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CONCLUSIONS – URBAN SUSTAINABILITY IN THE OMANI CONTEXT

„Sustainability is not a fixed state of harmony, but rather a process of change, in which the exploitation of natural resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as with present needs.” (WCED 1987).

When the Sultanate of Oman started its modern development in the early 1970s, a new administrative system was established, schools and hospitals were constructed, all kinds of hitherto lacking services and facilities were provided and the development of an expanding road network and a booming construction sector was started. The economic transformation of the Sultanate was possible thanks to the recent discovery of oil.

This moment coincided with a global discourse among academia and professionals alike on a report published by the Club of Rome in 1972 called ‘Limits to Growth’. The report said that the human ecological footprint cannot continue to grow indefinitely because Planet Earth is physically limited and in fact rather small relative to human activity. Humanity cannot – in the long run – use more physical resources and cannot generate more emissions every year than nature is capable of supplying in a sustainable manner. In the following years the international discourse on sustainability continued i.e. with the publication of ‘Our Common Future’ (known as the ‘Brundtland Report’), a report of the World Commission on Environment and Development. It aimed to discuss environment and development as one single issue. One finds in this

Brundtland report of 1987 a very broad definition of sustainability: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (UN 1987) This report laid the groundwork for the convening of the 1992 Earth Summit in Rio and the adoption of Agenda 21, (UN action plan with regard to sustainable development) the Rio Declaration that “states that long term economic progress is only ensured if it is linked with the protection of the environment“ (UNEP 1992), and to the establishment of the UN Commission on Sustainable Development. The UN Sustainable Development Goal 11 targets “By 2030, [to] enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries“. The recommendations proposed here shall contribute to this goal for Oman and hopefully for other urbanising areas in similar contexts.

When the research on ‘Sustainable Urbanisation Patterns in Oman’ was initiated in 2010, the Sultanate of Oman was still a place where the concept of *limits to growth* seemed not to be relevant. The spectacular economic growth and technological transformation let many Omanis believe that the present standard could be sustained indefinitely. From the onset of the 1970s modernisation Muscat Capital Area had been expanding day by day, with new housing areas under development across the Al Batinah plain and an ever increasing demand for new roads, bridges and highways to satisfy car-based mobility. Infrastructure provision (water, sewage but also green spaces) could not keep pace with the rapid development. In Oman, the economic transformation is visible in urban development.

The process of urbanisation – as witnessed in Oman – cannot be turned back, it is irreversible. Decisions taken today affect the lives of all residents and for generations into the future. Research on urbanisation is not meant to stop that process, but might influence the direction, speed and the nature of urban transformation. The aim is to influence urban development under limited resources. This would require well-managed development with priorities for achieving social, economic, and physical development that are made to last. These premises were the guiding questions behind the research and also behind this publication. Sustainable urbanisation in Oman has

been discussed in four dimensions, economic, social, ecological and political, summarized in Oman-specific statements.

Regarding the **economic dimension** the following aspects should be taken into consideration for future urban and rural development policies:

Muscat Capital Area and other urban centers in Oman are closely linked to a naturally given environment, such as coastline, mountains and wadis. Respecting these natural limits to urbanisation would allow agriculture and fishery to develop and to remain important economic factors in the country. The unique natural landscape and scenic views form a basic resource for eco-tourism and cultural tourism. These tourism sectors offer another possibility to diversify the country's economy, while saving and protecting natural settings. Potential given by exploring and investing into renewable energies (water, sun, wind) have not yet been fully identified. In light of the post-oil urbanisation era, renewable energies can open a strong market segment and contribute to a sustainable economy. Reducing the dependence on finite fossil fuels for energy supply, water desalination and transportation is crucial in regard to the rapid urbanisation process. At present, a huge amount of expenses goes into the car-based transportation sector, including high costs for road construction. But the society also has to bear high follow-up costs when taking into consideration the time and stress wasted in traffic congestions, the high amount of accidents and the loss of environmental quality. Investment into a sustainable public transport system seems highly recommendable, not only from the economic point of view but also from the environmental side, by reducing private car-based commuting, and from the social side by offering mobility for all and affordable and easily accessible means of transport. Finally, there is a negative impact on the urban economy resulting from poor quality buildings with a short life span of about 20 years only, using cheap materials and unsustainable construction methods.

Regarding the **social dimension**, the following aspects should be taken into consideration for future urban and rural development policies:

The rich and unique cultural heritage of Oman is an asset for sustainable development. Traditional cultivation of land, preservation of water and land resources in the past, have created a culture in alignment with the climatic and ecological parameters of Oman. Thus, to develop the built environment in harmony with the landscape surrounding it should become a guiding parameter. Learning from vernacular examples of architecture and urbanism would also mean to sponsor socially responsive and ecologically integrated neighbourhoods instead of isolated single-family units.

Social sustainability means a socially inclusive city that integrates all parts of society into the current urbanisation process, as social segregation creates inequality and urban uniformity. Mixed urban developments accessible to all parts of society would create resilient cities of the future. A more inclusive development could be achieved when also reconsidering current types of Integrated Tourism Complexes (ITCs), as they cater to a small and affluent part of society only yet graft onto expensive infrastructure projects paid by the government (roads, ports, airports).

With reference to the **ecological dimension** the following aspects should be taken into consideration for future urban and rural development policies:

The current process of urbanisation fosters low-rise and low-density neighbourhoods irreversibly converting limited virgin and agricultural land. Natural resources including habitats, land and fresh water are at risk as the balance between environment and urban development is disturbed. Thus, strategies to re-densify and transform neighbourhoods to become multifunctional and diverse, resilient and sustainable should be developed. The real costs of urban sprawl on the environment, on its inhabitants and on the depletion of resources have not been assessed so far. Ongoing rural-to-urban transformation processes should be channelled without destroying the unique landscape and the characteristic natural scenery of Oman, avoiding the cutting of mountains, levelling of hills and draining of wadis. Building regulations that foster similar plot sizes, self-standing villas and separation of function all around the country should be reviewed to better respond to local natural and climatic settings.

Related to the **political dimension**, the following aspects should be taken into consideration for future urban and rural development policies:

The cultural diversity and variety of landscapes ask for a strategic approach towards spatial development that promotes equal opportunities and fair conditions in all parts of the country. Decentralized administrative systems would support a successful and locally adapted urbanization management structure. Urgently needed is a responsible system of land-allocation that distributes land conservatively according to local actual needs. Pre-condition to any sustainable governance is transparent decision-making that encourages participatory and community-based development as well as a systematic monitoring of urban and rural development.

Based on these Oman-specific definitions of sustainability the following recommendations have been formulated and discussed during an International Conference in 2014¹ among professionals and politicians, emphasizing the need for continuous review of ongoing development trends.

RECOMMENDATIONS

Council for Sustainability: Sustainable urban development requires a strategic approach and needs to be continuously steered and monitored. The complexity of the issue asks for an inter-disciplinary and cross-sector administrative body. We recommend to follow the German example and establish a *Council for Sustainability*.² The most important role of the Omani Council for Sustainability is seen in developing targets and indicators for monitoring sustainable urban development and thus giving advice to the Omani Government where to set priorities towards a sustainable Oman. An independent Committee would be needed to accompany the process of the Omani National Spatial Strategy. The council could furthermore take on a pro-active role in fostering nationwide discourse through i.e. an annual report on the state of sustainability in the country.

Decentralized and participatory decision making: Municipalities and local communities will play a crucial role in supporting sustainable development. A multi-level top-down management should be complemented by decentralized responsibilities. Involvement of local communities allows them to better recognize their specific potential. Sustainability and social inclusiveness need active support from all parties of the society, governmental institutions, the private economic sector and civil society at large.

Land allocation reform: Recommendations to reconsider the land allocation practice are not at all new or brought up through this research only. The Muscat Area Structure Plan and the Muscat Area Housing Study, dating from 1990, more than 25 years back, already called for a reform of land allocation. One has to recognize that the land allocation system in place – drawing a plot in a public lottery – does not work anymore. As stated in the Muscat Area Structure Plan of 1990: „*Suitable measures should be adopted to identify applicants in genuine need of a plot*“ We propose to consider and to further evaluate as suitable measures i.e. limiting the number of plots per family or limiting eligibility to married couples/family units, or limiting eligibility to applicants who can demonstrate capability and intention to construct residences for personal use and / or re-acquisition of plots not developed within a certain time period.

To foster *resource-efficient land use* we recommend reconsidering plot sizes and set-backs, street widths, and physical densities towards a more compact urbanisation. Efficient land use also includes priority to develop empty plots within an already built-up context. We recommend reconsidering the presently practiced zoning policies that favour a separation of functions (residential, commercial, administrative, industrial, or recreational use) and considerably contribute to forced mobility and to increasing urban sprawl. We recommend mixed land-use development wherever feasible in order to reduce distances and to foster walkable neighbourhoods.

Reconsider land recycling and infill policies: Many cities follow a policy of recycling land similar to water or certain waste recycling. Priority is given to re-development or re-use of abandoned or derelict or unused land instead of taking

unused ‘virgin’ land. This could also become an approach to explore for urban areas in Oman. Advantages are obvious: already serviced areas are used again, less open land is going to be sealed, plot locations are more central, easier accessible and already integrated into a developed spatial and social context. These kinds of infill-projects stimulate local identity.

We recommend considering an efficient public transport system appropriate to local climate and priorities for Omani cultural context. A multi-modal system that combines public transport on road with a rapid-transit rail-bound system and water-taxis seems worthy of further studies.

Public private partnership could become an interesting way of providing services (energy, water, waste, sewage) more efficiently but still under state control. It could strengthen the private sector and thus contribute to diversifying the economy. International best practice should be assessed and locally adapted models provided.

Integrated urban planning seems to be indispensable when uncoordinated processes of land allocation and infrastructure provision are to be avoided. Land-use planning, transport planning and infrastructure planning must go hand in hand. A more comprehensive urban development plan seems recommendable, which would update the 1990 structure plan together with capacity building among professionals and civil servants in Oman.

Planning for the rural-urban interface: As already initiated with the Oman National Spatial Strategy, a regional planning that goes beyond the municipal administrative units will become necessary. This has in particular been proved through our research on transformation in the rural hinterland of Muscat Capital Area documented in this publication, but is also true for other urban regions in the country. Planning districts should be formed by common challenges and potential of a region rather than by administrative boundaries. Capacity development in this new field of peri-urban/regional planning might become necessary.

Landscape protection and ‘eco-system service’: Any development that threatens or even destroys landscape is not sustainable. Land must be protected to keep landscape in its natural shape. Landscape/nature is an asset – a resource – to be treated carefully. To balance landscape as a cultural factor with economic interests for tourism development has become one of the most challenging aspects in Oman during the past years. Land and landscape should also be reserved for open and green space within urban structures. The many wadis are such a landscape element that should be used as an open space within any built-up context. Landscape and open green space are the basis for the ‘ecosystem services’.

Careful neighbourhood design: In order to foster sustainable urbanisation patterns, settlement structures have to be designed on a neighbourhood/city quarter level. The basic unit –the individual plot– is not at all suitable for creating an environment that shows qualities such as: resource-efficient land use, privacy, community space, green areas, shaded public space, energy efficient buildings, streets for cars and pedestrians. Adapted physical planning standards and building regulations will provide the legal background. Urban design at the neighbourhood level might also revive the traditional ‘hara’ that was based on clustering houses around public and semi-public space. The need for another basic unit – the neighbourhood– is furthermore evident, as it will become more and more important to cater for a healthy living environment. In a sustainable city green, trees and parks are seen as necessary facilities to be provided (similar to roads or kindergardens) and cannot be left to individual residents to cater for his individual plots. Planning and designing entire city quarters (such as Al Khuwair or Madina Sultan Qaboos) would also allow to cater for a higher variety of neighbourhoods that adapt to local conditions (wadis, hills, other local features) and thus create individual, identity-supporting residential estates, and contribute to a community spirit and to social sustainability.

Monitoring: It is strongly recommended to control the urbanisation process by a set of locally adapted targets and indicators. In 2013, UN Habitat proposed Sustainable Development Goals – such as: *“to halve the acceleration of sprawl (urban land cover) relative to population increase by 2030, to increase the*

*amount of urban public space over total land area by one third by 2030, to reduce by half the average travel time taken per person to access jobs, goods and services by cleaner, affordable and safer public transport and/or walking and cycling.”*³ Specific indicators that are suitable to monitor sustainable urban development in Oman are to be developed to allow comparing local, regional and global trends.

During the research and critical review of the last decades of urbanisation in Oman, process of transformation and growth accelerated while at the same time resources of energy and land became even more scarce. Within the five years of research a young Omani population grew that is eager to settle and will consume even more land, material and energy.

With the rapid decline in oil revenues as seen in the fall of 2015, Oman has in the meantime entered the post-fossil age. The Sultanate has to cope, for better or worse, with its legacy of rapid modernisation. The present rate of development as supported by a vast array of government incentives is no longer viable. Yet, as the UN Sustainable Development Goals point out, this wasteful development is not necessary. Oman possesses immense immaterial resources not least amongst the young population that will, hopefully, take initiative and translate these and other recommendations into practice towards sustainable patterns of urbanisation in Oman.

NOTES

1. Challenges for Urbanisation in Arab Golf Countries, International Conference March 2014, TRC/GUtech Muscat
2. <http://www.nachhaltigkeitsrat.de/en/the-council/mandate>
3. UN Habitat, Post 2015 Development Agenda 2013
4. UN. "Sustainable Development Goals," n.d. <https://sustainabledevelopment.un.org/?menu=1300>.
5. Weidleplan. "Muscat Regional Plan Phase 3 Final Report," 1991.
6. "Agenda 21 - United Nations Conference on Environment & Development Rio de Janeiro," 1992.
7. Imperatives, Strategic. "Report of the World Commission on Environment and Development: Our Common Future." Accessed April 12, 2016. <http://www.ask-force.org/web/Sustainability/Brundtland-Our-Common-Future-1987-2008.pdf>.
8. Meadows, Donella H., and Club of Rome, eds. *The Limits to Growth; a Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books, 1972.