

## **GIZ-Project**

Integrated Resource Management In Asian Cities:

The Urban Nexus

## **Template of an Urban Nexus Checklist**

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## URBAN NEXUS CHECKLIST

### A. Functions of Urban Nexus Checklist

One of the principal goals of the urban nexus approach is to efficiently manage water, energy, and land (with a view on food security). Simultaneously, the interrelationships between these nexus dimensions have to be looked at in an integrated way. Thus, with its comprehensive view, the urban nexus approach aims at realising synergies between water, energy, and land on the project level. In particular, the urban nexus focuses on energy-efficient, water-efficient, and land-efficient construction, energy and water efficiency in industrial applications, energy recovery from wastewater and organic waste, use of renewable energies including biomass from agriculture, and efficient transport systems.

For the partner cities of the GIZ-project, a template for an Urban Nexus Development Strategy was developed to internalize and institutionalize the urban nexus approach. The Urban Nexus Development Strategy consists of strategic commitments, strategic activities, technical activities and strategic components, which contain suggested catalogues of urban nexus-related projects (COPs). The Urban Nexus Development Strategy serves to mainstream the holistic urban nexus approach into the cities' sectoral infrastructure plans, the comprehensive urban spatial master plans, and other comprehensive development plans including investment programs for infrastructure. It is expected that partner cities formally adopt an Urban Nexus Development Strategy based on the template.

Against this backdrop, the urban nexus checklist was developed to fulfil two functions for partner cities. First, the checklist shall be applied as a tool to support decision-making on the selection of infrastructure projects to be included in **municipal infrastructure investment programs**. The checklist is to be integrated into standard administrative procedures governing municipal budgeting procedures.

Likewise, the checklist can be applied in similar sectoral approval procedures for public and private investments and integrated into the standard operational procedures governing those. For example, - especially with a view on Green Building Codes being introduced in some middle-income countries of South East Asia (such as e. g. the Philippine Green Building Code, which became effective in June 2015) - the urban nexus checklist can also be integrated into the standard operational procedures when issuing building permits for private investments.

This checklist will help the administrations of partner cities to:

- Avoid overlooking potential interrelationships between the urban nexus dimensions water, energy, and land use;
- Identify needed analyses for municipal policy-makers enabling them to take well-informed decisions on infrastructure projects;
- Communicate effectively with consultees, concerned stakeholders and the general public so that they can comment in a useful manner on a project and its effects on the resource situation;

- Provide a record of a municipal review for future reference.

The template for the urban nexus checklist has been designed to be useful across partner cities and it cannot reflect all the specific requirements and practices of urban management in different countries.

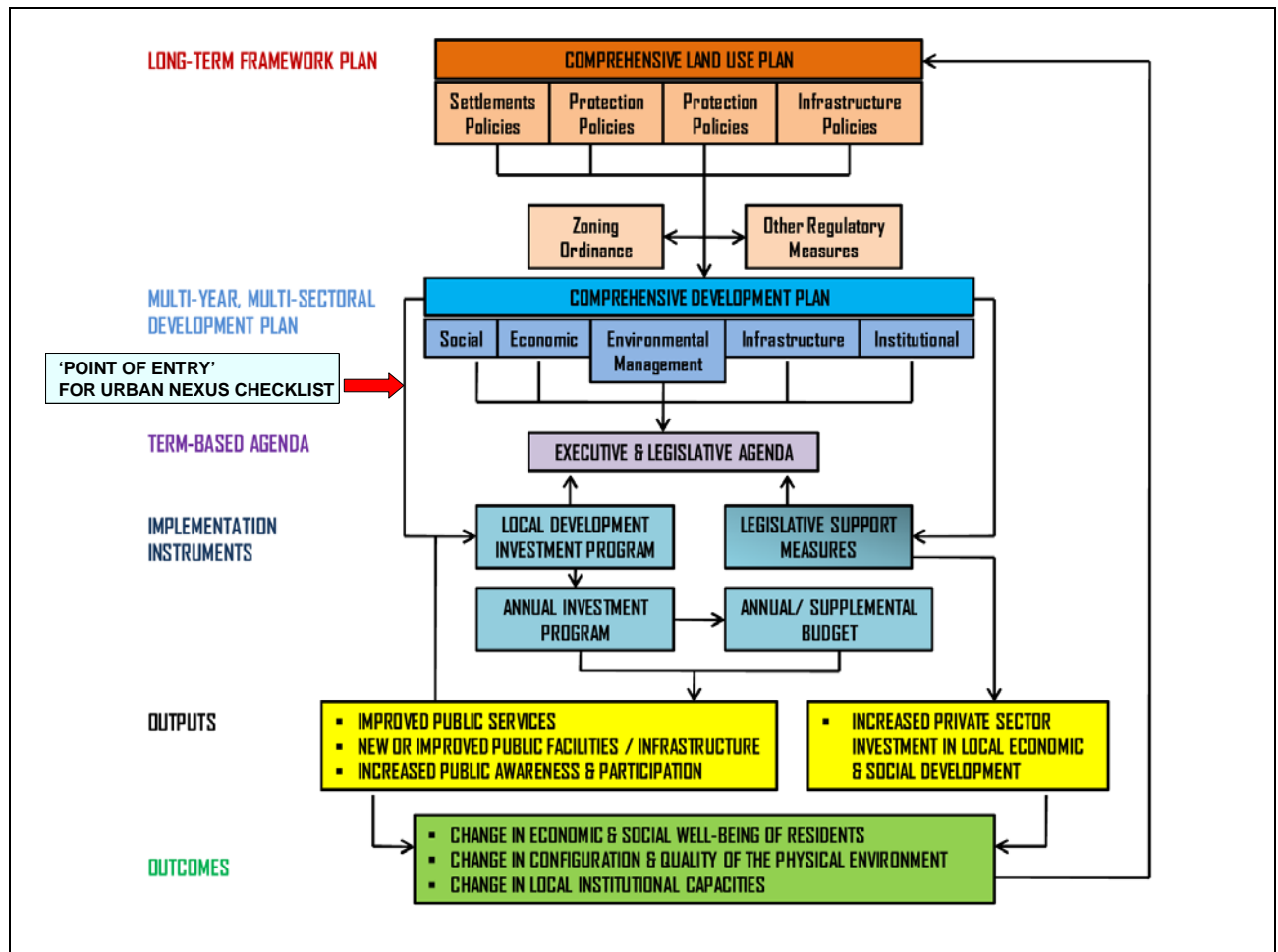
## **B. Applications of the Urban Nexus Checklist**

### **B.1 The Urban Nexus Checklist in the Municipal Budgeting Process**

The urban nexus checklist is an initiative associated with a set of multi-pronged efforts to institutionalize the urban nexus approach in partner cities. The urban nexus checklist serves to prepare and support political-administrative decisions in the area of budget allocations. It shall be integrated into partner cities' standard operational procedures when preparing investment decisions on infrastructure projects (including, e.g., social housing projects).

An example from the Philippines shall illustrate this. Figure 1 below depicts the framework for integrated budgetary planning in Philippine cities. Major investment decisions on infrastructure projects are shaped by infrastructure policies laid out in the long-term spatial Comprehensive Land Use Plan (CLUP) and the non-spatial comprehensive development plan (CDP), which lists programs and project proposals. The checklist can be used to examine the urban nexus dimensions of tentative infrastructure projects, before they move on further towards implementation by becoming part of the Local Development Investment Program. Thus it is suggested to locate the 'point of entry' for the checklist between CDP and LDIP as indicated by the red arrow in Figure 1. Correspondingly, the application of the checklist needs to be incorporated as a mandatory step into the administrative documents guiding the municipal budget procedures.

Figure 1: Integrated Planning Framework of Philippine Cities



Source: Presentation of Mr. Wilfredo Prilles, City Planning and Development Coordinator, Naga City (Philippines), GIZ-UNESCAP Urban Nexus Training, June, 16, 2015; Chiang Mai (Thailand); author's adaptation.

Furthermore, in the Philippines the application of the checklist is bolstered through the priority areas included in the national Local Budget Memorandum (LBM) No. 68 of July 2014. The General Guidelines of LBM No. 68 encourage municipalities (local government units) to align their budgets to five priority areas, including 'Rapid, Inclusive and Sustained Economic Growth' and 'Integrity of the Environment and Climate Change Adaptation and Mitigation'.<sup>1</sup> In addition, LBM No. 68 endorses a Grassroots Participatory Budgeting Process (GBP). GBP – strongly shored up through a Joint Memorandum Circular endorsed by major Departments<sup>2</sup> - creates a legal foundation for a strong participation of basic sector organizations and other civil society organizations in the budgeting process. Thus, supported through national level regulation, comprehensive stakeholder participation – a major urban nexus feature - can be filled with life.

The application of the urban nexus checklist requires interdisciplinary teams composed as required by context of the project in question. For example, the team for reviewing infrastructure projects should include electrical engineers, hydraulic engineers, urban planners, and environmental specialists. This

<sup>1</sup> Republic of the Philippines, Department of Budget and Management, Local Budget Memorandum No. 68, General Guidelines, p. 3, Item 2.2.4. Manila, July 2014.

<sup>2</sup> DBM-DILG-DSWD-NAPC Joint Memorandum Circular No. 4. November 2013, Manila.

will encourage cross-sectoral exchange and foster systemic thinking. Thus it can be ensured that the urban nexus dimensions water/energy/land use (with a view on food security) are adequately dealt with, urban nexus interrelationships are identified and investigated with regard to their potential for creating resource-efficiency enhancing synergies.

## **B.2 The Urban Nexus Checklist in the Issuance Process of Building Permits**

The Urban Nexus Checklist can also be inserted into the procedures applied when issuing building permits. Again, the Philippines can serve as an example. In June 2015 the national level Ministry in charge of the Philippine Building Code, the Department of Public Works and Highways (DPWH) issued a Green Building Code. This Code is as yet untested in both implementation and enforcement. The overall regulatory framework that will actually take care of the proper implementation of the Green Building Code is still in the making. This notwithstanding, the Philippine Green Building Code can be considered as an enabling framework for introducing the urban nexus checklist into issuance procedures of building permits just by local ordinance.

One of the key actors in the multi-step issuance process for building permits in Philippine cities is the City Planning and Development Office (CPDO). The CPDO is responsible for issuing the 'locational clearance'. The locational clearance is required to ensure that the construction project conforms to the city's CLUP and the zoning ordinances. Hence, for the Philippines it is suggested that the Urban Nexus Checklist should be integrated into the 'locational clearance' procedure. **It can be assumed that partner cities in other countries have equivalent procedural steps, where the checklist can be applied.**

The process of issuing construction permits can be used as a pilot situation for discussing findings of **urban nexus reviews** with applicants, who then might be induced to think more about water-, energy-, and land-efficient construction and the urban nexus resource interrelationships. Also, the team issuing a construction permit might be of an interdisciplinary nature. In the Philippines, for example, this team consists of a licensed architect, a licensed engineer, and a civil servant who is neither architect nor engineer. Hence, application of the urban nexus checklist will also provide opportunities for interdisciplinary staff training in the nexus approach.

## **C. The Urban Nexus Checklist**

### **C.1 Outline of Checklist**

When examining infrastructure projects or building projects using a nexus-checklist, taking a life-cycle approach is recommended. The 'life' of an infrastructure project or building project consists of the following segments:

- Construction phase;
- Operational period;
- Decommissioning (demolition and removal).

The largest portion of resource inputs - water and energy - will occur during the operational period, which might last 30, 50, or 70 years. During this time the project may also have long-term effects on the water in its environment and the land uses in its vicinity. This notwithstanding, significant resource inputs of water and energy will also be required during construction and during decommissioning. For example, at the stage of decommissioning, issues of (final) resource recovery and energy recovery from the building will become relevant. It is acknowledged that it will be difficult to gauge quantities especially for water and energy required several decades from the present. This notwithstanding, thinking about such future needs genuinely belongs to the integral approach of the urban nexus. From several decommissioning endeavors successfully completed comparative values can be obtained. As a result, at least ballpark figures should be available.

The Urban Nexus Checklist consists of eight sections. Section 1 is dedicated to primary project data and major social (including gender issues) and economic effects (including green growth) the projects could have. (The review questions in Section 2 address consideration of alternatives, a prerequisite in early project states. Sections 3, 4, and 5 encompass the review questions for the nexus topics water, energy and land use (including food security). The latter sections are divided into two parts: review questions in part a) explore inputs of resources required, whereas questions in part b) look into the effects projects may have on water, energy, and land use. Section 6 contains (optional) review questions concerning climate change adaption and mitigation issues. Section 7 comprises review questions with regard to stakeholder participation and public consultation. Section 8 brings together all specific urban nexus review questions and contains a sub-section for indicating the results of the project's review with the help of the Urban Nexus Checklist.

## C.2 Urban Nexus Checklist

SECTION 1 – Description of Project						
	Review Question	Yes	No	n/a*	What further information is needed? / Comments and Remarks / What off-setting measures need to be taken?	Effect on Municipality's Budget (expected additional expenditures, if applicable)
<b>The Project in Municipal Plans</b>						
	Is the project in compliance with designations in municipal comprehensive spatial master plans?					
	Is the project in compliance with municipal (non-spatial) development plans?					
	Is the project in compliance with other municipal plans?					
<b>The Objectives and Physical Characteristics of the Project</b>						
	Are the needs for the project and objectives of the project fully explained?					
	Are all the main components of the project described?					
	Is the location of each project component identified, using maps, plans and diagrams as necessary?					
	Are the activities involved in construction of the project all described?					
	Is the time schedule for duration of construction realistic?					
	Are the activities involved in operation of the project all described?					
	Is the time schedule for duration of operation realistic?					
	Are the activities involved in decommissioning the project all described?					
	Is the time schedule for duration of decommissioning realistic?					
<b>Social Effects and Impacts</b>						
	Does the project require a social impact assessment based on national legislation?					
	Does the project affect the livelihoods of vulnerable groups?					
	In particular, does the project					

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