinity and Flow of Groundwater at Vaalharts Irrigation Scheme, *Water SA*, 37(2), Apr. 2011, pp. 155-164.

Visser, W, Water Contestations in The Little Karoo: Liaisons Between The Calitzdorp Irrigation Board and The Calitzdorp (Kannaland) Municipality, 1912- 2013, *TD The Journal for Transdisciplinary Research in Southern Africa*, 11(3), Dec. 2015, pp. 186-207.

Visser, W, Water as Agent for Social Change, 1900–1939: Two Case Studies of Developmental State Approaches In Establishing Irrigation Schemes, *Historia*, 63(2), Nov. 2018, pp. 40-61.

Wallach, B, Irrigation in Sudan Since Independence, *Geographical Review*, 78(4), 1988, p. 417-434.

Wang, P, Dong, S, & Lassoie, J, *The Large Dam Dilemma: An Exploration of The Impacts of Hydro Projects on People and The Environment in China* (Springer: Netherlands, 2014).

Warwick, P, *Black People and the South African War 1899–1902*, (Cambridge University Press: Cambridge, 1983).

Webster, A, Water and History in Southern Africa, *The Journal of African History*, Published online 2024, pp. 1-8.

Whelan, D, Water, Settlement and Food Provision in Natal Colony: The Winterton Irrigation Settlement, 1902–1904, *Historia*, 64(1), May 2019, pp. 42-64.

Widgren M, & Sutton, JEG (eds), *Island of Intensive Agriculture in Eastern Africa*, (James Currey: Oxford, 2004).

Wilcocks, RW, *Die Armblanke-Vraagstuk in Suid-Afrika: Verslag van die Carnegie-Kommissie* (Carnegie Korporasie: Stellenbosch, 1932).

Willmott, WE, Dujiangyan: Irrigation and Society in Sichuan, China, *The Australian Journal of Chinese Affairs*, (22), Jul. 1989, pp. 143-153.

Wilson, MH, & Thompson, LM, *The Oxford History of South Africa: South Africa to 1870* (Vol. 1), (Oxford University Press: New York, 1969).

Wittfogel, KA, *Oriental Despotism: A Comparative Study of Total Power* (Yale University Press: New Haven, 1957).

Worger, WH, *South Africa's City of Diamonds: Mineworkers and Monopoly Capitalism in Kimberley, 1867-1895* (AD Donker: Yale, 1987).

Wulfhorst, JD, & Glenn, E, Irrigation, Community, and Historical Development along the Upper Snake River, *Agricultural History, Water and Rural History*, 76(2), Spring 2002, pp. 434-447.

Yawitch, J, *Betterment: The Myth of Homeland Agriculture* (SA Institute of Race Relations: Johannesburg, 1982).

Young, RB, The Calcareous Tufa Deposits of the Campbell Rand, from Boetsap to Taungs Native Reserve, *South African Journal of Geology*, 28(1), 1925, pp. 55-67.

Ziolkowski, M, *Mega-Dams in World Literature: Literary Responses to Twentieth-Century Dam Building* (University of Wyoming Press of Colorado: Denver, 2024).

Unpublished

Acha, GE, Problems Faces by Small-Scale Farmers in Taung Irrigation Scheme in the North-West Province, South Africa (MA, North-West University, 2014).

Balarane, A, Determinants of Livelihood Strategies Among Smallholder Farmers on Irrigation Schemes in the North-West Province, South Africa (PhD, North-West University, 2015).

Baloyi, TB, The Role of Traditional Leadership in Local Government (MA, University of Witwatersrand, 2016).

Bembridge, TJ, A Systems Approach Study of Agricultural Development Problems in Transkei (PhD, University of Stellenbosch, 1984).

Botha, PJ, The Ecology and Population Dynamics of The Nile Crocodile Crocodylus Niloticus in The Flag Boshielo Dam, Mpumalanga Province, South Africa (MA, University of Pretoria, 2005).

Chief Director of Surveys and Mapping: Mowbray, 2724 Christiana, 1:250 000, (2nd Ed), June 1989.

Chiyaka, EN, The role of Smallholder Irrigated Agriculture in Promoting Livelihoods and Poverty Alleviation: The Case of Taung, South Africa, (MA, University of the Free State, 2016).

Claassens, AL, Exploring Water Quality and Farmers' Perceptions About Water and Food Security in The Vaalharts Irrigation Scheme (MA, North-West University, 2018).

Clynick, T, Chiefs, Concessionaires and Reserve Politics on the Tlaping Alluvial Diamond Diggings at Taungs, 1919-1921: A Local Perspective on Segregation and Class Interests, *Conference, History Workshop*, Feb 1987, pp. 1-39.

Copeland, M, Vaal River System: Feasibility Study for Utilization of Taung Dam Water, Irrigation Planning And Design – Final Report, Report Number: P WMA 10/C31/00/0908, (DWAF, 2008).

Du Toit, CA, 'n Koste Analise van Besproeiingsboerdery in die Taung-Distrik van Bophuthatswana, (MA, Potchefstroomse Universiteit vir Christelike Hoër Onderwys, 1985).

Department of Water Affairs and Forestry (DWAF), South Africa, Vaal River System: Feasibility Study for the Utilisation of Taung Dam Water - Main Report, July 2008, Report number: P WMA 10/C31/00/0408.

Department of Water Affairs and Forestry (DWAF), South Africa, Feasibility Study for Utilisation of Taung Dam Water: Irrigation Planning and Design: prepared by Golder Associates, 2007 (PWMA 10/C31/00/0908).

Department of Water Affairs and Forestry (DWAF), Taung Dam: Water Utilisation Feasibility Study, Minutes for the Stakeholders Committee Meeting No. 3, Taung Local Municipality Boardroom, 29 February 2008, (Obtained from: OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023).

Department of Water Affairs and Forestry (DWAF) & BKS, Rehabilitation of Group 2 Dams: Tender No. W9347 – Taung Dam – Construction of New Concrete Staircases and Platforms in

the Valve Shaft, Minutes of Site Meeting no. 5 held at Taung Dam, 3 April 2008, (Obtained from: SPA, OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023).

Ekobi, AG, Problems Faced by Small-Scale Farmers in Taung Irrigation Scheme in the North West Province, South Africa (MA, North-West University, 2019).

Gouws, C, Vestiging Langs die Vaalrivier in die Omgewing van die Vredefortkoepel, 1840-2012 (PhD, North-West University, 2013).

Hudson, JW, Responses to Climate Variability of The Livestock Sector in the North-West Province, South Africa (MA, Colorado State University, 2002).

Isaacman, A, Large Dams, Sustainable Livelihoods and The Use Of Oral Histories: The Case of Cahora Bassa, *Proceedings of the Forty-ninth Pugwash Conference on Science and World Affairs, Rustenburg, South Africa, 7-13 September 1999: Confronting the Challenges of the 21st Century*, (World Scientific: Singapore, 2001), pp. 382-396.

Janse van Noordwyk, GK, Taungdam: Jaarlikse Damveiligheid Inspeksie Verslag, 2002, (Obtained from: SPA, OA-23, Mr Gert Kruger, Ex-CEO of VHWUA, Potchefstroom: 27 November 2023).

Kabanda, TH, Land Use/Cover Changes and Vulnerability To Flooding in the Harts Catchment, South Africa (MA, North-West University, 2012).

Klopper, JP, Mainstreaming of Smallholder Irrigators: The Case of Taung Irrigation Scheme, North-West, South Africa (MA, University of the Free State, 2009).

Kokome, JE, Evaluation of Irrigation Management Practices of Barley Farmers in the Taung Irrigation Scheme (MA, Central University of Technology, Free State, 2004).

Lahiff, E, Agriculture and Rural Livelihoods in a South African 'Homeland': A Case Study from Venda, (D.Phil., University of London, 1997).

McAllister, DE, Craig, JF, Davidson, N, Delany, S, & Seddon, M, Biodiversity Impacts of Large Dams, Background paper 1, (IUNC & UNEP, 2001).

Meissner, R, Water as ‘n Bron van Politieke Konflik en Samewerking: ‘n Vergelykende Studie van die Midde-Ooste en Suider-Afrika (MA, Randse Afrikaanse Universiteit, 1998).

Mente, N, Factors Affecting Irrigation Management Decision-Making: The Case of Taung Irrigation Scheme in North-West Province of South Africa (MA, University of Pretoria, 2021).

Meyer, T, & Cilliers, D, Greater Taung Local Municipality (GTLM) – Environmental Management Framework (EMF) report, Project number: CEM 2013/222 and RDLR-0077, 2015.

Mnguni, D, & Alletson, AJ, Vaal River System: Feasibility Study for Utilization of Taung Dam Water - Environmental Impact Assessment and Public Participation, DWAF Report Number: P WMA 10/C31/00/1508 (Supporting Report 11), July 2008.

Molebiemang, K, The Effects of The Underutilisation of The Restored Farmlands in Taung: North-West Province (MA, University of South Africa, 2020).

Nesheim, DA, *An Environmental Biography of Bde Ihanke-Lake Andes: History, Science, And Sovereignty Converge with Tribal, State, And Federal Power on The Yankton Sioux Reservation in South Dakota, 1858–1959* (PhD, The University of Nebraska-Lincoln, 2009).

Pauw, BA, Social and Religious Institutions of the Tlhaping of the Taung Reserve, (PhD, University of Cape Town, 1955).

Pretorius, WM, Vaalharts: Environmental Aspects of Agricultural Land And Water Use Practices (MA, North-West University, 2018).

Raynor, GC, Jordan Lake: Biography of a Multi-Purpose North Carolina Reservoir 1945-2024 and Beyond (PhD, Duke University, 2024).

Roodt, JJM, Capital Penetration and Rural Development in Bophuthatswana: A Case Study of the Ditsobotla Dryland Projects (MA, University of Witwatersrand, 1985).

Rossouw, JG, The Impact of Imposed Technology on a Traditional Rural Society in Transkei: An Evaluation of the Ncora Irrigation Scheme (DSc, University of Fort Hare, 1989).

Schepers, JH, ‘n Kultuurbeeld van die Spoeldiamant-Delwersgemeenskappe (PhD, Universiteit van Witwatersrand, 1950).

Seshoka, J, de Lange, W, & Faysse, N, The Transformation of Irrigation Boards Into Water User Associations in South Africa: Case Studies of the Lower Olifants, Great Letaba and Vaalharts Water User Associations, (Working Paper 72), (International Water Management Institute: Colombo, Sri Lanka, 2004).

Smook, AJ, and Project Team, Vaal River System: Feasibility Study for Utilization of Taung Dam Water - Water Development and Supply Plans, DWAF Report Number: P WMA 10/C31/00/1508 (Supporting Report 6), July 2008.

Swanepoel, J, Landbou-ontwikkeling in Suid-Afrika, 1652-1954, met Spesiale Verwysing Na Staatsoptrede in Hierdie Verband (PhD, North-West University, 1958).

Tekana, SS, Impact of Irrigation Farming on Women Empowerment, Food Security And Poverty Status in North-West Province, South Africa (PhD, North-West University, 2014).

Verwey, PMJ, The Influence of the Irrigation on Groundwater at the Vaalharts Irrigation Scheme, (MA, University of the Free State, 2009).

ANNEXURE A: LIST OF FAMILIES BURIED BENEATH THE TAUNG DAM

The following list of names were put on the memorial stone at Taung Dam in 2006.[115]

1. DISEKO & KOKO'S FAMILY
1.1. Modimowame Diseko
1.2. Diseko Diseko
1.3. Monyeledi Koko
1.4. Johannes Koko
1.5. Kesimolotse Matshadi Diseko

2. MORETLWE'S FAMILY
2.1. Phokoletso Daniel Moretlwe
2.2. Kebuileng Moretlwe
2.3. Bishop Nelson Moretlwe
2.4. Siamisang Moretlwe
2.5. Molantwa Moretlwe
2.6. Motati Moretlwe
2.7. Thuso Moretlwe

3. KHUKELE'S FAMILY
3.1. Totonyane Khukele
3.2. Matong Khukele
3.3. Keitumetse Khukele
3.4. Kgosiyabetsa Khukele
3.5. Serai Khukele
3.6. Kgogonoka Khukele

4. TONG'S FAMILY

4.1. Bosenyamang Tong
4.2. Baitsi Tong
4.3. Monopi Tong

5. PHUTIYAGAE'S FAMILY
5.1. Tlhakaneng Phutiyagae
5.2. Mosetsi Phutiyagae
5.3. Tauetsile Phutiyagae
5.4. Baebele Phutiyagae
5.5. Onneile Phutiyagae
5.6. Kegomoditswe Phutiyagae
5.7. Reetsanyang Phutiyagae

---

[115] MA-R, M Mphane, Legal Services Officer, Internal Memo, Report to the meeting held on 27 February 2006 between Kolong, Dikgageng, GTLM, Traditional Leadership, Department of Water Affairs and Forestry and other stakeholders, 6 February 2006.

5.8. Segopodisho Phutiyagae
5.9. Neo Phutiyagae
5.10. Keretibetse Phutiyagae
5.11. Ntsa Phutiyagae
5.12. Ogopoleng Phutiyagae
5.13. Onkutlwele Phutiyagae
5.14. Maria Kadimo Phutiyagae

6. JANE'S FAMILY
6.1. Basadisadi Jane
6.2. Mosinyemang Jane
6.3. Keaboga Jane
6.4. Khoane Jane
6.5. Thekisho Jane
6.6. Senyatso Jane

7. MOEPANG'S FAMILY
7.1. Lesweemang Moepang
7.2. Tatlhome Moepang
7.3. Thatswe Moepang
7.4. Tshegodikae Moepang
7 .5. Motlashopeng Moepang
7 .6. Monchojang Moepang
7.7. Morewakwena Moepang

8. TLHASEDI'S FAMILY
8.1. Jeje Tlhasedi
8.2. Mojanku Tlhasedi
8.3. Monnagabue Tlhasedi
8.4. Mosadiwatlala Tlhasedi
8.5. Talolo Tlhasedi
8.6. Bogosieng Tlhasedi
8.7. Gobuamang Tlhasedi
8.8. Keikantsemang Tlhasedi
8.9. Kgotlaetsile Tlhasedi
8.10. Lepogo Tlhasedi
8.11. Kelebogile Tlhasedi
8.12. Sebotsane Tlhasedi
8.13. Mpoane Tlhasedi
8.14. Ohaletse Tlhasedi

9. MONCHOJANG'S FAMILY
9.1. Mokgalagatsana Monchojang
9.2. Ngwanametsi Monchojang

10.ORAPELENG'S FAMILY
10.1. Kereng Orapeleng
10.2. Gaotlhaelwe Orapeleng
10.3. Segametsi Orapeleng

11. MATLHARE'S FAMILY
11.1. Tuduetso Matlhare
11.2. Gaogakwe Matlhare

12. TOE'S FAMILY
12.1. Keitumetse Toe

13.MOROKE'S FAMILY
13.1. Kelebogile Moroke
13.2. Dimakatso Moroke

14.MODISE'S FAMILY
14.1. Kelebogile Modise
14.2. Seoposengwe Modise

15.NCHOCHO'S FAMILY
15.1. Dikeletseng Nchocho
15.2. Toto Nchocho
15.3. Swimanyana Nchocho
15.4. Mojuta Nchocho
15.5. Ntota Nchocho
15.6. Sophy Nchocho

16.SETHIBA'S FAMILY
16.1. Gaobatliwe Thomas Sethiba
16.2. Osenotse Benedette Sethiba

17. TSHISI'S FAMILY
17.1. Kanoto Tshisi
17.2. Mmuila Tshisi
17.3. Modisaotsile Tshisi
17.4. Mmakutase Tshisi
17.5. Keabetswe Tshisi

18.SENYATSO'S FAMILY
18.1. Rradigau Senyatso
18.2. Raletsoloane Senyatso
18.3. Masebeo Senyatso
18.4. Tlhaelo Senyatso

19.MAKUNG'S FAMILY
19.1. Modise Makung
19.2. Mojapudi Makung
19.3. Keneilwe Makung
19.4. Sampiece Makung
19.5. Matong Makung

20. TLHATLHELANG'S FAMILY
20.1. Monnasera Tlhatlhelang
20.2. Rabecah Tlhatlhelang

20.3. Mmabatsekeng Tlhatlhelang
20.4. Mothonyane Tlhatlhelang

21.MOSEKI'S FAMILY
21.1. Kearata Moseki
21.2. Ruta Moseki
21.3. Mokhentwa Moseki

22. SEKWENA'S FAMILY
22.1. Crits Sekwena
22.2. Efa Sekwena
22.3. Gilfish Sekwena
22.4. Satshona Sekwena

23. CHWEU'S FAMILY
23.1. Spokes Chweu

24. MOKOTO'S FAMILY
24.1. Ruta Mokoto

25.MOTSHWARI'S FAMILY
25.1. Makhunou Motshwari
25.2. Sethibiti Motshwari
25.3. Tshegofatso Motshwari
25.4. Motshwari Motshwari

26. MALAO'S FAMILY
26.1. Legatlape Malao
26.2. Johannes Malao