

CONCEPT NOTE 2

Water-sensitive Modernisation of Sam Neua Town and Extension Areas

Up-dating the 2011 Urban Master Plan for Sam Neua Town and Urban Extension Areas: incorporating a water-sensitive planning approach.

Prepared by TU Berlin and BORDA Laos
April 2024

CONCEPT NOTE 2

1. Project Title

Water-sensitive Modernisation of Sam Neua Town and Extension Areas

Up-dating the 2011 Urban Master Plan - incorporating a water-sensitive planning approach.

Relates to the Water Sensitive Area Development Plan for Sam Neua

Project 5.1 Comprehensive Urban Planning

Estimated time for project completion: 8-12 months - according to Lao Urban Planning Manual for a revision of a Level 2 town Urban Master Plan (p. 88). Note: With additional requirements for Water-sensitive planning adaptations, the revision period is to 16 months

2. Introduction/ Background

Sam Neua town currently lacks an official, up-to-date urban planning map to steer and regulate the planning of the town and its growing urban extension areas. Given the accelerating growth and development of Sam Neua Town, particularly in its official extension areas, the **current window of opportunity** to update the Urban Master Plan is critical. This update will incorporate principles of **water-sensitive modernization** to address the emerging needs effectively.

A key motivation to update the existing Urban Master Plan, in line with water-sensitive modernization, is the projected growth highlighted in the urban growth map from the baseline study, as well as current development trends. As indicated in the Sam Neua Town Baseline Study of the PolyUrbanWaters Project, these trends strongly suggest that Sam Neua Town and its villages in urban expansion areas are currently undergoing significant and accelerating growth. Moreover, they are facing increasing challenges such as inadequate urban water management systems (stormwater, wastewater, water supply) and poor solid waste management, all of which are exacerbated by insufficient future-oriented strategic planning, land-use planning and water catchment management.

Integrating water-sensitive modernization into the official Lao urban planning process is vital to sustainably manage these critical resources and enhance urban resilience.

3. Objective

The key objective of this concept note is to outline a strategic approach for developing a **water-sensitive town and urban extension areas to address the current needs stated above** - aiming to create sustainable, resilient urban environments that balance growth with environmental preservation. This includes implementing land use strategies that are compatible with Water-sensitive Planning / Water-Sensitive Urban Design principles (WSUD), engaging in participatory planning processes, and ensuring the protection of natural resources and spaces, all while accommodating population growth and preparing for the impacts of climate change.

Capacity building of local staff involved in planning, design, implementation and monitoring is essential (e.g. Land Use planning, GIS mapping, and drone mapping and monitoring) as well as water-sensitive planning principals and approaches.

This Concept Note outlines the procedure for revising the "Urban Planning" (Land Use Zone Plan), adhering to the official Lao Urban Planning process. It integrates **water-sensitive planning approach and principles** to direct and manage expansion in the urban extension area and the town, as well as firmly establish "prohibited/high control construction areas."

Description of key features to be integrated into the Water-sensitive Urban Master Plan

1. Protection of natural systems / natural environment

- Natural environments form the base for towns to function and withstand and recover from challenges like natural disasters.
- Protecting natural resources and integrating them into urban areas like parks and water bodies is a main goal (e.g. floodplain parks in Concept 3)

2. Mixed Use Zones

Mixed-use zoning integrates residential, commercial, office, educational, health, and recreational activities in a single area to make efficient use of available land through combining different types of spaces and activities and avoids single-use zoning strategies, (exclusively residential areas), to prevent urban sprawl.

3. High Risk Zones: Construction prohibited / High Control

High Risk Zones are designated areas where construction is either prohibited or highly controlled due to risks such as flooding and landslides.

4. Compact Urban Areas: Medium to high density

Efficiently designed areas with higher populations, optimizing land and infrastructure use; reducing the spread of unchecked and unplanned urban growth (sprawl); promoting infrastructure efficiency; and promoting local economy.

5. Approach for Stakeholder Engagement – cross sectoral/ participatory

In line with the Lao PDR Urban Planning Manual protocols - engaging stakeholders and key sectors in the processes at planning stages is essential. It ensures diverse perspectives and expertise are considered, fostering a collaborative approach to sustainable urban development and decision-making.

4. Purpose

During this crucial phase of urban expansion, there is a pressing need for comprehensive, **water-sensitive modernization and planning** of these areas, following Lao Urban Planning protocols, which will not only tackle current issues, but also lay a solid foundation for future growth, preventing the adverse effects of unplanned and uncontrolled urban development.

Specifically expressed needs for Sam Neua Town are:

- Livable, safe, and resilient urban environment.
- Prepare the town for climate change and accommodate population growth.
- Control urban sprawl, ensuring planned and guided development.
- Protect natural systems and resources, prohibiting risky development locations.

- Promote mixed-use, compact urban areas for efficient space utilisation.
- Use compatible land use zones, incorporating Water-Sensitive Urban Design (WSUD) principles.
- Include ample public green spaces and water retention sites.
- Implement restricted development zones to protect areas like forests, riverbanks, and natural drainage paths.
- Develop green-blue corridors, preserving natural environmental features.
- Ensure participatory planning, involving community members, government officials, property owners, developers, and investors.

6. Main Activities (Tasks and Timeline)

The tasks and steps required are based on the official Lao Urban Planning Manual in **PART C, page 16- 45**, which outlines the detailed steps and associated activities; these are abbreviated here for practical purposes. (See Annex for a detailed version of step activities).

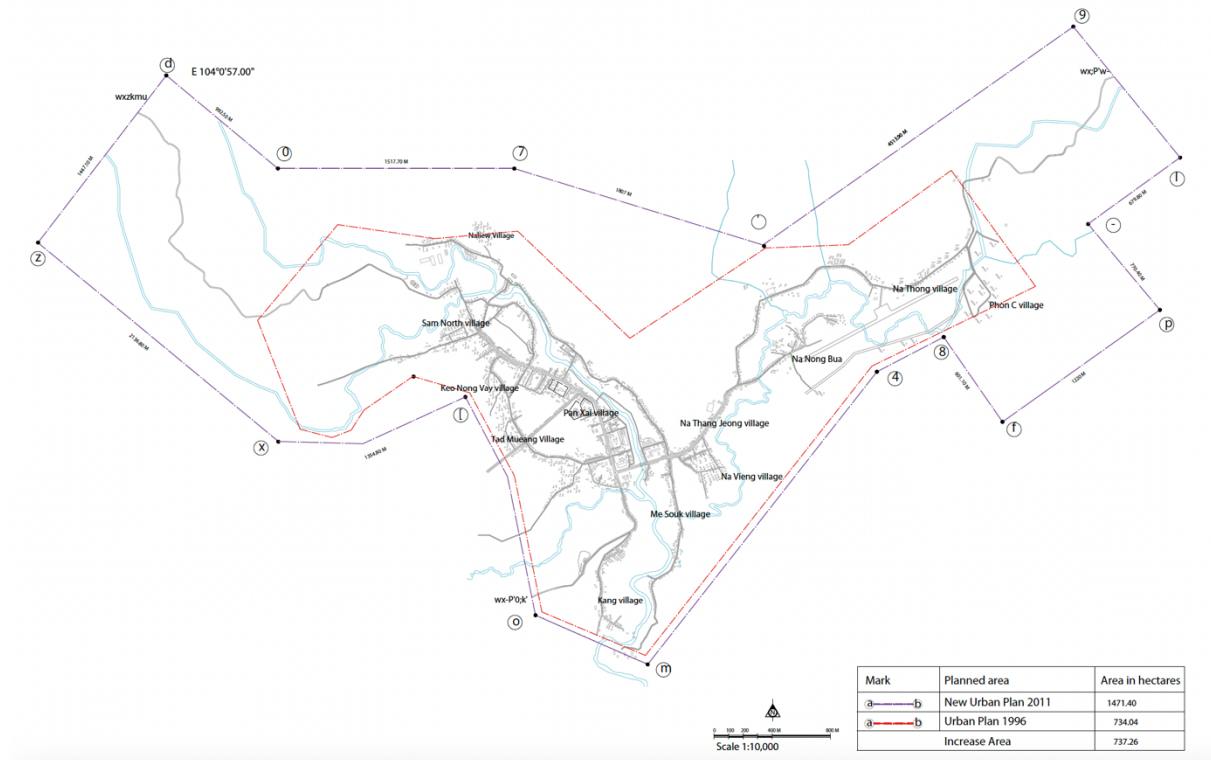
Most of the specific water-sensitive planning activities/ requirements will follow and adapt to the existing official tasks outlined in the Manual, with key additional “steps” integrated into the sequence where seen necessary.

Tasks (Lao PDR Urban Planning Manual, PART C, Pages 16- 45)	Steps (Required in Lao Urban Planning Manual with adaptations for Water-Sensitive Approach)	Months
1. Identify the Scope of Urban Planning	<ol style="list-style-type: none"> 1. Gather/ Prepare Existing Urban Master Plan; Relevant Plans, Maps, Reports 2. Preliminary Area Survey and Mapping (include “Areas at Risk of Disaster” Flooding/ Landslides/Drought) 3. Stakeholder Engagement/ Consultations 4. Contract Finalization / Signing 5. Administrative Completion 	3
2. Baseline Study: Collect Required Data	<ol style="list-style-type: none"> 1. Schedule and Budget Preparation 2. Prepare GIS Base Maps 3. Inform DPWT/ Gain Approval for Topographic and Field Surveys 4. Initial DPWT Meeting on Surveys 5. Undertake Topographic Survey 6. DPWT Post-Survey Meeting/ Agreement 7. Topographic Map and Report 8. Field Surveys and Interviews (Additional Questionnaires) 9. Hold Stakeholder Meeting 	3
3. To Draft the Urban Master Plan	<ol style="list-style-type: none"> 1. Create Database and GIS Maps 2. Analysis of Data, Trends, Impacts 3. First Draft Report Preparation 	6

	<ol style="list-style-type: none"> 4. Prepare Planning Options for Future Development 5. Local Consultations on Planning Options 6. Prepare Road Network Plan 7. Prepare Land Use Zoning Plan, based on water-sensitive planning principles 8. Elaborate Infrastructure Plans: Stormwater Drainage; Waste Water; Water Supply; Solid Waste; Green Spaces - Conservation and Recreation Areas 9. Undertake "Rapid SEA" for Plans (Strategic Environmental Assessment) 10. Project Prioritization 11. Final Report Preparation 12. Prepare Land Use Regulations 	
4. Invite stakeholders to a consultation meeting	<ol style="list-style-type: none"> 1. MPWT Consultations (pre-village meetings) 2. Pre-Administration DPWT and OPWT Meetings 3. Village Administrations Meeting 4. District Level Stakeholder Consultation 5. Pre-Provincial Meeting with DPWT 6. Provincial Level Stakeholder Consultation 	2
5. Amend draft urban plan	<ol style="list-style-type: none"> 1. Post-Consultation Discussions 2. Draft Plan Corrections 3. Provincial Stakeholder Meeting 4. Follow-Up Discussions 5. Plan Revisions 	1
6. Review draft urban plan	<ol style="list-style-type: none"> 1. Draft Plan Submission 2. Urban Plan Finalization 	1
7. Submit plan for approval	<ol style="list-style-type: none"> 1. Plan Submission to Approval Authority 	1
8. Hand over the approved urban plan	<ol style="list-style-type: none"> 1. Distribution of Approved Plan 2. Awareness Seminar 	0.5

7. Description of Area/ Development Trends

The focus urban planning area based on 2011 Urban Master Plan covers an area of 1471.40 hectares:



The proposed updated urban planning area will include full boundaries of Sam Neau Village and Naliew Village and other new boundaries deemed required to be included in the urban planning area.

Urban Development Trends

- In 2018 the population of Sam Neua Town was 18,187. This is projected to exceed 50,000 by 2045.
- Growth driven by integration into the Southeast Asian economic area and the North-Eastern Transport Corridor of the Greater Mekong Sub-region, alongside proximity to Vietnam.
- Urban Development:
 - Transformation into a provincial capital with extensive development of public infrastructure.
 - Recent constructions include administrative centers, a 200-bed hospital, hotels, guest houses, and commercial facilities.
 - Enhancement of urban infrastructure like bridges and river bank fortifications.
 - Development of a central square, a large town park, and fresh produce markets.
- Despite COVID-19 restrictions, ongoing vigorous construction activities include plans for modern hotels and a supermarket.

- Urban expansion in Sam Neua largely follows new road networks, not a strategic urban plan, leading to the significant conversion of agricultural land into building sites.
- Infrastructure development, such as water supply, drainage, and electricity, typically follows construction with a time lag.
- Building permits are frequently granted retroactively, contributing to unplanned and informal urban growth.
- The informal growth process compromises sustainable planning and development
- National Government has recognised the need for strategic urban planning to address growth and water management challenges, especially considering the potential exacerbation from climate change impacts.
- It is essential to ensure sustainable water supply and proper wastewater treatment to protect public health and mitigate water-related vulnerabilities amid land use changes.

Climate Change and Adaption Challenges and Opportunities

- Climate change exacerbates flooding risks and requires resilient infrastructure to protect against extreme weather events.
- Adaptation measures must include green spaces and permeable surfaces to enhance urban resilience and manage stormwater runoff effectively.
- The incorporation of climate-responsive building codes and urban planning standards is crucial for long-term sustainability and the well-being of the growing population.

8. Target Group/ Stakeholders

Central: MPWT, DHUP, PTI, MoNRE

Provincial: DPWT, DoNRE, DWS, DoH

District: UDAA, OPWT

Villages: Na Ban Administration, Na Ban communities,

Mass Organizations

Relevant Sectors/ Departments

Private Investors

9. Expected Results

The general expected output of the project involves the successful implementation of a comprehensive strategic water-sensitive urban planning process to achieve the overall objectives.

- Develop a viable and actionable urban master plan that aligns with Sam Neua's growth forecasts and environmental considerations.
- Execute the prescribed steps of the planning process systematically.
- Meet the specific objectives related to sustainable development, infrastructure enhancement, and regulated land use.
- Engage stakeholders effectively throughout the planning process to ensure the final plan is relatable and receives broad support, facilitating smoother implementation.
- Ensure the plan complies with existing laws and introduces necessary policy adjustments to foster sustainable urban practices and water-sensitive development.

10. Budget

BORDA Laos to provide budget details

Task	Budget Requirement LAK
1. Identify Scope of Urban Planning	XXXXXX
2. Baseline Study: Data Collection and Analysis	XXXXXX
3. Draft Urban Plan	XXXXXX
4. Stakeholder Consultation	XXXXXX
5. Amend Draft Plan	XXXXXX
6. Review Draft Plan	XXXXXX
7. Submit for Approval	XXXXXX
8. Handover Approved Plan	XXXXXX
TOTAL	XXXXXXXXXX

11. Monitoring & Evaluation

In accordance with the Lao Urban Planning Manual:

- The OPWT appoints 1-2 personnel tasked specifically with monitoring the urban plan's implementation and producing an annual progress report for the DPWT and the DHUP
- Implement regular monitoring intervals (possibly monthly) to keep track of ongoing developments and ensure they align with the urban plan's proposals and underlying assumptions.
- Use a standard monitoring report form (Checklist E.1) for annual submissions, detailing new developments, building permissions, environmental impacts, and status of conservation zones.
- Conduct evaluations of the urban plan every three to five years, analyzing monitoring data to assess if the urban developments align with the planned objectives and assumptions.
- Utilize a detailed evaluation checklist (Checklist E.3) to review the effectiveness of the urban plan and decide if revisions are necessary.
- Allow the evaluation process to inform and modify the urban plan, accommodating changes and refining strategies to better meet the town's developmental and environmental goals.

12. Risks / Challenges

- Advanced technical skills required for GIS mapping and water-sensitive planning may be lacking.
- Insufficient or outdated data on urban growth, land use, and environmental conditions could hinder accurate planning.
- Existing legal and regulatory frameworks are yet to fully support the principles of water-sensitive urban planning.
- Ensuring adherence to new planning regulations and controls, particularly in high-risk zones may present a challenge without appropriate resources and regulations.

- Local communities might resist changes due to misunderstandings or perceived threats to their current land use and lifestyles.
- Ensuring that the necessary materials and expertise are available
- Post-implementation, ensuring the adequate maintenance of infrastructure and systems developed under the plan is essential.

ANNEX 1

Detailed List of Steps and Taks

Tasks (Lao PDR Urban Planning Manual, PART C, Pages 16- 45)	Steps (Required in Lao Urban Planning Manual with adaptions for Water-Sensitive Approach)	Page # in UPM	Time/ Months
1. Identify the scope of urban planning	<ol style="list-style-type: none"> 1. Collect all necessary documents, existing plans and maps, reports to prepare for an initial survey of the project area. 2. Conduct a preliminary survey to understand and map out the area covered by the plan. (Include “areas at risk of disaster”) 3. Engage with local stakeholders through consultations to gather input and build support. 4. Finalize the contract details with the overseeing administrative body. 5. Sign the project and contract proposals to formalize the agreements. 6. Complete administrative actions as listed in Checklist C.1, detailed in the Annex. 	16-20	3
2. To collect data	<ol style="list-style-type: none"> 1. Prepare a work schedule and budget for each survey team 2. Prepare base maps based on GIS software Checklist C.2 3. Inform DPWT before undertaking field surveys Checklist C.3 4. Meeting with DPWT for initial discussions Checklist C.4 5. Undertake a topographic survey including list of required features and Water-sensitive planning features (8) Checklist C.5 6. Meeting with DPWT at the end of the topographic survey 7. Prepare topographic map and report of survey 8. Undertake other field surveys and interviews: Questionnaires in Annex - update questionnaires to include WSP elements 	21-27	3

	9. Meeting with Stakeholders before leaving area		
3. To draft the urban plan	<ol style="list-style-type: none"> 1. Build up database and prepare maps and plans using GIS software 2. Analyse survey data from various sources including trend analyses 3. Begin to prepare the first draft report 4. Prepare planning options for future development 5. Consultations on the planning options 6. Prepare a plan of proposed drainage and solid waste management systems 7. Prepare a plan for the proposed road network and identify a hierarchy 8. Prepare Risk Area Maps for flooding and landslides 9. Prepare a proposed land use plan 10. Identify the priority projects on a plan 11. Prepare the final report of the existing situation, trends and proposals 12. Prepare regulations governing the use of land 	28-37	4
4. Invite stakeholders to a consultation meeting	<ol style="list-style-type: none"> 1. Consultations with MPWT 2. Meet DPWT and OPWT before approaching the village administrations 3. Hold a meeting of village administrations in the area covered by the urban plan 4. Hold a consultation meeting with relevant stakeholders at the district level 5. Meet DPWT again before the consultation meeting at the provincial level 6. Hold a consultation meeting with relevant stakeholders at the provincial level 	38-41	1
5. Amend draft urban plan	<ol style="list-style-type: none"> 1. Discussions following the consultation meeting 2. Correct any errors of fact and amend the draft urban plan 	42	1

	<ul style="list-style-type: none"> 3. Hold another consultation meeting with relevant stakeholders at the provincial level 4. Hold discussions following the latest consultation meeting 5. Correct any errors of fact and amend the draft urban plan 		
6. Review draft urban plan	<ul style="list-style-type: none"> 1. Submit the draft urban plan to MPWT (DHUP) for review 2. Finalise the urban plan for a level 1 and 2 town 	43	1
7. Submit plan for approval	<ul style="list-style-type: none"> 1. Submit the draft plan to the approval authority 	44	1
8. Hand over the approved urban plan	<ul style="list-style-type: none"> 1. Submit copies of the approved plan to the local administration 2. Hold a seminar to raise awareness of the approved plan 	45	0.5

ANNEX 2

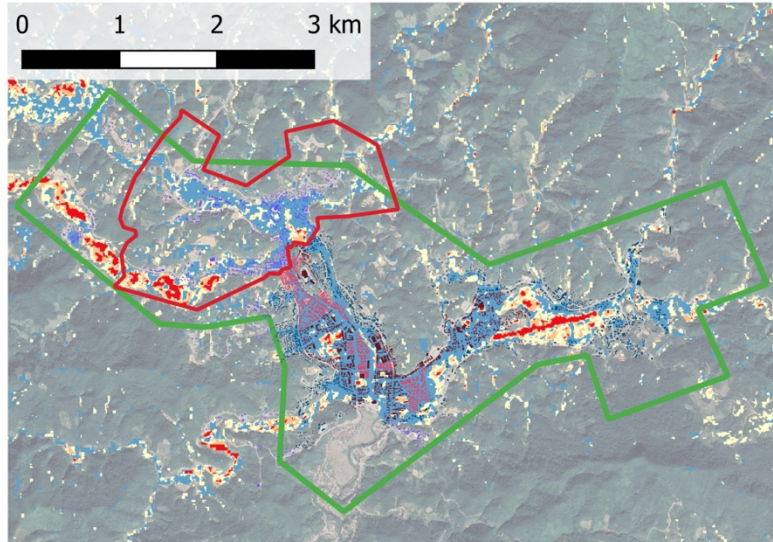
To be completed: I will link to the text in the main section more firmly:

TASK 1 STEP 2

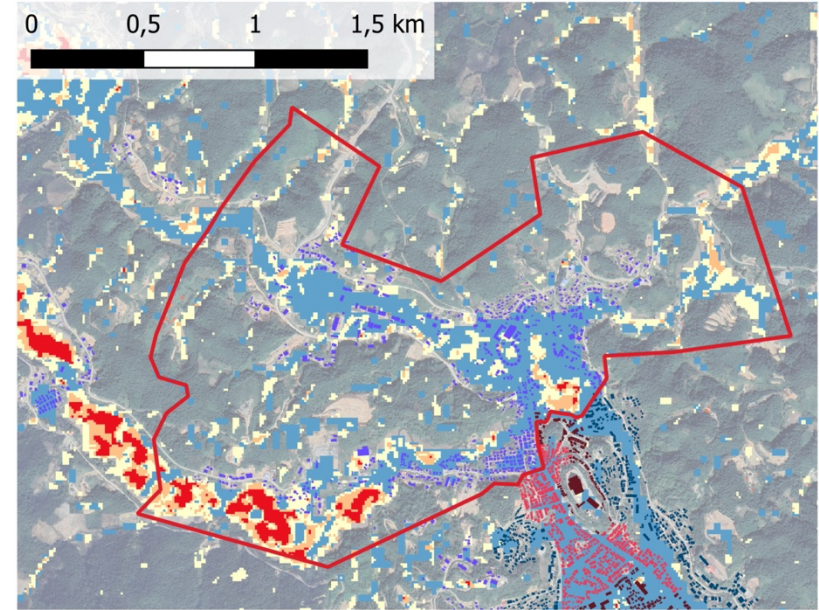
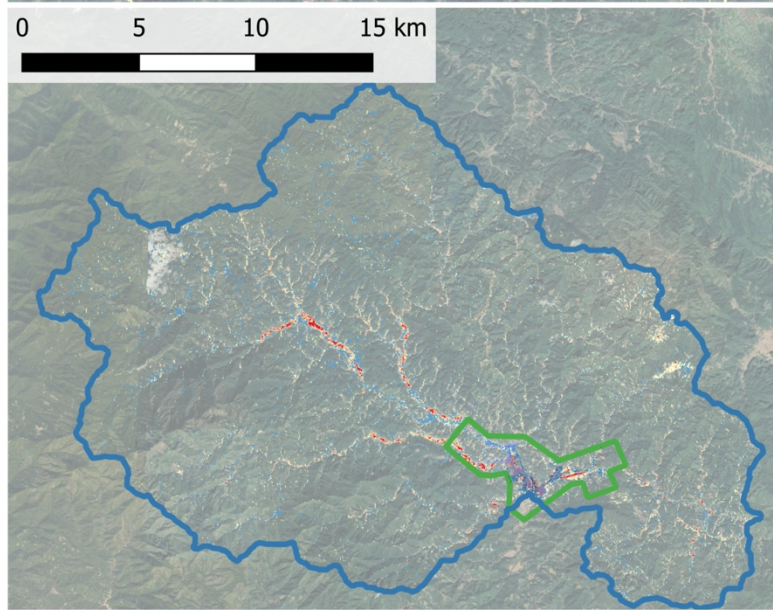
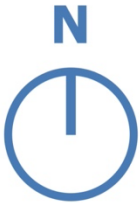
The following examples of hazard maps required under Tasks 1 Step 2, which are crucial for the planning and decision-making processes involved in drafting a water-sensitive land use plan for Sam Neua Town. These maps include flood-prone hazard areas, landslide hazard zones, and drought hazard regions. Each of these maps provides vital data that serve practical purposes in land-use planning and adaptation strategies. By indicating where specific activities may be most effective, they guide decisions regarding settlement areas, infrastructure development, green spaces, and riparian protection.

1. **Flood-Prone Hazard Areas:** This map identifies areas susceptible to flooding. Its data is crucial for determining where to build resilient infrastructure, designate settlement zones that are safe from flood risks, and implement flood mitigation measures such as levees or retention basins. By highlighting flood-prone zones, planners can prioritize areas for green spaces and natural water absorption projects, reducing the overall flood impact on urban and rural communities.
2. **Landslide Hazard Zones:** This map highlights areas at risk of landslides, essential for ensuring safe infrastructure and settlement planning. The data helps avoid high-risk zones for housing developments, roads, and critical infrastructure, thereby preventing potential damage and loss of life. It also informs the planning of green areas and vegetation projects that can stabilize slopes and reduce landslide risks.
3. **Drought Hazard Regions:** This map shows areas vulnerable to drought, guiding water resource management and sustainable agricultural practices. The information is vital for planning water-sensitive urban designs, such as rainwater harvesting systems and drought-resistant landscaping. It also helps identify areas where water conservation measures and alternative water sources are necessary, ensuring a reliable water supply for both human and ecological needs.

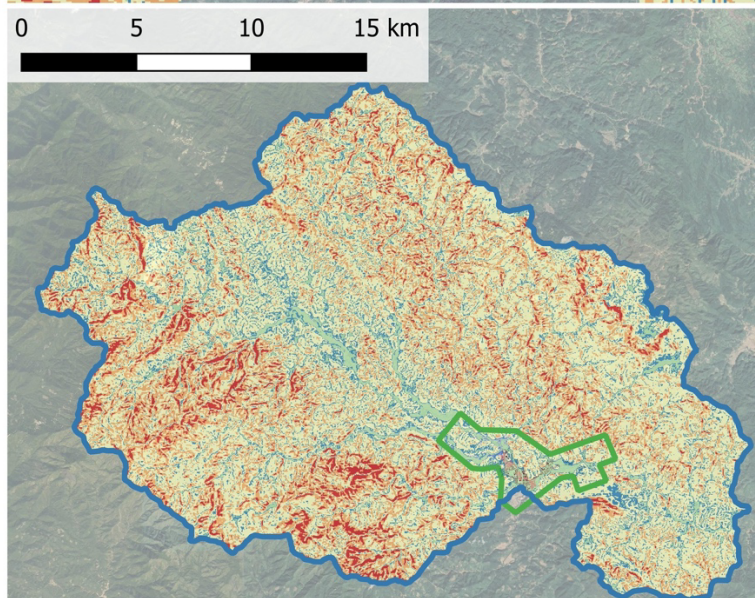
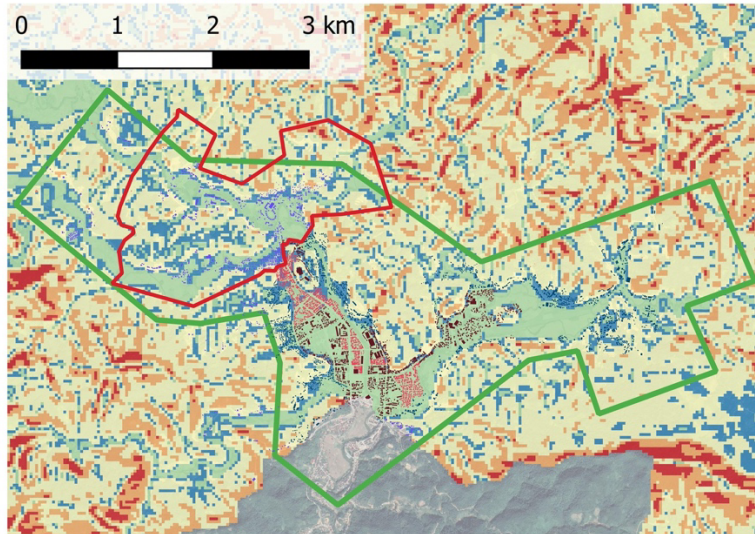
Flood hazard Sam Neua Urban Area, Nam Xam Basin & Focus villages



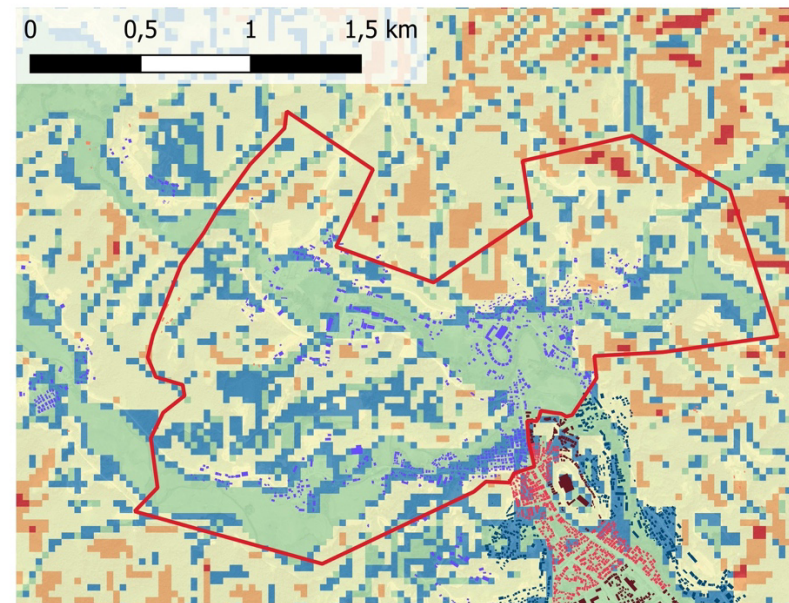
- Focus villages
 - Sam Neua Urban Area
 - Nam Xam Basin
- Sam Neua Settlement types**
- Built-up area with a high density
 - Built-up area
 - Urban extension area
 - Peri-urban area
 - Agricultural area
- Flood hazard**
- Low
 - Medium
 - High
 - Very High
- Google Satellite**



Landslide hazard Sam Neua Urban Area, Nam Xam Basin & Focus villages

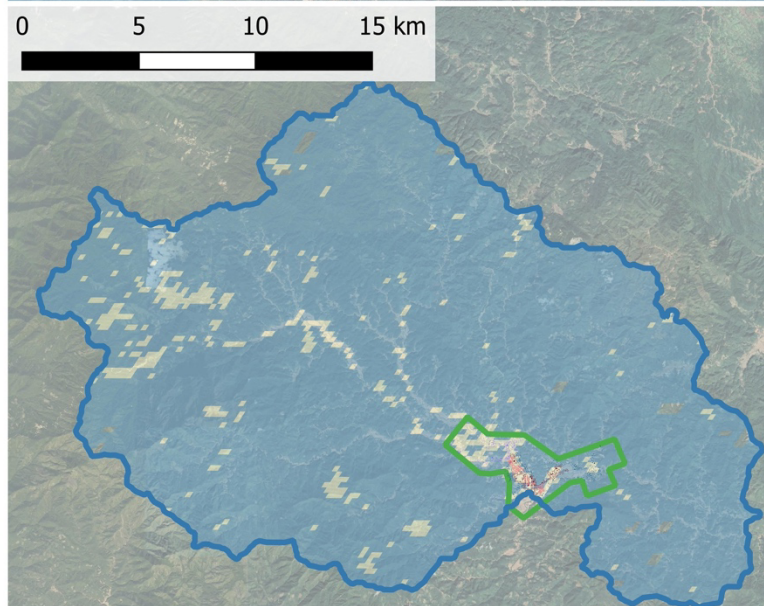
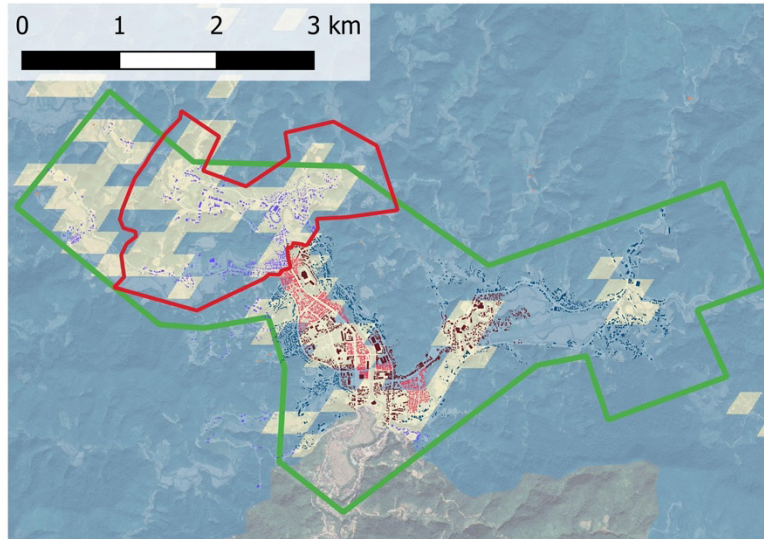


- Focus villages
 - Sam Neua Urban Area
 - Nam Xam Basin
- Sam Neua Settlement types**
- Built-up area with a high density
 - Built-up area
 - Urban extension area
 - Peri-urban area
 - Agricultural area
- Landslide hazard**
- Very High
 - High
 - Medium
 - Low
 - Very Low
- Google Satellite**

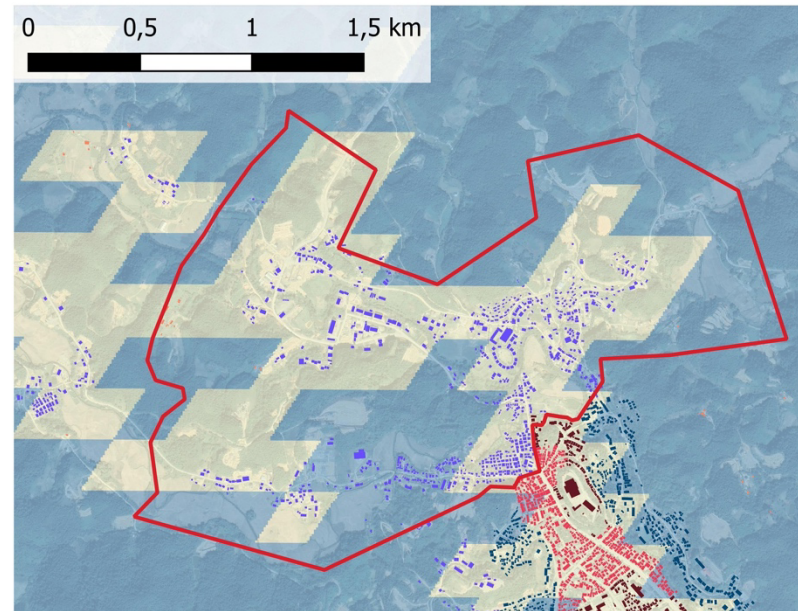


Source: ITT 2024, based on methodology of Boroumandi et al., 2014. Datasets: Hawker et al. 2023. Background: Google satellite

Drought hazard Sam Neua Urban Area, Nam Xam Basin & Focus villages



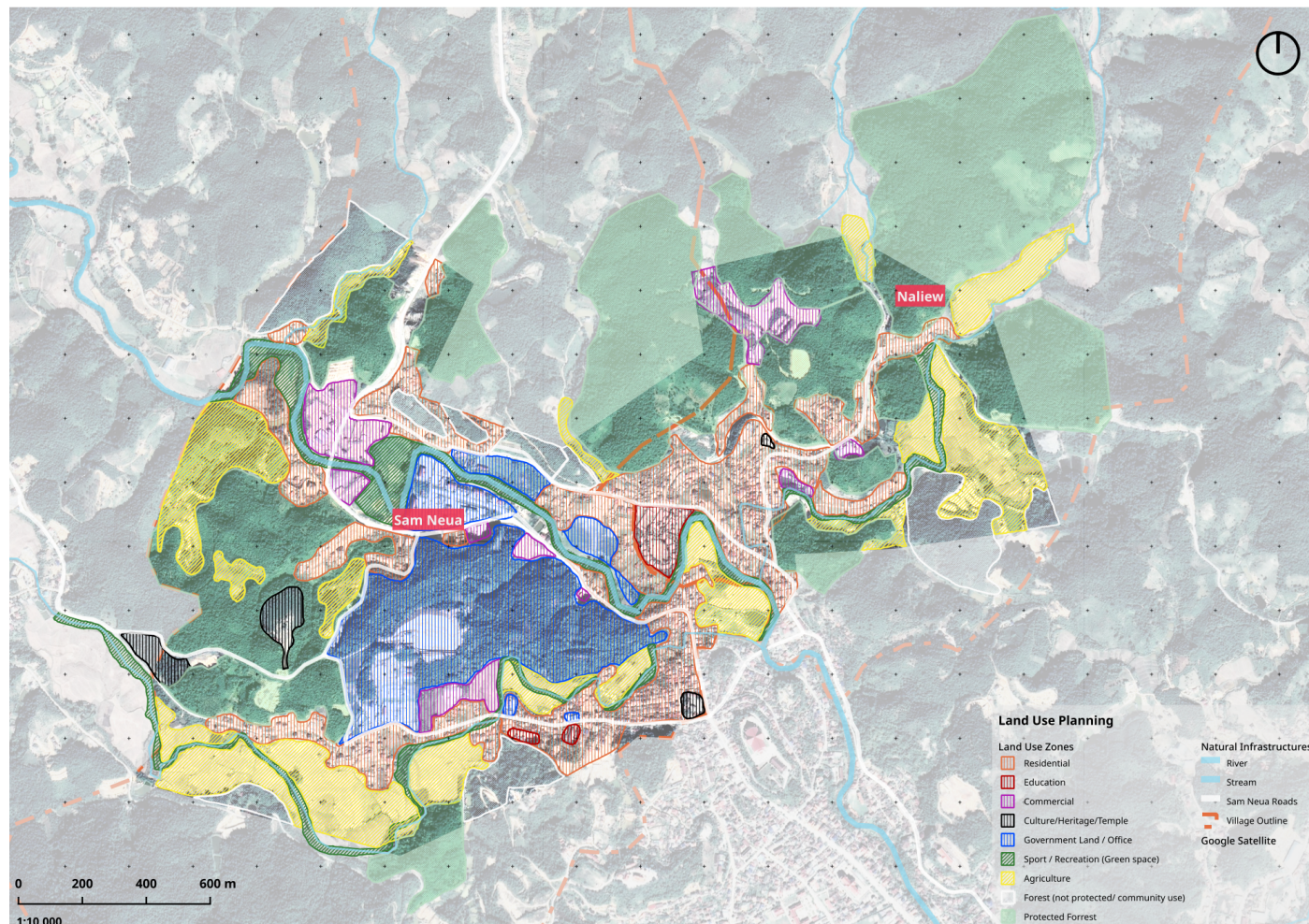
- Focus villages
 - Sam Neua Urban Area
 - Nam Xam Basin
- Sam Neua Settlement types**
- Built-up area with a high density
 - Built-up area
 - Urban extension area
 - Peri-urban area
 - Agricultural area
- Drought hazard**
- Mild Drought
 - Moderate Drought
- Google Satellite**



ANNEX 3

Example of a Draft Land Use Zoning Plan for the Urban Extension Area covering Sam Neua Village and Nailiew Village

- Initial indication of a potential land use zone map in Sam Neua Village and Nailiew Village.
- This draft was elaborated by local technical staff during capacity development activity for drafting of land use zone plan, and can be considered an initial preparatory/ non- official exercise for undertaking official planning activities.



Example Risk Area Mapping – Flood and Landslides

- Example of a Draft map shows indications of potential flooding, landslide areas and natural drainage lines in Sam Neau Village and Naliew Village,
- Based on initial participatory mapping exercises and basic open source data.

