

Inaugural address

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Urban and Regional Planning / Stads- en Streekbeplanning / Togamaano ya Setoropo le Kgaolo

We build the city: Transdisciplinary approaches towards resilience

“Within 50 years the entire world will be urbanised. We have one half century left to get urbanisation right” (McCarthy, 2016).

The urban landscape is changing at a vast pace. Soon our urban functions will no longer be separated spatially or socially, as envisioned by the La Ville Radieuse model (Le Corbusier, 1929). The contest between diverse land-uses will reach a peak when growing populations and increasing urbanization inflates the pressure on already strained resources within the urban fabric. The trend of depletion of green spaces will excel, intensifying the growing carbon footprint, increasing energy consumption, elevating emissions of air pollutants, impairing water quality and compromising health and overall quality of life. Cities will be far removed from the safe, clean, and livable environments, as envisioned in planning theory if we do not change business (and planning) as usual. This is an exceptionally challenging endeavor in Africa, where the widely divergent and strained social contexts mostly overshadow environmental concerns. In this context, green spaces are often viewed as a “luxury good”, despite the comprehensive literature on the extensive benefits of such spaces to their host cities and communities. Misconceptions relating to the notion of green spaces are reflected in the undervaluation of these spaces, under-prioritization in the budgeting process and ultimate negligence in terms of broader spatial planning approaches. The lack of function and ownership further exacerbate the social- and economic value of these green spaces, apparent by the disproval of the compensation hypothesis and rejection of the proximity principle. Much effort will be needed to change perceptions and sensitize decision-makers to understand green spaces as a “public good” and “economic asset”. Resilience thinking could pose solutions in this regard, drawing on transdisciplinary planning approaches to manage change and steer Spatial Planning towards trans-urbanism and a new form of “urban life”. It would require the emancipation of the disciplinary identity of Spatial Planning as crucial driver towards resilience, departing from theoretical and methodological frames of supplementary disciplines, as well as the indigenous knowledge and living experiences of communities, to co-produce urban innovations. Conveying strategic and lateral thinking, contemporary Planners would need to become generative leaders, with socio-emotional intelligence, to generate innovation and co-create solutions for strained social contexts, for depleting scarce resources, for managing change of contemporary urban landscapes, for decolonizing planning, for finding sustainability within informality. Academia stand central to developing socio-emotional intelligence as a crucial soft skill needed to, collectively, build the city.

Trans-dissiplinêre benaderings tot veerkragtigheid

"Binne 50 jaar sal die hele wêreld verstedelik wees. Ons het een halfeeue oor om verstedeliking reg te kry" (McCarthy, 2016).

Die stad is besig om te verander. Binnekort sal stedelike funksies sal nie meer ruimtelik of sosiaal geskei kan word nie. Kompetisie tussen uiteenlopende grondgebruikers sal 'n hoogtepunt bereik wanneer bevolkingsgroei en daaropvolgende verstedeliking druk op reeds ooreisde hulpbronne verhoog. Stedelike groen areas sal toenemend in gedrang wees, wat verder aanleiding sal gee tot 'n groter koolstofvoetspoor, verhoogde energieverbruik, meer lugbesoedeling, 'n afname in watergehalte en gesondheid, asook 'n verlaging in algehele lewenskwaliteit. Stede sal dus ver verwyder wees van die veilige, skoon en leefbare omgewings wat deur beplanningsteorie voorgestel word. Ons het een halfeeue oor om verstedeliking na meer volhoubare uitkomstes te stuur. Dit sal besonders uitdagend in Afrika wees, gegewe uiteenlopende en gespanne sosiale kontekste wat op die kontinent normaalweg omgewingskwessies oorskadu. Groen ruimtes in Afrika word dikwels as 'n "luuksheid" beskou, ten spyte van die omvattende literatuur oor die uitgebreide voordele wat hierdie ruimtes vir stede en gemeenskappe kan inhou. Wanpersepsies rakende groen ruimtes word weerspieël in die onderwaardering en onderprioritisering van groen ruimtes in begrotingsprosesse en die uiteindelijke nalatigheid hiervoor getoon in ruimtelike beplanningsbenaderings. 'n Gebrek aan funksie en eienaarskap verhoed verder dat die sosiale- en ekonomiese waarde van hierdie groen ruimtes realiseer, soos gedemonstreer deur die verwerping van die vergoedingshipotese, asook die nabyheidsbeginsel in Suid-Afrikaanse gevallestudies. Daadwerklike pogings word benodig om persepsies te verander en besluitnemers sensitief te maak vir die waarde van groen ruimtes as "openbare" en "ekonomiese bates". Veerkragtigheidsdenke kan oplossings in hierdie verband bied, gegrond op transdissiplinêre beplanningsbenaderings sodat ruimtelike beplanning bemagtig kan word om stedelike verandering te bestuur in reaksie tot toenemende ekonomiese-, sosiale- en omgewingskwesbaarheid. Dit sal vereis dat die dissiplinêre identiteit van ruimtelike beplanning bevry word as 'n noodsaaklike dryfveer tot veerkragtigheid. Dus, dat die teoretiese en metodologiese raamwerke van aanvullende dissiplines gebruik word om saam met die inheemse kennis en lewenservarings van gemeenskappe gesamentlik innoverende oplossings te vind. Om strategiese en laterale denke oor te dra, sal kontemporêre Beplanners generatiewe leiers moet word, wat oor sosio-emosionele intelligensie beskik, om innovasie voort te bring en gesamentlike oplossings te bewerkstellig om veranderinge binne die kontemporêre stedelike landskap te bestuur, skaars hulpbronne te beskerm, volhoubaarheid met informaliteit te vereenselwig en die dekolonisering van Beplanning te versnel. Akademici staan sentraal in die ontwikkeling van hierdie vlak van sosio-emosionele intelligensie as 'n noodsaaklike vaardigheid ten einde gesamentlik die (veerkragtige) stad te bou.

Go Dirisa Dirutwa tse di fetang se le sengwe go tlisa maemo a a kgonang go itsetsepela

“Mo dingwageng di le 50 tse di tlang metseselegae mo lefatsheng lotlhe e tla bo e fetotswe go nna metsetsedoropo. Re setse ka halofo e le nngwe ya dingwaga di le lekgolo go kgona seno”
(McArthy, 2016).

Toropo e a fetoga. Mo halofong ya lekgolo la dingwaga boalo jotlhe jwa lefatshe bo tla bo bo fetotswe go nna motsetsedoropo. Ditiro tsa metsetsedoropo ga di kitla di tlhola di kgaoganngwa ke mafelo a a bulegileng kgotsa ke sebaka. Kgotlhang fa gare ga mefuta e e farologaneng ya go dirisa lefatshe e tla fitlha kwa setlhoweng sa yone jaaka fa kgolo ya baagi le go fetolwa ga metseselegae go nna metsetsedoropo go tla bo go gola mme go baka kgatelelo mo ditsompeleng tse re setseng re na le bothata ka tsone. Mafelo a matala mo metsetsedoropong a tla tswelela go fela, mme khabonetaeokosaete e e kgwelwang mo moweng e tla tswelela pele go oketsega, mafelo ano a tla baka tiriso e ntsi thata ya motlakase, a tla godisa kgotlelo mo moweng, a tla fokotsa boleng jwa metsi le jwa pholo le boleng jwa botshelo ka kakaretso. Metsetsedoropo e tla bo e le kgakala thata le ditikologo tse di sireletsegileng, tse di phepa, tse batho ba kgonang go nna mo go tsone tse go neng go akanngwa ka tsone fa go ne go bopiwa kgopolo ya go rulaganyetsa go aga metsetsedoropo. Re setse ka halofo fela ya lekgolo la dingwaga go dira gore go fetola metseselegae go nna metsetsedoropo go nne le diphelelo tse di siameng tse di nnelang ruri. Seno ke tiro e e gwetlhang fela thata mo Aforika ka ntlha ya dipharologano tse dikgolo tsa loago le mathata a e nang le one a gantsi a a dirang gore go tlhokomologiwe mathata a tikologo. Mafelo a matala, mo Aforika, gantsi a lejwa e le “khumo e e sa tlhokegeng”, go sa kgathalesege gore go kwadilwe dibuka tse dintsi ka mesola e megolo e e tliwang ke mafelo a a ntseng jalo mo ditloropong le mo ditikologong tse a leng mo go tsone. Megopolo e e sa siamang ka mafelo a matala e bontshiwa ke go bo mafelo ao a lejwa e le a boleng jo bo kwa tlase, ga a etelediwe kwa pele fa go dirwa dibajete e bile seno se bontshiwa ke go tlhokomologiwa ga one fa go dirwa dithulaganyo tse dikgolo tsa mafelo a a bulegileng. Go sa dirisiweng ga mafelo a matala mo loagong le mo ikonoming le go tlhoka beng ba one gape go etegetsa go tseelwa kwa tlase ga boleng jwa one, mme seno se bonwa ka go sa amogelweng ga kgopolo ya go duelelwa phimolakeledi ya mafelo ao le go ganwa ga molaomotho o o amanang le one mo maamong a go dirwang dipatlisiso ka one mo Aforikaborwa. Go tla tshwanelwa ke gore go dirwe ka natla thata go fetola megopolo eo le go dira gore badira-ditshwetso ba tlhologanye botlhokwa jwa mafelo a matala ano jaaka “a a solegelang setšhaba molemo”. Go akanya thata ka seno go ka tlisa ditharabololo tsa seno, go rulaganyetsa dirutwa tse di fetang se le sengwe tse di tsamaisanang le Thulaganyo ya Mafelo a a Bulegileng go dira gore metseselegae e fetolwe go nna metsetsedoropo, go tsibogela mathata a go nna mo kotsing ga kgolo ya ikonomi, loago le mafelo a a bulegileng. Seno se tla batla gore go se ka ga batlwa serutwa sa Thulaganyo ya Metse e e Bulegileng se go tweng ke sone se se botlhokwa thata go tlisa maemo a a kgonang go itsetsepela. Go tla bo go kgaoganwa le dikgopolo le mekgwa ya dirutwa tsa tlaleletso go bo go dirisiwa kitso ya setso le maitemogelo a go tshelwang ka one one mo loagong, go tlhagisa ditlhamosešwa tsa metsetsedoropo. Ka jalo go akanyetsa dilo, Barulaganyi ba ga jaanong ba tla tshwanelwa ke go nna baeteledipele ba ba nang le tlhotlheletso, ba ba nang le botlhale ka tsa loago le ka tsela e batho ba ikutlwang ka yone, go dirisa tlhamosešwa le go tlhama ditharabololo ba le mmogo go tlisa diphetogo mo boalong jwa naga jwa metsetsedoropo ya ga jaanong, go rarabolola mathata a go fela ga ditsompelo tse di bonwang sewelo, go dira gore maemo a kgone go itsetsepela ka tiriso ya mokgwa wa setso, le go akofisa thulaganyo ya boipuso. Akatemi ke yone selo sa konokono sa go tlhama boemo jono jwa go nna le botlhale ka tsa loago le ka tsela e batho ba ikutlwang ka yone jaaka kgato e e botlhokwa e e tlhokegang ya go ama mmogo toropo (e e kgonang go itsetsepela).

1. The contemporary urban landscape

7,679,520,944. This is the estimated world population on 22 February 2019. Growing by an average of 162,600 persons per day. Almost every spatial planning-orientated paper references the increasing world population in arguing the complexity of the planning profession to create a sustainable future.

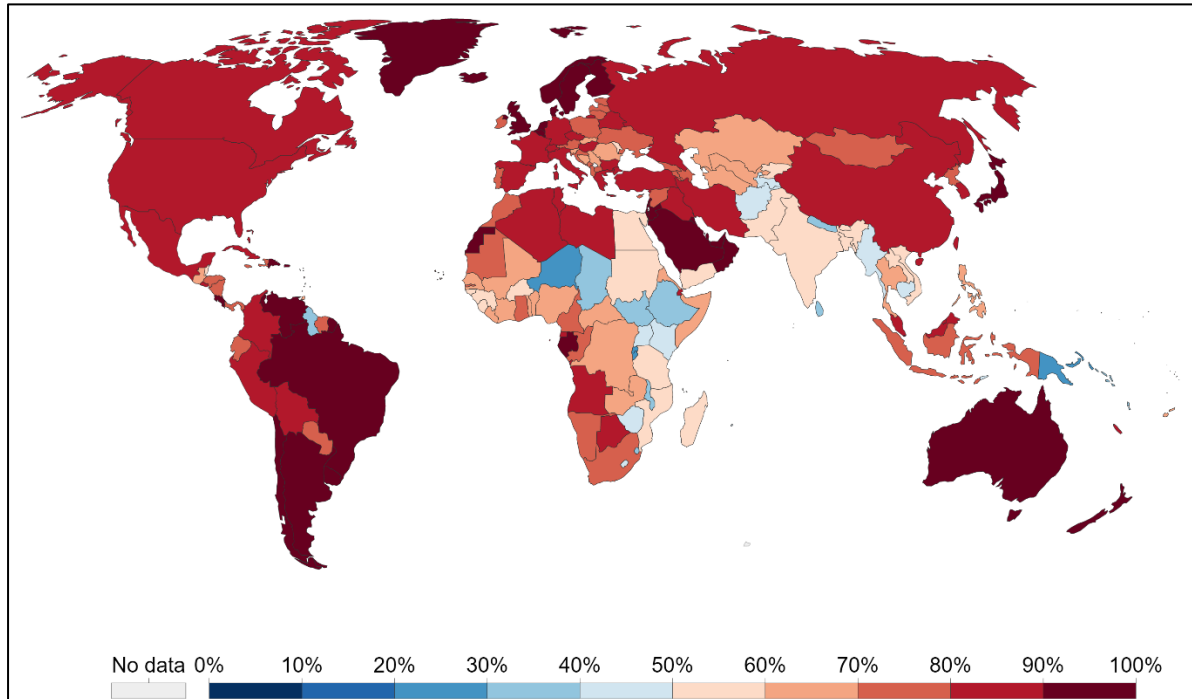


Figure 1: UN Urbanization projections to 2050

Source: OWID based on the UN World Urbanization Prospects 2019

The planning profession has evolved from a designing art, to a social science (Zhang, 2006:12), to a management and applied science (Zhang, 2006:12; Cilliers & Cilliers, 2016). Contemporary Spatial Planning is now confronted with “the management of change”, to resolve conflicting political and social demands on space, while protecting the earth’s generative capacity (Campbell, 1996:296; Cilliers & Cilliers, 2016).

Spatial change is at a peak within the urban landscape, as 4.2 billion of the world’s 7.6 billion people (55%) currently reside in cities (UN DESA, 2018). Projections show that urbanisation, the gradual shift from rural to urban areas, combined with the overall growth of the world’s population could add another 2.5 billion people to urban areas by 2050 (reaching 68% urbanisation), and reaching full global urbanisation in the following decades, intensifying the challenges of the contemporary urban landscape.

The four urban functions of working, living, leisure and transport which Le Corbusier (1929) once so elegantly deployed in his model of the city can no longer be separated from each other either spatially or socially (Mulder, 2002). The contemporary urban landscape deploys a picture where formal data (land-use, functions and zonings) are now distorted by informal data (activities and interaction) that precedes planning structures, as illustrated in Figure 2.

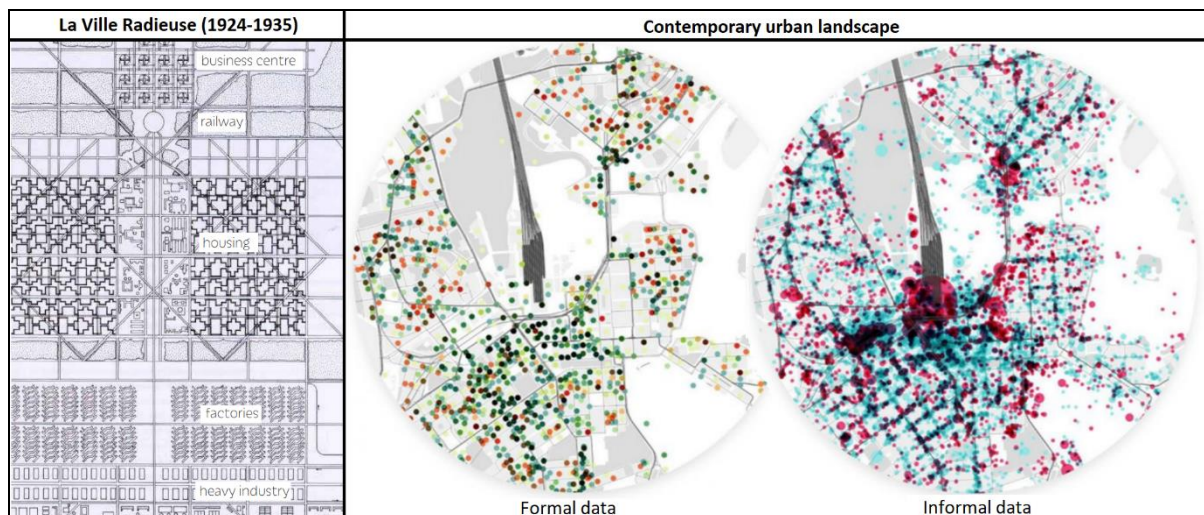


Figure 2: From La Ville Radieuse to the contemporary urban landscape
Source: Based on Le Corbusier (1929) and Danin (2019)

The expansion of urban areas across urban boundaries, as well as the mixing urban functions, now situates urban form, which used to be an important consideration of sustainable landscapes (Cilliers, 2009), as practically insignificant to the contemporary urban landscape. Previous research of Pekelharing (2008) suggested that urban edges should be replaced with broader urban development boundaries, to facilitate a gradual transition from urban to rural landscapes in South Africa, in anticipation of the urbanisation pressures and expecting land-use changes (Cilliers & Schoeman, 2009). The enactment of the 2013 Spatial Planning and Land Use Management Act (SPLUMA) nullified the function of the urban edge, when the new policy called for wall-to-wall municipal boundaries to adhere to the principles of inclusive planning.

Although SPLUMA made strategic sense by employing a more balanced economic development approach, it left various local authorities in South Africa without the expertise to manage the entire municipal jurisdiction as one entity. A lack of informed decision-making tools further exacerbated the potential for failure and the probability of perpetuating patterns of unsustainable development (Van Schalkwyk et al., 2014). But it is possibly the expected rate of urbanisation in Africa that would have the most severe environmental impacts (Kestermont et al., 2011), leading to unprecedented changes, within this soon to be urbanised landscape, where the informality-reality and sustainability-objectives collide.

The contest between informality and sustainability places Africa in a unique position to lead world debates on how to embrace informality as a contributing factor to the realisation of broader sustainable development objectives, as evident from the research of Lategan (2017) in reference to South Africa's informal backyard rental sector and its contribution to structuring sustainable urban landscapes. However, in the discourse on informality and sustainability, the African space economy should be reconsidered from a Spatial Planning perspective (Okeke, Cilliers and Schoeman, 2018), to facilitate ways to host growing populations, accommodate urbanisation and changing urban landscapes and social dynamics, while recognising land as a scarce resource, and as a force of global importance in the quest towards sustainable development (Sustainable Cities Institute, 2012; Cilliers & Cilliers, 2015).

2. Land as a scarce resource of the contemporary urban landscape

Land was once plentiful and resources were abundant. With the predictions of global urbanisation within the next half century (McCarthy, 2016), urgent action is needed to recognise land as a scarce resource of the contemporary urban landscape. Spatial planning has a key role to play in this regard, shaping the contemporary urban landscape in line with the universal ambition for sustainability, embedded in the global sustainable development goals (United Nations, 2017). In the search for “inclusive, safe, resilient and sustainable cities and human settlements” (United Nations, 2017), the interrelated role of the environment as catalyst to realise the objectives of sustainability (Anderson & Elmqvist, 2012) is becoming more prominent. There is now an expanded scientific understanding that green spaces are substantially beneficial to urban communities and cities (Llausas & Roe, 2012; Thomas & Littlewood, 2010; Wright, 2011), and that ecological principles are a *sine qua non* for sustainable cities (Forman, 2013; Lui et al., 2007; Stigsdotter, 2008; Cilliers & Cilliers, 2015).

However, despite theoretical and methodological frameworks in support of green spaces within the urban landscape, the reality suggests a depletion of urban green spaces across the globe. Statistics illustrate, amongst others, a depletion of green spaces in 25 European cities (European Environmental Agency, 200), in 274 metropolitan areas in the United States of America (McDonald et al., 2010) and to an even greater extent in Africa (Cilliers et al., 2013; Kestermont et al., 2011). In South Africa, for example, green spaces occupy on average less than 10% of urban land (McConnachie et al., 2008). Disparities in the availability of green space between established wealthy suburbs and poor suburbs in South Africa are not contested and point to social inequality relating to access to such green spaces and the ecosystem services it provides (Du Toit et al., 2018:8). The overall lack of green spaces in high-density urban landscapes are in most cases a result of their susceptibility to urban development pressures (More et al., 1988:141; Luttik, 2000) and the under prioritisation of green spaces in the decision-making process (Bertaud, 2010). As a result, cities are being further removed from the safe, clean, and livable environments, envisioned in planning theory (Van den Berg et al., 2007).

Data from the Global Carbon Project (2018) illustrate that land-use changes, especially the depletion of green spaces and deforestation, comprised 11% of total emissions produced in 2017. Land as a scarce resource is thus becoming a force of global importance, as changes in land-use contribute to the growing carbon footprint (Global Carbon Project, 2018). Spatial Planning could influence both the release and uptake of carbon, by considering industry planning and emission of fossil fuels, emissions from land-use changes, protection of carbon sinks such as the oceans and land, and recognising planning as either catalyst, or inhibitor, of changes in atmospheric concentrations of CO₂ (Global Carbon Project, 2018), as indicated in Figure 3.

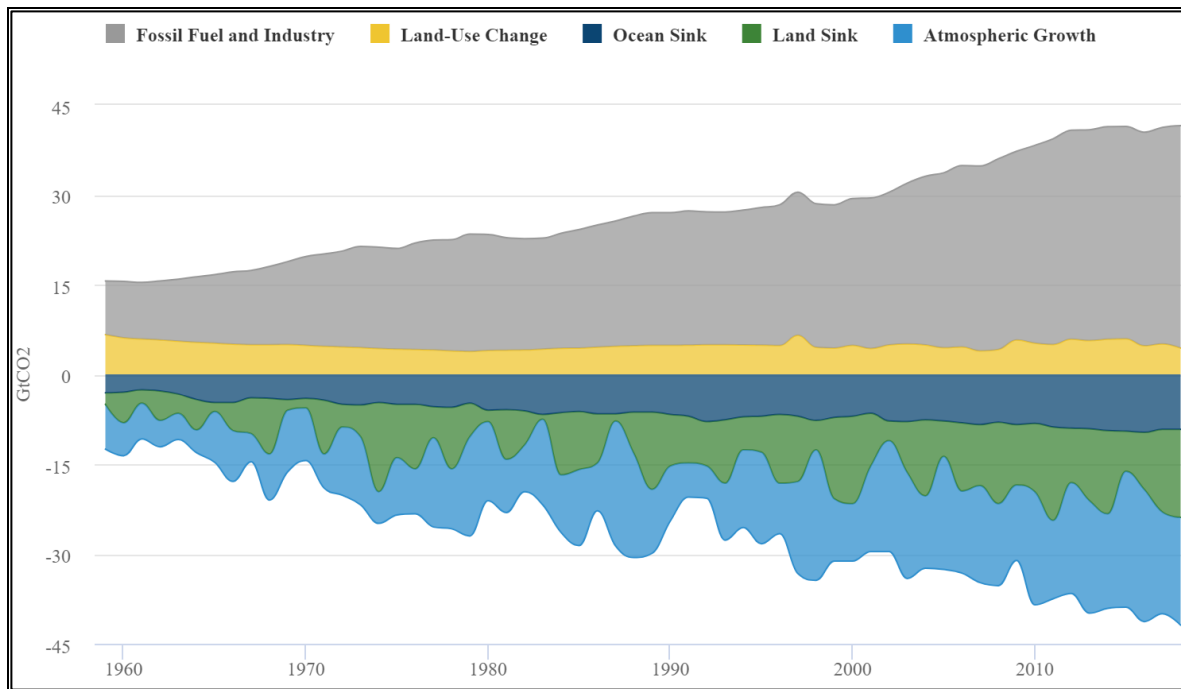


Figure 3: Annual global carbon budget of sources and sinks from 1959-2017

Source: Global Carbon Project (2018)

Cities have thus become a central nexus in the relationship between people and nature (Elmqvist, 2014), where the provision of green spaces results in a range of supplementary ecosystem services supporting humanity, including provisioning, regulating, supporting and cultural services (Cornelius, 2016:86; Cilliers et al., 2018), but concurrently, where the lack of green spaces, trigger other negative impacts, known as ecosystem disservices (Shackleton et al., 2016). These impacts relate to, but are not limited to, the intensified urban heat-island effect, increased energy consumption (Akbari, 2005), impaired water quality (James, 2002) and ultimately compromised human health and comfort (Centre for Disease Control and Prevention, 2006; EPA, 2019, Timmermans et al., 2017).

In the African urban landscape these impacts are magnified due to proportionally higher pressure on land use and loss of biodiversity per unit of wealth produced, compared to Europe (Cilliers et al., 2013). The prioritisation of green spaces in the South Africa (and broader African context) is also more complex, as strained social contexts often overshadow community needs. In many cases development-decisions precedes environmental concerns (Cilliers & Cilliers, 2016; Thyse, 2017), in support of growing societies. Research of Du Toit et al. (2018:10) concluded that the “current state of research urban green infrastructure (spaces) and ecosystem services are inadequate to effectively and confidently ensure that sub-Saharan Africans receive ‘the future they want’ in prosperous ‘liveable’ cities”, despite comprehensive evidence from international literature and best practices pertaining to the value of green spaces as ‘public goods’, articulated in terms of ecological-, social-, and economic values (Cilliers & Cilliers, 2016). As a result, green spaces are often considered a ‘luxury good’ in the African context and not a necessity or a sine qua non for sustainability (Cilliers and Cilliers, 2015; du Toit et al., 2018). What is regarded as the “more pressing needs”, such as eradicating poverty, providing basic services and addressing the growing housing backlog (Cilliers & Cilliers, 2015; Soares et al., 2011; Cilliers & Cilliers, 2016) take precedence in municipal and national budgets, only further constraining the planning and provision of green spaces in areas where it is often most needed (Cilliers & Cilliers, 2016; Huston, 2016).

The reluctance to budget and plan for green spaces should, however, not be confused with the community need in search of such spaces. Previous findings by Cilliers et al. (2013) demonstrated how the valuation of green spaces fluctuate against different socio-economic gradients, as poorer communities put a higher demand on provisioning services (food, lawn, medicinal, shade), while more affluent communities put a higher demand on cultural ecosystem services (aesthetics and ornamentals). More recent research suggests of a growing need for green spaces amongst local communities within the South African context (Lategan & Cilliers, 2014).

The need of such green spaces are however, due to misconceptions and the lack of budgets and planning, not being met in practice. Research by Lategan and Cilliers (2014) considered the value of public green spaces and the informal backyard rental sector of Bridgton and Bongoletu (Oudtshoorn, South Africa) and concluded that green spaces in these areas are not providing any specific service to the community and therefore, despite the need expressed for green spaces, not used by most individuals. The compensation hypothesis, which departed from the understanding that communities with limited access to private green space will seek compensation elsewhere, was disproved in the Bridgton and Bongoletu case study (N=708), further supporting the impact of impractical spaces. Such spaces do not provide a service to communities and do not entice users, who do not have access to ample domestic green space, to seek compensation in these public spaces (Lategan & Cilliers, 2017; Maat & De Vries, 2006; Lin et al., 2015).

Similar findings were derived from the research of Gibbens and Cilliers (forthcoming) that considered the need for public green spaces in Griekwastad (Siyancuma Local Municipality, South Africa). Again local communities (N=58) registered a need for functional green spaces, illustrating noncompliance of current spaces to community safety norms (52.4% of respondents agreed), maintenance (67.2% respondents agreed), function for recreation (86.2% agreed) or child-friendliness of play spaces (83.1% agreed).

The majority of local research suggest that green spaces in South Africa are not on par with international standards in terms of quality and function, strengthening the false perception that these spaces are not valuable or valued (Cilliers & Cilliers, 2016). It is further posited that the lack of quality and function related to these green spaces explains for most part, why these green spaces do not increase property values in accordance with the internationally accepted green proximity principle, which states that residential property prices increase as proximity to green space increases. These results, and disproof of the green proximity principle, were derived from a local case study conducted in Potchefstroom (JB Marks Municipality, South Africa) where statistical analysis of variance (ANOVA) was applied to the property values of five residential areas to determine the significant difference between the means of properties located at different distances from an urban green space (Cilliers & Cilliers, 2017), as indicated in Figure 4.

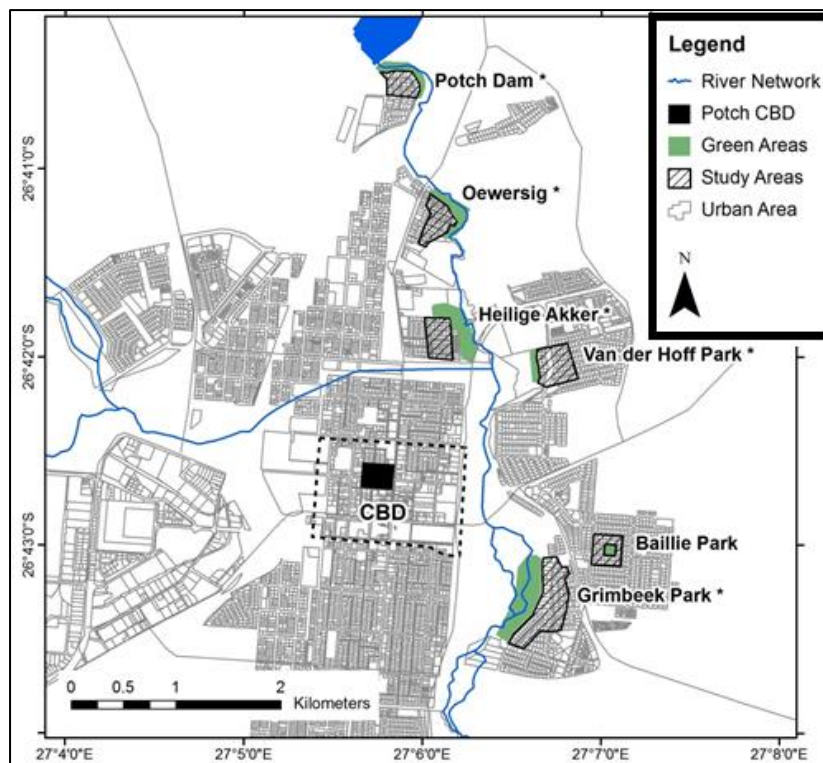


Figure 4: Potchefstroom proximity principle case study demarcation
Source: Cilliers and Cilliers (2015)

The collective results of the Potchefstroom Case study (N=188) illustrated a statistical difference between zones located further from the green space ($p=0.76$), thus rejecting the null hypothesis and disproving the proximity principle (as illustrated in Table 1).

Table 1: Statistical analysis pertaining to the green proximity principle study in Potchefstroom

Area	Zone	N (188)	R/m2	(SD)	*Marked differences are significant at $p<0.05000$	
					[1]	[2]
Collective Potchefstroom area	1	62	935.08	219.33		0.762247
	2	64	1133.77	287.21	0.000062	
	3	62	1101.61	240.52	0.000820	

Source: Cilliers and Cilliers (2015)

Ecosystem disservices associated with crime in green spaces (Konijnendijk et al., 2013: 22) and the perception of green spaces as crime hotspots (Perry et al., 2010), were identified as possible contributing factors why residential properties located adjacent to green spaces exhibited a lower price per square meter than properties located further away. Cilliers and Cilliers (2016) identified the lack of function and ownership connected to green spaces, as contributing factors for negligence and failure of green spaces in local context.

In an attempt to steer the national vision towards realising the importance of green spaces within the urban landscape, the South African Cities Network (SACN) coordinated a research project by Cilliers and Cilliers (2016) resulting in the publication “Planning for Green Infrastructure: Options for South African Cities” which introduced the notion of green infrastructure (GI) as a long-term strategic approach to plan green spaces as a network of supportive infrastructure.

It contributed to the discourse on the valuation of public green spaces from different social and cultural gradients, as well as the discourse on user-values and valuation from a local perspective. It called for the integration of green infrastructure as part of mainstream Spatial Planning, recognising that much effort will be needed to change perceptions about the necessity of green spaces in both urban and rural landscapes in South Africa. To sensitise decision-makers to grasp the value and role of green spaces as a 'public good' and 'economic asset', even more practical guidance is needed today (Cilliers et al. 2018) with a proactive and deliberate response to address contemporary challenges.

It mandates a shift towards resilience thinking in planning (Schoeman, 2017; Meerow et al., 2016; Meerow and Newell, 2016), where Spatial Planning response to the increasing economic, social and spatial vulnerabilities in cities, and halt the rapid depletion of natural resources and environmental degradation (Harrison et al., 2014). In the face of unprecedented urbanization and climate debates, resilience thinking is crucial (Meerow and Newell, 2016) and should be considered as mainstream spatial planning.

It implies planning structures and systems that will allow communities to endure change (Spacey, 2016) and for methods to explore the dynamics of the city and spatial systems in different ways (Schoeman, 2018). It calls upon a systems approach to planning contemporary urban landscapes, recognizing socio-ecological and socio-technical networks (Meerow and Newell, 2016:39) across spatial scales, inclusive of learning and innovation (Schoeman, 2018). Such structures and systems demand transdisciplinary planning.

3. Transdisciplinary planning towards resilience

Transdisciplinary planning goes beyond the "primacy of science" (laypersons inputs in scientific research) as well as the "primacy of practice" (provision of classical decision support), establishing a third epistemic way (Wiek 2007; Jahn 2008; Bergmann et al. 2005) where experience-based guidelines find mutual grounds between all stakeholders (Cash et al. 2003). Transdisciplinary planning brings academic knowledge and non-academic knowledge together, as illustrated in Figure 5.

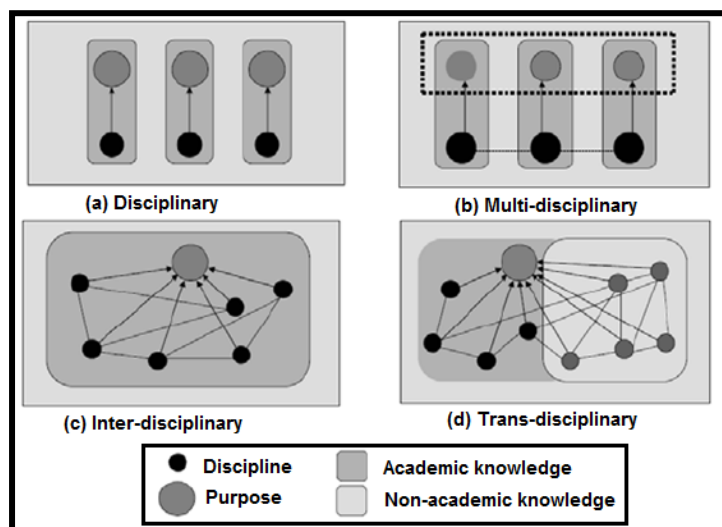


Figure 5: Scope of disciplinary approaches in promoting the interface between disciplines
Source: Fry et al (2007)

Transdisciplinary planning could strengthen the spatial meaning of resilience in the contemporary urban landscape, by capturing metabolic flows (production, supply and consumption chains), social dynamics (demographics, human capital and inequality), governance networks (institutional structures and organisation) and the built environment (ecosystem services in the urban landscape) (Harrison et al., 2014, Schoeman, 2018). Transdisciplinary planning provides a platform to explore the socially and spatially integrated dynamics of the urban landscape in different ways, as it calls upon a 'planning with' approach as referred to by Cilliers and Victor (2018). Such approach is grounded in anthropological understandings of space and cities as 'meshworks' (Ingold, 2016:10), which simultaneously draw on literature and concepts in spatial planning, in an attempt to make the argument for a 'planning with' approach 'policy relevant' (Spiegel, et al., 1999:182-186).

A 'planning with' approach draw on the expertise of transdisciplinary stakeholders, including the indigenous knowledge and lived experiences of local communities as agents of urban change. It contributes to realising the potential of integrative planning as it challenging professionals, scientists, authorities, policy-makers and local communities to take collective ownership of the direct environment (Cilliers & Victor, 2018). It will align with trans-urbanism approaches that redefine urban life and introduces new politics of the urban landscape (Thrift, 2013), in relying on multiple stakeholders to collectively reorganise the urban landscape as a living structure, informed by the urban landscape itself (Mulder, 2002).

Such a transdisciplinary 'planning with' approach could place public green spaces as the common denominator for aligning informality and sustainability, when green spaces are perceived as a 'public good' and an 'economic asset' that can benefit both communities and their environment through the ecosystem services they provide. The valuation, and prioritization of green spaces in this sense, would not only advance supporting ecosystem services such as enhanced biodiversity (Cilliers et al., 2013), habitat provision (Stiles, 2006), and the provision of refuge to species that are disappearing from urban areas (Hodgkison & Hero, 2007) but also regulating ecosystem services such as reduced atmospheric carbon dioxide (Cilliers et al., 2010) enhanced air quality (Bolund & Hunhammer, 1999), countering heat island effects (Akbari et al., 2001), limiting noise pollution (Bolund & Hunhammar, 1999) , but would also result in multiple cultural ecosystem services (social benefits) such as physical (Kuo, 2003, Roger, 2003) and psychological restoration evident from the mediational analyses by Van den Berg et al. (2007), as well as increased levels of physical activity (Owen et al., 2004), stress relief (Hansmann et al., 2007), happiness (Chiesura, 2004) and better neighbour relationships (Roger, 2003). It would further entail cultural ecosystem services with economic benefits relating to increased tourism (Wooley et al., 2003), enhanced local investment in the area (Cabe Space, 2009), increased property values (Luttik, 2000) and overall improvements in quality of life (Schultz and King, 2001; Smith et al., 2002).

Spatial Planning will still be confronted with the management of change, but the emphasis will shift from land-use, towards managing interaction between space, activities, and values (Danin, 2019). Interaction planning might soon become the new axiom (Danin, 2019) of the contemporary urban landscape as transdisciplinary research feeds into values to inform smart spatial data towards informed decision-making and good governance. Such transdisciplinary approaches supplement integrative thinking (Harrison et al., 2014) where the impacts of the urban landscape are visible from the perspective of earth sciences, life sciences, social sciences and applied sciences, and a proactive response to urban resilience, more probable, with the realisation of new urban innovations such as water sensitive planning, green infrastructure planning, urban agriculture options, alternative sanitation systems, eco-engineering solutions, carbon control measures, urban risk management and overall adaptive planning, illustrated in Figure 6.

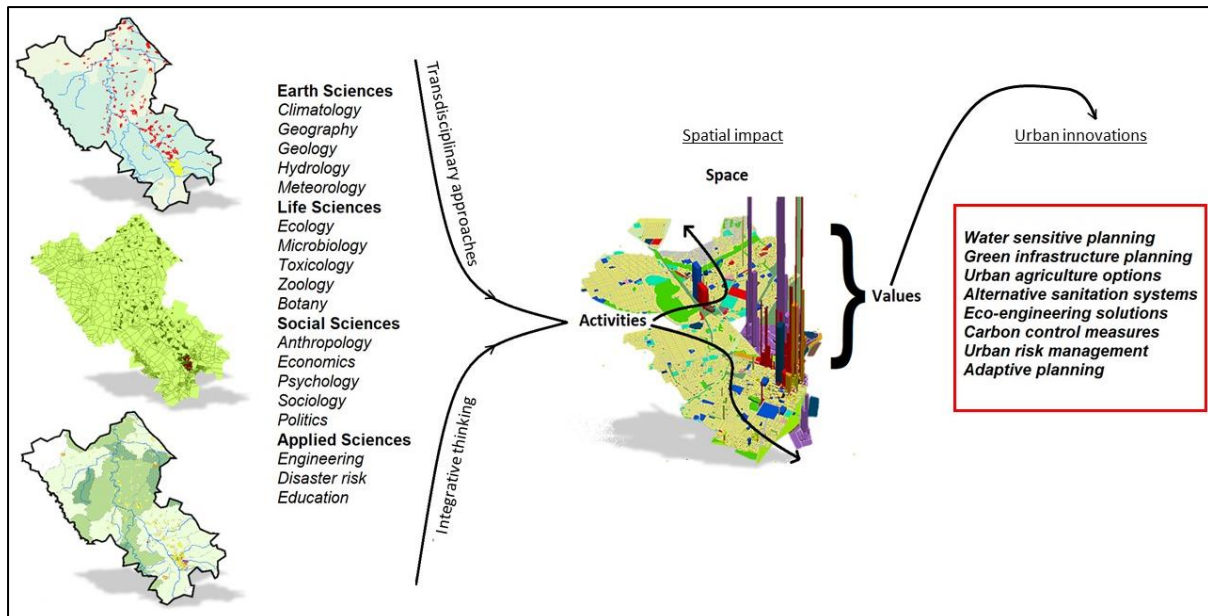


Figure 6: Change management in the contemporary urban landscape leading to urban innovations
Source: Own creation (2019)

Finally, in agreement with Pinson (2004), disciplinary identity should remain as a precondition of transdisciplinary collaboration. Thus, while other mature sciences may, and should, contribute to the urban dialog, Spatial Planning should emancipate itself from these theoretical and methodological frames to further construct its own identity (Pinson, 2004) as a global scarce skill and national priority, to give spatial meaning to supplementary disciplines.

Conveying such strategic and lateral thinking, Planners would need to become generative leaders. Moving away from adaptive leadership that is motivated by challenges or problems (Senge, 1990) and moving towards generative leadership, that recognizes and taps into collective intelligence and energy to generate effective solutions (Klimek et al., 2008:2). Such leaders have courage and an acute level of socio-emotional intelligence to identify the core issues to be addressed, and to frame these issues in a manner that will motivate a variety of stakeholders to engage in creating urban innovations (Bushe, 2019).

Such Planners would be able to co-produce innovation to address the great questions of our time: How to embedded resilience thinking in managing change of contemporary urban landscapes by also asking the questions of resilience for whom, resilience from what to what, and resilience when, where and why (Meerow & Newell, 2017). How to transform and decolonize planning in Africa to be inclusive. How to find sustainability within informality. Academia stand central to developing socio-emotional intelligence as a soft skill for contemporary and future planners and generative leaders. that would require a greater emphasis on experiential learning, a methodology within social constructivism, to learn through experience, and "learn through reflection on doing" (Felicia, 2011) embracing also a "safe to fail" approach in urban planning and design (Ahern et al., 2014). It is through such inquiry-based approaches that we can collectively become co-producers of knowledge (Tengo et al., 2014) and agents of future change, needed to collectively, build the city.

"We have one half century left to get urbanisation right".
The time for generative Planners to rise, is now.

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