

Enhancing the climate and disaster resilience of the most vulnerable settlements in Lao PDR

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Using Spatial Planning to Develop Resilient Infrastructure

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National Context – Laos Overview

Basic Facts

Population: 6,492,000 (2015 census)

Urban Population: 32.9%

Land Area: 236,800km²

Economic Growth: 7% (World Bank, 2016)

Poverty Rate: 24.8 per cent

Population using Improved Water Source: 83.9 per cent

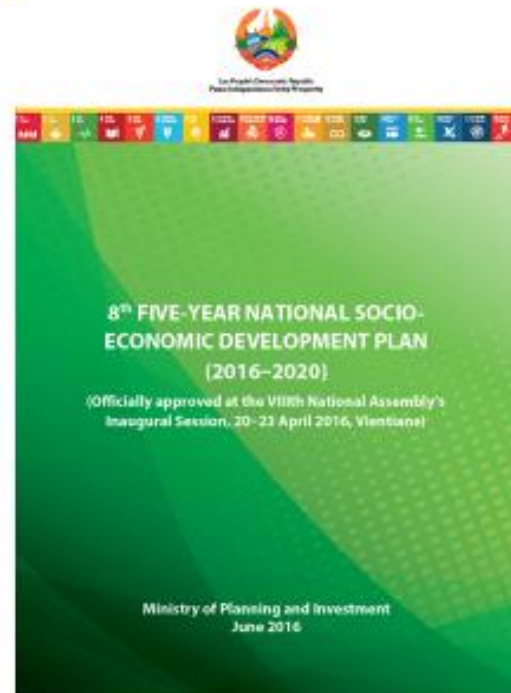
Population using Improved Sanitation: 71.1 per cent



National Context – Policy Context

Guided by the 8th 5 year Socio-economic Development Plan 2016-2020

- Laos' key aim to graduate from LDC status by 2020, and to become an upper middle income country by 2030
- 146 of 148 districts in the country have urban planning in place
- The Sam Sang Resolution organizes Provinces as Strategic Units, Districts as 'Comprehensively Strong Units' and Villages as 'Development Units'.
- This places great need on effective spatial planning for improved infrastructure development



Introduction to the Project

- Works in 189 villages in 3 southern provinces of Saravan, Sekong and Attapeu
- Targets approx. 107,000 beneficiaries

Component 1: Institutional level strengthening to reduce vulnerability in human settlements.

Component 2: Building capacity at the human settlement and community level for climate resilience.

Component 3: Enhance climate and disaster resilient infrastructure systems in human settlement.

Component 4: Ensure project compliance with AF and UN-Habitat standards for Knowledge Management, Advocacy and Monitoring.

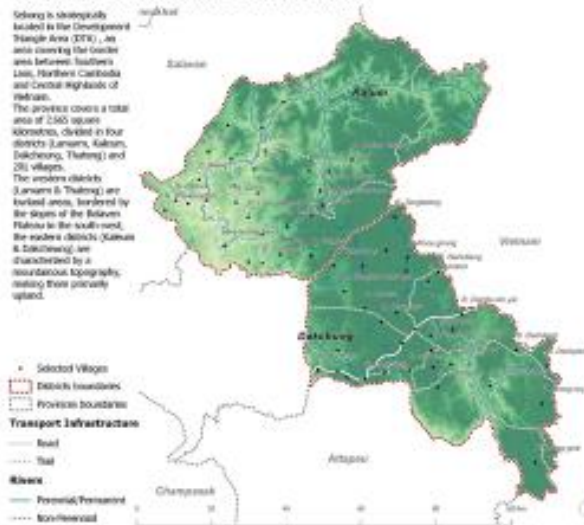


Using Spatial Analysis and Planning in the Project

- The 189 villages cover an area of around 17,500km²
- A geographically demanding area, which faces significant climate impacts (floods, droughts, storms, long-run temperature increase and precipitation decrease) and limited access
- Limited funding available – meaning there is a need to optimise efficiency in investment, by investing in larger infrastructure than benefits clusters of villages

PHYSICAL DETAILS AND LOCATION OF SELECTED VILLAGES

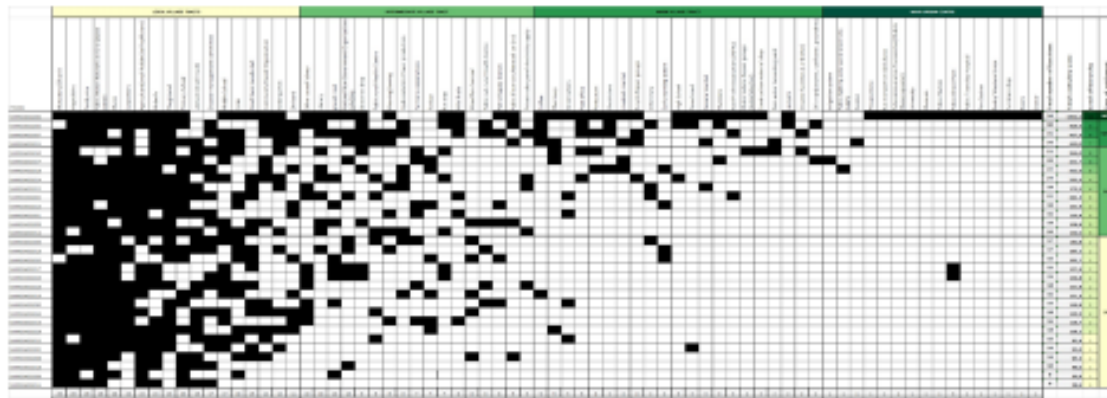
Selangor is strategically located in the Development Triangle Area (DTA), an area covering the Greater area between Kuala Lumpur, Northern Carleida and Central highlands of Malacca. The province covers a total area of 2,562 square kilometers, divided in four districts (Jansari, Kajang, Sepang, and Teluk Anson) and 216 villages. The western districts (Jansari & Teluk Anson) are forested areas, bordered by the slopes of the Selangor Plateau to the south-west, the eastern districts (Kajang & Sepang) are characterised by a mountainous topography, making their primary upland.



What Approach Did the Project Take

Determine a functional hierarchy of human settlements

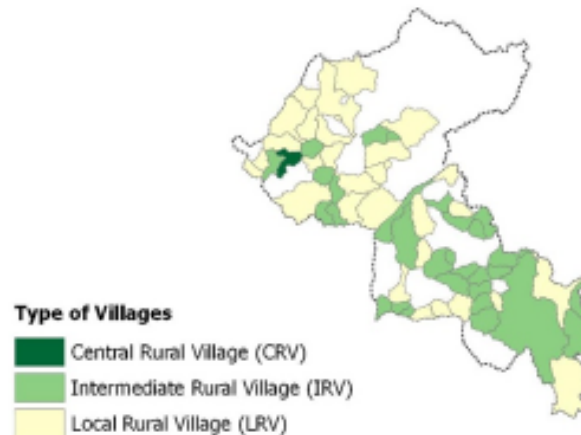
- The ordered matrix determines the hierarchy of settlements by grouping them into **basic, intermediate, and main settlements and determine a “set of functions” that should be covered** considering the highest presence of a function for each category in the context of the region
- Considering **local rural villages as the lowest level**, (bottom) an implicit assumption is that in a “regular/standard distribution” any higher hierarchical level should contain the number of functions of the precedent level(s) plus their own specific functions, hence the matrix allows to identifying settlements where functions are “missing” and whether functions of higher levels are present



Visualise the socio-economic development

By mapping (through GIS) the different typologies of settlements helps visualising how balanced the spatial development of the region is, which gives already some clear indications, in terms of prioritisation, for preliminary needed investments in each settlement

Villages in Kaleum show lower levels of infrastructure and socio-economic development than villages in Dakcheung. Around 70% of the selected villages in Kaleum are categorised as Local Rural Villages (LRV), considered the lowest level of socio-economic and infrastructure development, against the 35% of villages in Dakcheung

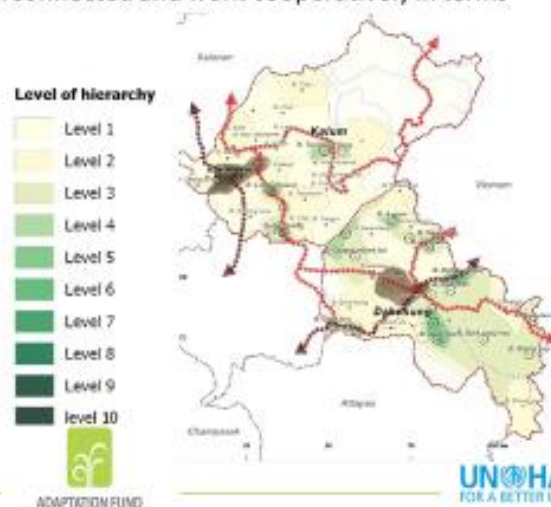


Identify the Degree of Territorial Linkages Between Settlements

The spatial analysis is then complemented with an isopleth map showing the levels of centrality of each settlement. The map can be drawn by hand or mapped in GIS. It visualises the territorial linkages of each settlement and identifies clusters of settlements (or areas of concentration of urban settlements) which are strongly interconnected and work cooperatively in terms of socio-economic activities.

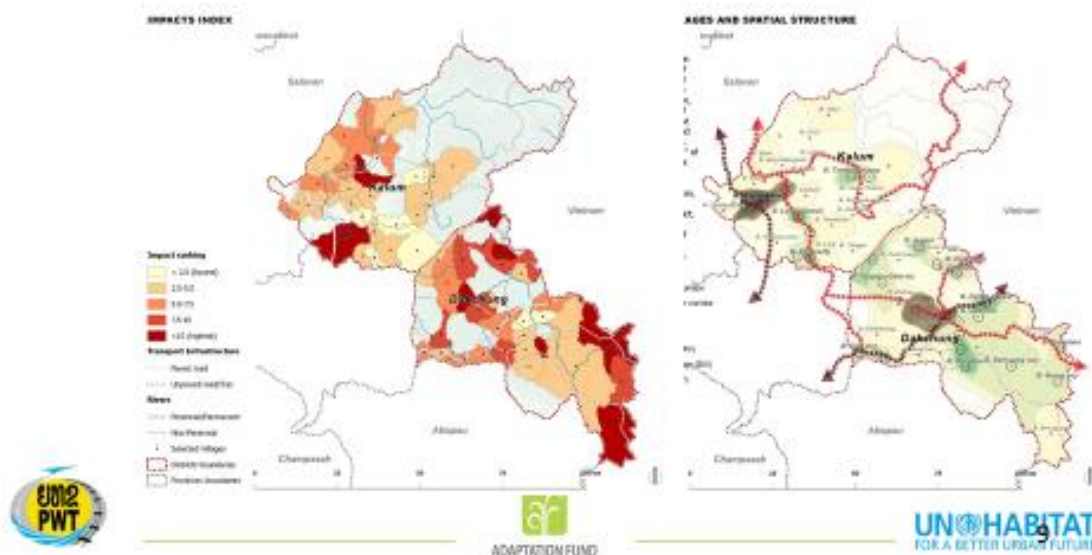
The territorial and socio-economic development of Kaleum is mainly centred on the southern tri-polar set of villages of Kaengkhoury, Thongkai and Songkhone

In Dakcheung, the "cluster" of settlements (Darkban, Dark Rern, Tongxieng and Dark Ran) represents the most productive area of the region



Overlaying Vulnerability to Climate Change

If we overlay vulnerability to climate change – as identified through a vulnerability index exercise in the left map, we can see where building infrastructure to reduce vulnerability will benefit other target villages, because these villages also rely on the main villages for their services



Empowering Villages in line with Sam Sang

The project has generated a wealth of original data at the village level

This data has been compiled in a village level infographic and translated into Lao language

This supports more effective decision making and knowledge management at village level

An example is shown on the next slide





Supporting Local and National Decision Making

- Under the strategy of socio-economic complementarity, the analysis of the existing and missing functions in the settlements within these clusters, helps to define priority investments for clustering services and facilities, considering the proposed regional settlement system, the distribution of functions among settlements and the settlement hierarchy
- The assumption in this assessment method, is that those human settlements where fewer functions are present are more sensitive, and their sensitivity would be reduced by providing the services that are largely missing.
- However, in some cases, villages with fewer functions depend on larger villages. Where the larger villages are vulnerable, their vulnerability is also felt in smaller villages. This means that smaller villages can still benefit from investments in larger ones



Thank you for your attention



Contact details

The Adaptation Fund Lao PDR project online:

-  **Website:** <https://www.adaptation-fund.org/project/>
-  **Facebook:** Climate resilience for emerging settlements in Lao PDR
-  **Twitter:** @AFLaos

