Preserving the Natural and Cultural Heritage of the Nam Khan Watershed

Report of the 1st Knowledge Capitalization Workshop on Nam Khan Watershed, Lao PDR

PAFO office, Luang Prabang, Lao PDR
February 4-5, 2010

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Contents

General background

This workshop was the first step of the knowledge capitalization process of the Nam Khan Ecovalley programme. It was organized by Luang Prabang WREO in partnership with the Mission Val de Loire, the Region Centre (French Province) and the Institut de Recherche pour le Développement (IRD, France). The French Ministry of Foreign Affairs (MAEE) is funding this initiative through the "Fleuve à Fleuve" cooperation program. The capitalization effort should continue during the course of the year 2010 with successive thematic workshops.

The purpose of this first workshop was to introduce the overall capitalization initiative to the stakeholders, to share information about the intended process among key stakeholder, to assess the relevance of a watershed-wide perspective on resource management and knowledge integration, and to initiate the following thematic workshops.

The workshop took place at the meeting room of the Provincial Agriculture and Forestry Office on 4th and 5th of February 2010. Around 35 participants attended the workshop, including key stakeholders from technical departments of Luang Prabang province and representatives from the administration of the three districts of Phonxay, XiengNgeun and Phoukhoun district, and professors from Souphanouvong University (Luang Prabang) and the National University of Laos (Vientiane). For more details please see list of participants in Appendix 1 and agenda in Appendix 2.

Introduction

Mr. Chanthavong (WREO-LP) and Mr. Hardy (Mission Val de Loire) welcomed the participants and opened the workshop.

Introduction to the knowledge capitalization process and expectations for the first workshop

Dr. Castella (IRD) introduced the participants to the whole knowledge capitalization process: its purpose, the target beneficiaries, the method and the successive stages of the process (See presentation in Appendix 3).

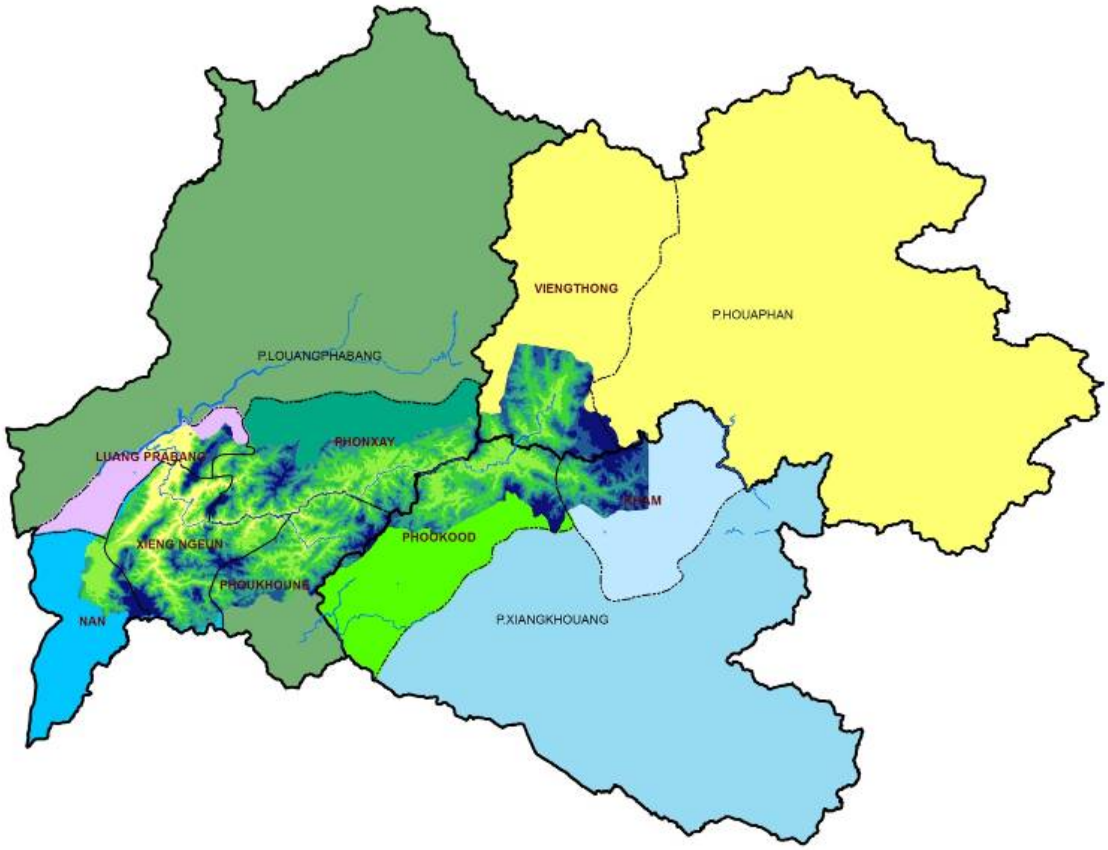
The Nam Khan Eco-valley Programme and the role of the knowledge capitalization process

Mr. Hardy presented the context of this initiative in term of past, present and future projects implemented within the framework of the Nam Khan Eco-valley programme (See presentation in Appendix 4). The "Mission Val de Loire contributes to the Nam Khan Eco valley programme through the "Fleuve à Fleuve" cooperation program known as Loire-Niger-Mekong project. The Loire-Niger-Mekong project promotes sustainable management of river corridor. Its main components are:

- Institutional support
- Surveys and techniques implementation
- Knowledge diffusion and experience sharing

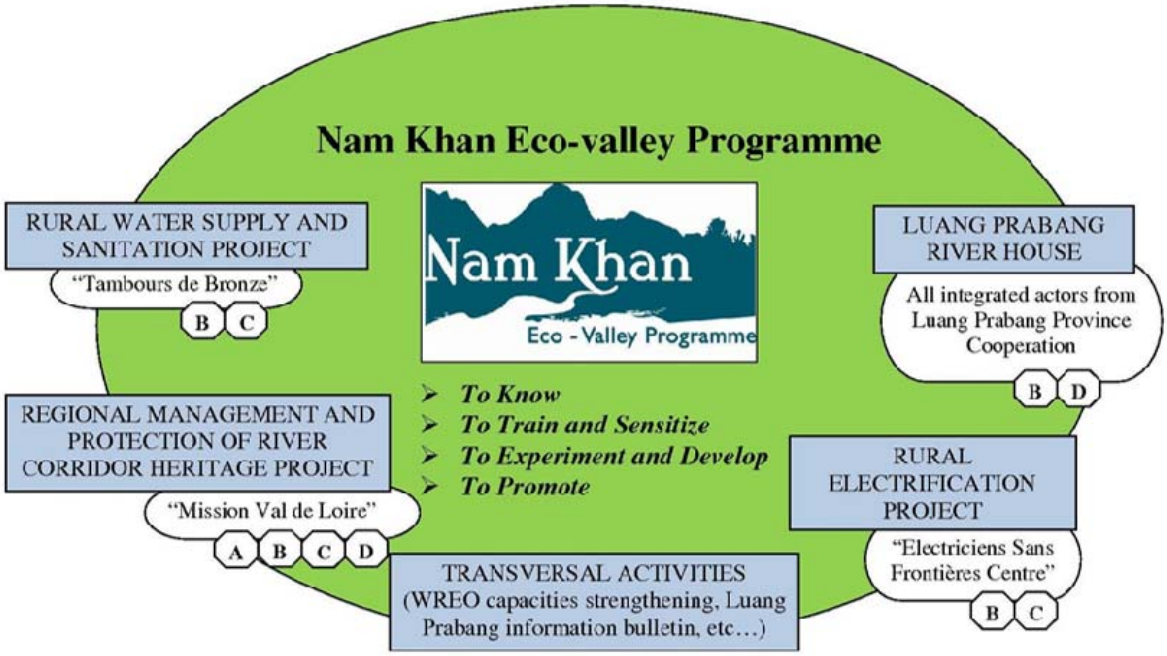
Mr. Vontobel introduced to the participants the current activities of the Eco-Valley Programme.

Map of the Nam Khan Watershed



Nam Khan Eco-valley Programme flowchart

To Know (A) To Train and Sensitize (B) To Experiment and Develop (C) To Promote (D)



The Nam Khan area: a diversity of natures and cultures

This presentation by Dr. Castella focused on characterization of the diversity of natural and human environments in the Nam Khan watershed (Appendix 5). From its source in Nam-et Phou Loei Natural Protected Area to its confluence with the Mekong in Luang Prabang, The Nam Khan watershed is a whole entity shared by communities. Based on existing knowledge such as maps produced by the CDE (Centre for Development and Environment – Switzerland project based at WREA in Vientiane) and the Eco-valley programme the presentation displays the geography of the watershed and its recent evolution. The Nam Khan watershed is balanced between two poles, a rapidly developing economy around Luang Prabang city, and a conservation area in NPA. Between these two extremities, we see a remote area with a poor accessibility.

Dr. Castella also presented the observed biodiversity along the Nam Khan river and the different zones that can be delineated in terms of land cover, biodiversity conservation, accessibility, forest production, land concessions.

This presentation initiated a plenary discussion about how to reduce the complexity of the overall picture by prioritizing specific conservation & development (C&D) issues at the watershed scale and delineating zones/contexts that are homogeneous in term of C&D issues.

Group discussion "Identifying zones in NK watershed that are homogenous in terms of conservation & development issues"

The purpose of this first exercise was to delineate zones where to prioritize actions for conservation and development.

The exercise showed that the watershed was not considered as a management entity by all participants. The upstream / downstream relations along the river are known but they are managed at lower administrative level such as district and province.

In addition the knowledge and the perception of the different issues are determined by the geographic area people are in charge of. For instance people in one district have no ideas on what is the situation in another district.

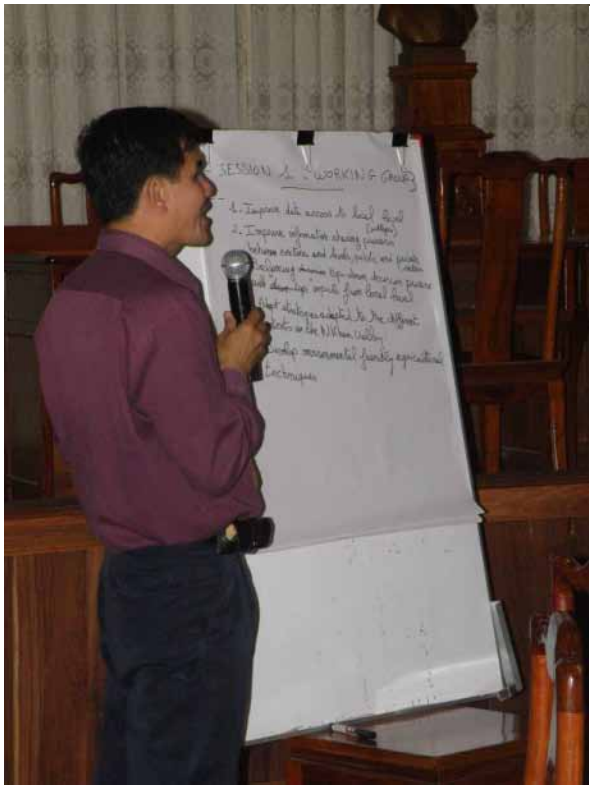
As a consequence, priorities, projects and issues relevant to the entire watershed were discussed only at district level. Moreover, participants from the provincial technical departments and districts were not comfortable with locating different sites on the maps. They systematically listed the villages concerned by topics they were addressing but were reluctant to use the maps.

Summary of group discussions:

Group1: Only Luang Prabang Province is represented during this workshop, so incomplete information about the Nam Khan watershed. There are 3 protected areas in Phoukhoun District for ground water preservation, forest conservation. Only degraded forest is allowed for cropping. PAFO is doing survey and developing land use plans. Phoukhoun and Phonxai plan to work together on shared management of their boundary areas. Hydropower dams are important elements for the future zoning: MoU signed, feasibility study for hydro dam in Ban Sapheung (145 Mw), Ban Kengkoung (95 Mw) and in Ban Namsanan (5Mw), and initial survey on the Nam Ming river, tributary of the Nam Khan.

Group2: Sinohydro has conducted a number of feasibility studies for Nam Khan 1, 2 and 3 dams. Nam Khan 1 project was too close to the heritage area of Luang Prabang and the project has been rejected by the provincial authorities. Other power supply systems are proposed in remote areas such as solar panels (with support from an ADB loan) and turbine systems to produce electricity in connection with the clean water adduction system.

Group3: 1- Improve data access to local level (Village)
2- Improve information sharing process between sectors and levels, public and private sectors
3- Balancing top-down decision process with inputs from local level
4- Adopt strategies adapted to the different context in the Nam Khan valley
5- Develop environmental friendly agriculture techniques



Who is doing what, where, in the Nam Khan area

Following the plenary presentation of the three groups, Mr. Ferrand presented an overview of past, on-going and future project or studies implemented on Nam Khan watershed (see presentation in Appendix 6). The purpose of this presentation was to raise the awareness of the participants on the significant amount of data collected over the recent period and information available. A leaflet was distributed to all participants that summarized the 18 studies conducted since 2005 by the Eco-valley Program (Appendix 7). Then a second objectives was to explore the pathways from knowledge accumulation to knowledge capitalization at the watershed scale to inform policy makers.

The presentation pointed out:

- the different nature of the projects: research, development, investment, etc.
- their geographical extent, their thematic and the different parties involved,
- the thematic and geographic overlaps knowledge gaps and complementarities

It located target sites of the projects on thematic maps.

The spatially explicit representation of the Eco-valley programme activities could then be linked with the knowledge generated on the Nam Khan area in relation with biodiversity, hydrology and fishery, land use changes and ecotourism. The presentation showed that projects target mainly the upstream and downstream area. The middle part of the Nam Khan watershed is less studied due to its poor accessibility.

The presentation also showed a lack of coordination between the projects which are active in the same area.
Subsequently, the participants were asked to discuss in small group on the issues raised by the presentation and more particularly:

- Which area to focus in priority?
- Which thematic or knowledge should be now studied?
- Which cooperation could be developed among projects?
- Identify knowledge gaps in relation with upcoming studies or projects.

Group discussion "list the new project, prioritize geographical areas and topic to address"

Group 1:

Are there any studies or project we did not mention?

- On going project in Phonxai district:
  Sida and EU: legume for livestock
  GPAR, completed
  Cesvi (food security, fund by australia), world vision (poverty eradication),
- On going project in Phoukhoun district
  ADB: livelihood promotion in northern Laos
  EU: livestock
  Worlvision: medecine for livestock

Which priority areas?

- In Phoukhoun: 41 villages are accessible by road. As a consequence of the relocation programme, the size of the village increase and it makes their management more complex,
- 9 villages in Phonxai do not have any project because of their poor accessibility.

Which thematic or knowledge should be now studied?

- Agriculture is a priority
- Find funds to develop sanitation, health, education sector

Which cooperation/coordination could be developed/reinforced?

- Improve project management
- Avoid project overlaps and improve the coordination between the departments.
- Constrain project to register to the Department of planning and investment

- Advertise regulation to manage relation between upstream and downstream communities.
- Improve the information and knowledge diffusion
- Develop specific committee which gather WREO, PAFO, Land Management (NLMA).

Group 2:

Phonxay district and boundary of Phoukhoun district

ADB: Supply Solar equipment for schools
Lao Red Cross: Water supplies
CESVI: Road improvement. Latrines and water supply
EU: Health improvement programme (health centre), Small-scale irrigation project, rural electrification,
SIDA: Rural roads improvement, credit for purchasing livestock
URDP/TABI: Land allocation
WorldVision: Education, health, small-scale irrigation, livestock

Xiengngeun district

Shiro hydro Co: Hydropower dam NK2, NK3
Mungkhom Co: Hydropower dam on Nam saname (<5MKW)
DHL: moving Electricity 3KW to Ban Katang
Tambours de Bronze

Group 3:

Which areas to focus on priority?

1. Focus areas from development perspective:

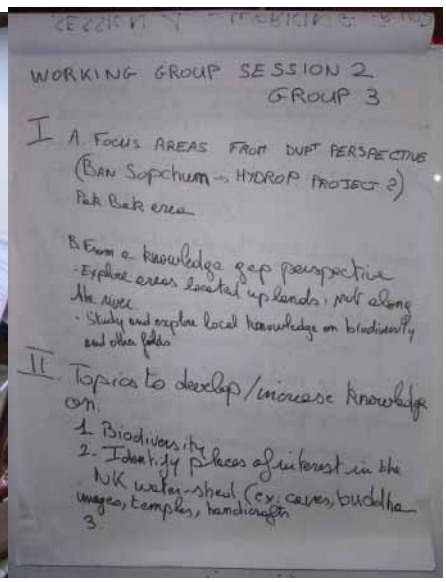
Ban Sopchun, Hydropower dam NK2, Pak Bak area

2. Focus areas from knowledge gap perspective

Explore uplands areas not along the river, study and explore local knowledge and biodiversity and other fields

Which field of knowledge to develop next?

1. Biodiversity
2. Identify place of interest in the Nam Khan watershed such as caves, Buddha images, temples.
3. Improve the trade of local products such as handicraft, livestock, NTFP.
4. Update the village location and their accessibility
5. Promote local fish species farming
6. Ensure the maintenance of equipment and infrastructure after project completion.



What are the issues to be tackled in priority in the Nam Khan watershed?

Mr. Sommali Khamkeng, Deputy governor of Phoukhoun district

He introduced the district strategy and its priorities:

- Village relocation and people resettlement

Livelihoods of rural population depends on natural resources. and. Land use planning and land allocation plan is aimed to protect the forest while promoting sustainable agriculture and permanent jobs.

- Infrastructure development

Road must be developed to improve the access to schools, health centre and market which can generate income for the population.

- Agriculture promotion

The main issue is for the farmer to be trained to new technique.

Mr. Pengkhammavong, Deputy governor of XiengNgeun district

He introduced the district strategy and priorities:

- Develop sustainable agriculture in a stepwise manner: short term - develop vegetable production and gardens, then annual commercial crops such as jobs' tears and maize, and in the longer term perennial crops and plantations such as teak and rubber.
- Develop road network to improve the access to water and electricity. A better road network would benefit to ecotourism to reach touristic places such as Tad Se or the Nam Ming river.
- New technologies should be introduced such as SRI: System of Rice Intensification.

Mr. Khamphoud, Governor of Phonxay district

In introduction he said Phonxay district is one of the poorest of the province.

District's development priorities are:

- Infrastructure development because the district has many remote areas no road linking to other districts. Plan to link the district to neighbouring provinces: Houaphan and Xiengkhouang.
- Human resource development. The purpose is to train people in order for them to get permanent job. Healthcare improvement is another priority.
- Village relocation to merge the small villages and stop slash&burn cultivation.

The district has to identify production, regrowth, and conservation forest areas and implement land use planning and land allocation.

Mr. Saygnaphan, Deputy director of PAFO (Provincial Administration Forest Office) Luang Prabang

He agreed with the priorities of the three districts. Actually they follow the government policy. From PAFO perspective, the priorities are:

- Ensure food security
- Increase cash income
- Stop slash&burn cultivation
- Manage production, regrowth, and conservation forest

Forests are important in Nam Khan watershed. Currently forest represents 21% of the province surface. The national policy is to reach 70% of forest cover by plantation and conservation policies. Forest would be preserved if people can get permanent job. They would rely less on forest for their livelihood and therefore would not damage forests.

Mr. Chanthone, Deputy director of Nampapa Luang Prabang

He is very concerned about the Nam Khan watershed management. He pointed out environmental issues such as gravel and sand exploitation in the Nam Khan river which damages the river banks and affects the river flow. Another point is the mountain destruction for stone exploitation which leads to soil erosion and affects water quality.

To develop the Nam Khan watershed, he suggested getting budget for land allocation and fund to train people to get permanent jobs.

Mr. Misaikhon, Deputy director of department of mine and energy

The Dpt of mine use to cooperate with XiengNgeun district to develop solar power in remote villages.
The policy is to provide electricity to 90% of the population by 2020.
They are currently studying small waterfall potential in the three districts.

Mrs. Siliphon Souphanthong, Deputy director of department of planning and investment

She agreed with Nampapa representative on the need for regulation of the river sand and gravel exploitation. The impact on water quality has not been assessed so far.

- The preservation of the environment, especially biodiversity, is a key issue. The source of the Nam Khan river is in Houa Phan province, meaning the watershed area has to be considered through improved coordination between upstream and downstream areas.
- Population resettlement and getting permanent job are issues to be tackled to develop the area and release the pressure on forests. Resettlement will move population closer to market opportunities.
- Good products with market potential must be identified. People should be encouraged to sell the local products. But then, market demand is very important to consider.

Mr. Khamfeua Phalivanh, Deputy director of department of health

The department supports activities such as latrines and health centre construction, and improvement of water access.

- The accessibility is the main problem. People in remote areas cannot get access to health centre. (5-6 hours walking in some cases)
- The water access has been improved by programs implemented by NGO or International organizations. There is a plan to improve the water quality. He would like the district to take more actions to prevent clean water shortage.
- Environmental protection is a key factor of water quality. The ground water resource is linked with forest preservation.
- Wastes of latrines are an issue especially to prevent river contamination. There is a lack of latrines management. Raising awareness of communities on hygiene issues has to become a priority. Funds are needed

Mr. Chanthavong Phonnachit, Director of WREO

After successive presentations by district and provincial departments representatives of their respective priorities and strategies, Mr. Chantavong did a synthesis of all interventions. Three priorities came out of the discussions:

- Population movements and resettlements
- Creating permanent jobs and stable livelihoods (less dependent on nature such as shifting cultivation systems). Requires improved skills (capacity building), improved technologies, access to credit and improved marketing networks (secured outlets).
- Infrastructure development (roads) in relation with access to market and services.

These three topics did frame the subsequent discussions of the three workgroups.

Group discussions: towards a management plan to tackle the priority issues in the Nam Khan watershed?

Group 1: Resettlement and village relocation

What are the main reasons to relocate villages?

- In Phoukhoun district: First the relocation programme follows the national decree n°9. It is difficult to develop remote and small villages. The relocation improves the accessibility to infrastructure and to job opportunities. It also increases the size of the villages up to a relevant size for development. Besides the relocation aims at preserving the forest.
- In Phoukhoun district, three villages shall move: Phoutatse move to Tongsata, Kiouyouak move to Phouyang, Phavai move to Chin.
- In Phonxay district: Standard village must count at least one hundred households. If the village is smaller, it can be relocated.

What are the issues arising after relocation?

- Many villagers still wish to go back to their previous land.
- Land use planning & allocation must be done again to accommodate newcomers,
- Newcomers do not find new jobs or productive land in their new village. Therefore they keep their former job (farmer) and go back to farm their former land. But this impose long walks every day between their principal house and their fields which mean they lose time and money.

Group 2: Permanent job development in relation with market opportunities

The group pointed out the interrelations between different issues to be tacked that justify to develop a systems approach/understanding and integrated management. The four aspects to be developed towards more permanent job and reduced reliance on forest resources are:

- Livestock development (cattle and buffaloes)
- Improved cropping systems and domestication of NTFP. Requires to secure market outlet through contract farming with companies, better information of traders at district and provincial levels.
- Fisheries monitoring to adapt management to the existing resources and to produce fish via aquaculture techniques.
- Tourism has a high potential that has not been fully explored yet, especially in relation with local production such as handicrafts. Some year ago there were villages around Luang Prabang that were specialized in different handicrafts (e.g. pottery, brickworks, basketworks, blacksmith, weaving). Handicraft villages would attract more tourists.

Actions to be taken:

- Improve the quality of local products, and strengthen production capability,
- Improve understanding of contract and relation between local producers and companies which buy these products,
- Build a training centre for enginery in the target district and in the kumban phathana.

Group 3: Infrastructure development

1. Extend road network between village clusters to improve accessibility (especially between Houay Hia and Pak Bak village clusters)
2. Build bridge over Nam Khan river around Pak Bak
3. Improve water supply in villages (Kioukacham cluster)
4. Improve management capacity of water supply systems in villages
5. Improve protection of water sources
6. Extend and improve existing water supply systems in growing villages

From knowledge integration to integrated management of natural resources (experiences from Regional Park in France)

Mr. Delaunay from the Regional Park Loire-Anjou-Tourraine did present the experience of his Park in term of biodiversity management and ecotourism.

Main conclusions and perspectives (from debriefing session with workshop organizers)

The initial goals of the workshop were only partially reached for several reasons:

1. Most of the participants from technical departments and district were not really used to work with maps and had not considered so far the watershed as a management entity. Therefore, they systematically came back to their geographic units of management: village, kumban and district, and to their official messages and strategies, not considering the evidences that were presented at higher geographical levels. A notable exception were the scholars from the universities who understood very well the objectives and tried their best to explain to other participants (policy makers) the knowledge capitalization perspective of the project.

   It will be important for next thematic workshops to invite Lao people with an academic background and/or working with international organizations so as to get complex messages to reach policy makers and facilitate coordination among them. They could play the role of knowledge brokers.

2. Only representatives from Luang Prabang province were invited to the first workshop. As a consequence, many important issues that were raised during the workshop, such as the relation between the upper and lower parts of the watershed, natural resource conservation in the sources of the Nam Khan and how it benefits other stakeholders across the watershed, could not be discussed with representatives of Hua Phan and Xieng Khouang provinces who are in charge of the upper part of the watershed.

However, we could get very positive feedback from all participants who agreed that this first workshop did sensitize them to the issues relevant to the Nam Khan watershed. They are willing to pursue this effort of knowledge capitalization and information exchanges with the support of WREO. They consider this workshop as a first step in a long process of capacity building and institutional building towards effective integrated watershed management.

Knowledge capitalization workshop

PAFO office, Luang Prabang province, Lao PDR
February 4-5, 2010

Appendix 1: List of participants

No.	Name	Organization	Position	Location
1	Mr. Saveuy Sisavanh	Dpt of Heritage	Deputy Director	Luang Prabang
2	Mr. Soulivanh Chandakham	Dpt of Mine and Energy	Director	Luang Prabang
3	Mr. Mixayphon Vilayhong	Dpt of Mine and Energy	Director	Luang Prabang
4	Mr. Bounmi Saygnasing	Dpt of Mine and Energy	Geologist	Luang Prabang
5	Mrs. Siliphon Souphanthong	Dpt of planning		Luang Prabang
6	Mr. Chanpheng	Irrigation	Engineer	Luang Prabang
7	Mr. Soukanh	ITD	Engineer	Luang Prabang
8	Mr. Houmpheng	Nam khan Eco-valley	Coordinator	Luang Prabang
9	Mr. Arnaud Vontobel	Nam khan Eco-valley	Technical adviser	Luang Prabang
10	Mr. Antoine Borius	Nam khan Eco-valley	Technical adviser	Luang Prabang
11	Mr. Chanthone	Nampapa	Deputy Director	Luang Prabang
12	Mr. Bounpheng Pheunglan	PAFO	Deputy director	Luang Prabang
13	Mr. Saygnaphan	PAFO	Deputy Director	Luang Prabang
14	Mr. Khamfeua Phalivanh	Prov. Dpt of water sanitation	Deputy director	Luang Prabang
15	Mr. Sianouvong Sawatvong	Souphanouvong University	Vice rector	Luang Prabang
16	Mr. Chanthavong Phonnachit	WREO-LP	Director	Luang Prabang
17	Mr. Aloun Manosane	WREO-LP	Staff	Luang Prabang
18	Mr. Guillaume Delaunay	PNR Anjou Touraine	Nature manager	Montsoreau
19	Mr. Sichanlith Saphi	Phonxay District	Deputy governor	Phonxay
20	Mr. Khamphoud	Phonxay District	Governor	Phonxay
21	Mr. Sichan Latsamy	Phonxay District	Deputy governor	Phonxay
22	Mr. Houmpheng	Phoukhoun District	Governor	Phoukhoun
23	Mr. Sommali Khamkeng	Phoukhoun District	Deputy governor	Phoukhoun
24	Mr. Simon Hardy	Mission Val de Loire	Programme officer	Tours
25	Mr. Matthieu Chatenet	Argonaut	Geographer	Vientiane
26	Dr. Andreas Heinimann	CDE - University of Bern	Researcher geography	Vientiane
27	Mr. Jeremy Bourgoin	CIFOR-IRD-NAFRI	Geographer (student)	Vientiane
28	Ms. Marie Guemas	IRD - Aix University	Anthropologist (student)	Vientiane
29	Dr. Jean-Christophe Castella	IRD-CIFOR	Agro-geographer	Vientiane
30	Mr. Jeremy Ferrand	Terran GIS	Geographer	Vientiane
31	Dr. Silinthon Saklorkham	University of Laos	Prof. agroeconomics	Vientiane
32	Mr. Vansingh Manivanh	CIFOR Laos	Program assistant	Vientiane
33	Mr. Phengkhammavong	Xieng Ngeun District	Deputy governor	Xieng Ngeun
34	Mr. Phetdason Souliya	Xieng Ngeun District	Deputy governor	Xieng Ngeun

Nam Khan
Eco - Valley Programme

Knowledge capitalization workshop

PAFO office, Luang Prabang province, Lao PDR
February 4-5, 2010

Appendix 2: Agenda of the workshop

Day 1, February 4th, 2010

Time	Topic	Presenter
08:00 - 08:30	Registration	Administration
08:30 - 08:40	Welcome and workshop opening	Mr. Chanthavong director of WREO-LP
08:40 - 09:00	Introduction to the knowledge capitalization process	Dr. Castella, IRD
09:00 - 09:20	Presentation of the cooperation between the Region Centre and Luang Prabang Province	Mr. Hardy, Mission Val de Loire
09:20 - 09:40	Presentation of Eco-valley Program	Mr. Vontobel - Eco-valley program
09:40 – 10:00	Coffee break and group photo	
10:00 - 11:15	Presentation “The Nam Khan area: a diversity of natures and cultures”	Dr. Castella
11:15 – 12:00	Group discussion “Identify zones in NK watershed that are homogenous in terms of conservation & development issues”	Group 1: Mr. Ferrand, Terran GIS Group 2: Dr. Castella Group 3: Mr. Vontobel / Dr. Heinimann
12:00 – 13:00	Lunch	
13:00 – 14:00	Plenary presentation of the 3 workgroups	Group 1: Mr. Ferrand Group 2: Mr. Khamfeua Group 3: Mr. Sianouvong
14:00 – 15:00	Presentation - discussion “Who is doing what where in the Nam Khan area”	Mr. Ferrand
15:00 – 15:30	Coffee break	
15:30 – 16:15	Group discussion “List the new project, prioritize geographical areas and topic to support”	Group 1: Mr. Vontobel Group 2: Dr. Castella Group 3: Mr. Ferrand
16:15 – 16:45	Plenary presentation of the 3 workgroups	Group 1: Dr. Silinthone Group 2: Mr. Vansingh Group 3: Mr. Ferrand
16:45 – 17:30	General discussion: • Prospects for improved coordination? • Effectiveness and relevance of a watershed-scale approach of conservation – development issues.	Dr. Castella

Day 2: February 5th, 2010

Time	Topic	Presenter
08:30 - 08:45	Summary of 1st day and introduction to the programme of the morning	Dr. Castella
08:45 - 09:45	Plenary discussion What are the crucial issues to be tackled in priority?	All participants
09:45 - 10:00	Summary of the plenary discussion and presentation of the following group discussion	Dr. Castella
10:00 - 10:45	Group discussion on the 3 topics: infrastructure development, permanent job opportunities, resettlement issues	All participants
10:45 – 11:00	Coffee break	
11:00 - 11:30	Plenary presentation of the 3 workgroups	Group 1: Mr. Sommali Group 2: Mr. Phengkhammavong Group 3: Mr. Sianouvong
11:30 – 12:30	Presentation: “Experience of a Regional Park in France”	Mr. Delaunay
12:30 – 12:35	Closing remark	Mr. Chanthavong

Appendix 3

Nam Khan
Eco - Valley Programme

Preserving the Natural and Cultural Heritage of the Nam Khan Watershed

Introduction to the knowledge capitalization process

Nam Khan Knowledge Capitalization

04/02/2010

Why capitalizing knowledge

Since 2005 the Eco-Valley Programme has:

- documented the natural and human environment of the Nam Khan valley,
- described the dynamics of this complex socio-ecological system.

Several thematic studies were implemented by research and development partners over different areas of the watershed.

However, the knowledge generated

- remained fragmented
- did not reach the public and decision makers who were initially targeted as beneficiaries.

Target beneficiaries

- **Lao authorities and technical departments** Improved coordination at watershed level,
- **Users of the Nam Khan valley** (e.g. farmers, fishermen, forest managers) will benefit from pilot activities and alternative systems and strategies for environmental preservation,
- **Local communities** will gain a better understanding of the existing trade-offs between conservation and development,
- **General public** will gain awareness about the extent of the natural and cultural heritage of the valley and the need to preserve it for future generations.

Methods

- Public **participation to knowledge capitalization** – workshop series
- Exploring the **trade-offs between conservation and development** through a common **knowledge integration framework:**
  - Maps – zoning
  - Case studies – thematic approach
- Systematic characterization of **natural and cultural heritages**
  - Scenarios will be discussed
  - Knowledge gaps will be identified

The successive stages of knowledge capitalization

- **1st workshop objectives** (Feb. 2010)
  - Sharing information about the intended process among key stakeholders.
  - Assessing the relevance of a watershed-wide perspective on resource management and knowledge integration
  - Developing a common vision of on-going changes and related conservation – development issues.
  - Mapping who is (or has been, or is planning of) doing what, where, in the Nam Khan area.
  - Prioritizing the issues that need to be tackled during the subsequent thematic workshops

The successive stages of knowledge capitalization

- **Potential subsequent workshops** in 2010 (to be decided during 1st workshop)
  - Characterising the diversity of natures and cultures at multiple scales. Towards a monitoring system.
  - Trends and drivers of land use changes in the Nam Khan area. An historical perspective.
  - Patterns of human settlements and changing relations of the ethnic groups with their natural environment. The challenges of preserving bio-cultural diversity at the landscape level.
  - Environmental impact of the changes in agricultural practices and production systems: forest and biodiversity degradation.
  - Access to water (quality / quantity), hydrological patterns and fisheries.
  - Access to market and services, occupational mobility.
  - Water management across scales and uses. Is integrated watershed management practically feasible?
  - ...

The successive stages of knowledge capitalization

- Final **conference about Nam Khan watershed + book** (in Lao and English) -
  - Results of the thematic workshops will be synthesized so as to support a general discussion that will be organized at the end of 2010.
  - A conference about the future of the Nam Khan's natural and cultural heritage will be organized in Luang Prabang.
  - The main lessons from the capitalization efforts will then be drawn collectively and prospects for further actions will be envisioned.

Thank you for your attention

Appendix 4

KNOWLEDGE CAPITALIZATION WORKSHOP

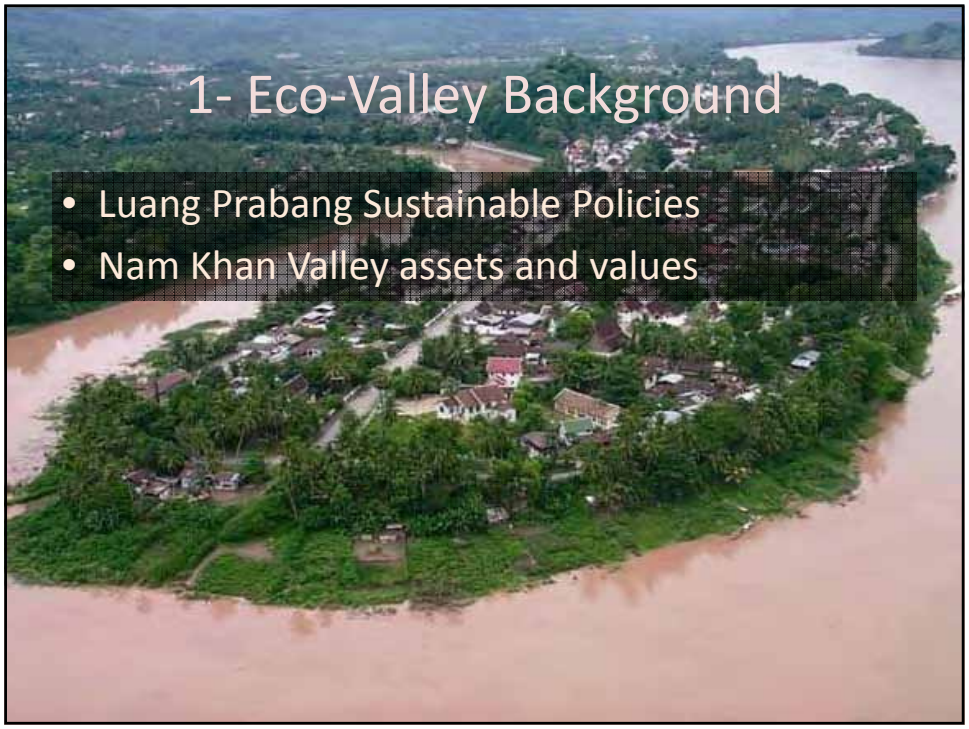
4-5 February 2010

Luang Prabang Provincial Agriculture and Forestry Office

Nam Khan

Eco - Valley Programme

Région Centre – Luang Prabang Province



Luang Prabang Sustainable Development Policies

PSMV - Safeguarding and Preservation Plan:

-Urban Regulation

-Inventory of Historic Buildings

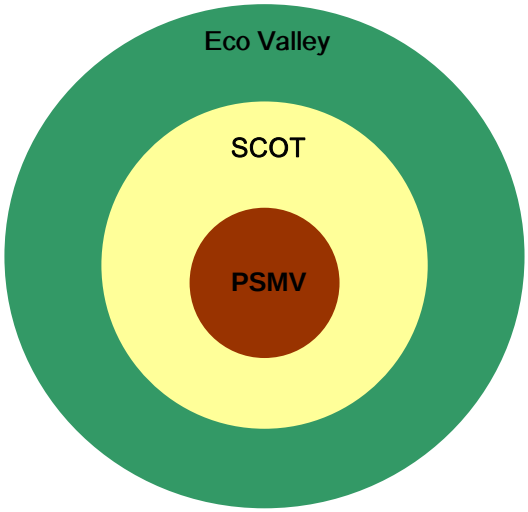
-« Recommandations »

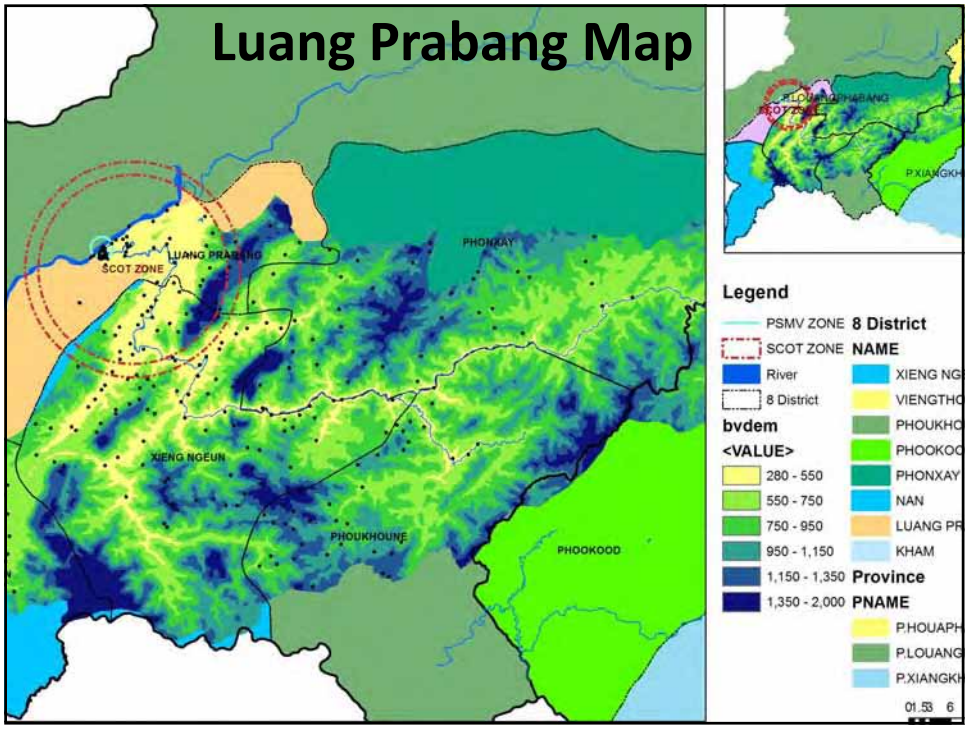
SCOT - Scheme of Territorial Coherence: identifies the strategy, priorities and territorial development guidelines, in respect of the city's cultural identity

Eco-Valley:

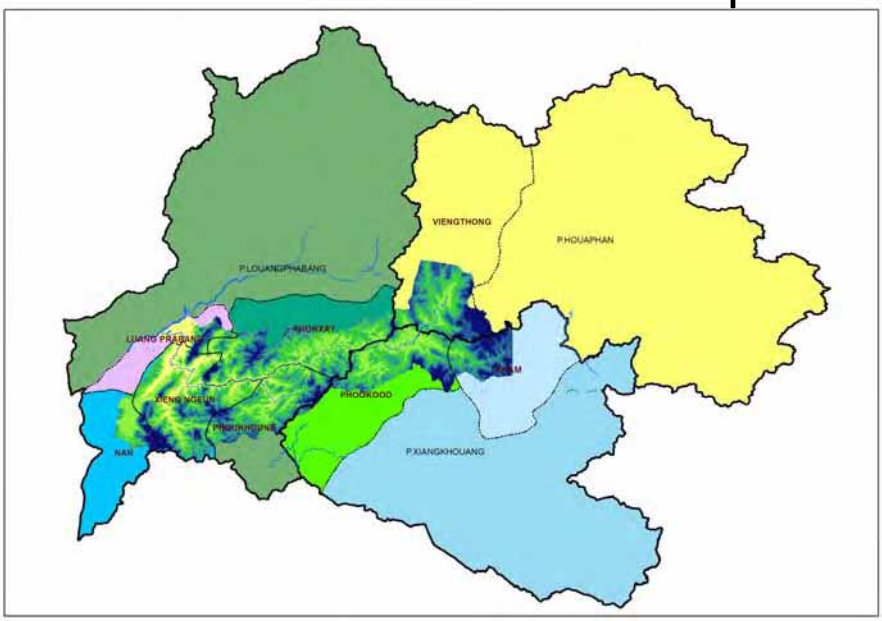
Reduce the gap between Luang Prabang and the rural world surrounding through sustainable development.

Preserve the Natural and Cultural Heritage of the Nam Khan Watershed





Nam Khan Watershed Map



Nam Khan Valley Features

Size	Area: around 2600 km Linear: 260 km	3 provinces / 6 districts
Population	Between 50.000 and 70.000 people Between 100 and 120 villages	Ethnics minorities (Khmus, Hmongs communities) Cultural heritage and Ethnic diversity issue
Water	Deep valley; Alluvial plains restricted	Fisheries, transportation
Forestry	NBCA Phou Loei	Biodiversity Heritage to preserve
Fauna	NBCA Phou Loei	Tigers and birds: protected species and Biosphere Reserve

2- Eco-Valley Program:

"Preserving the Natural and Cultural Heritage of the Nam Khan Watershed"

- A Cooperation between Region Centre and Luang Prabang Province
  - Signature of Convention: 13th of September 2005
  - Maison du Patrimoine (DPL)
- Firsts Steps and initiatives: MAB and Eco-tourism
- Limits and contraints

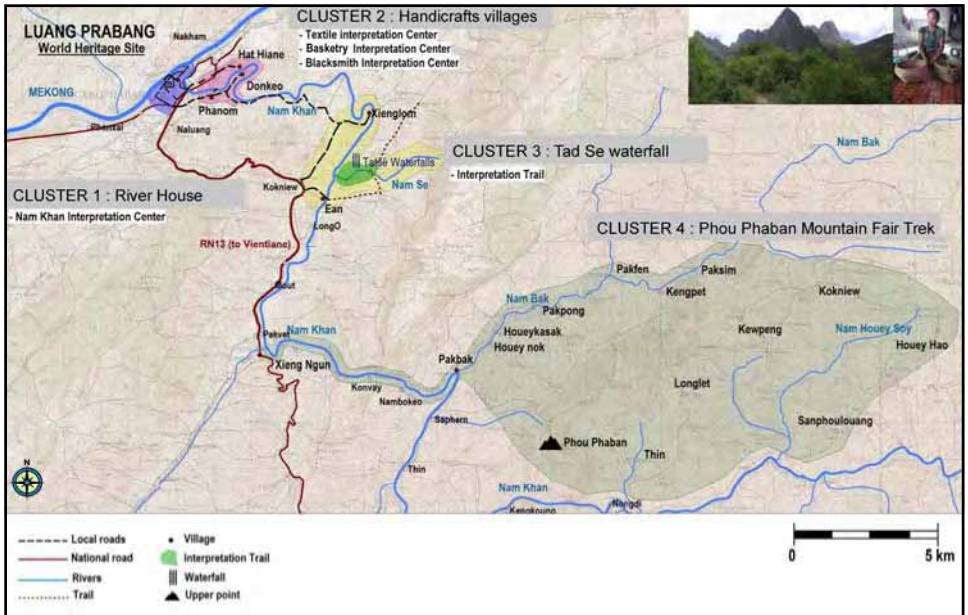
Man and Biosphere Program (UNESCO)

- **Research, monitoring and evaluation,** within the framework of the Biosphere Reserve Integrated Monitoring Programme (BRIM).
- **Building up capacity,** through education, technical training, and public awareness.
- **Exploring novel ecological theory and practice** for example relationship between culture and ecology, quality economies, urban ecology etc.

Eco-Tourism Project (ADB)

- Sustainable tourism management and heritage preservation
- Ensure the involvement of local populations
- Build up income-generating activities
- Capacity building for local authorities and communities in managing tourism



Targeted Areas along the Nam Khan River

Limits and Contraints

- 3 differents spots have been identified as possible locations for dam facilities
  - The closest to Luang Prabang has been denied
  - Feasability studies on process for the other 2
  - 1 project has been approuved on the Nam Ming river, which is in the Nam Khan watershed

3- Current activities

- Signature of Convention with Water Ressources and Environment Office of **Luang Prabang (WREO-LP)** 8th of April 2009
- MoA on Strategical Intervention Framework
  - **To Know**
  - **To Train and Sensitize**
  - **To Experiment and Develop**
  - **To Promote**
- Cooperation "River to River: Loire-Niger-Mekong" with **Mission Val de Loire** and **French Ministry of Foreign Affairs (MAEE)**

Cooperation "River to River: Loire-Niger-Mekong"
Mission Val de Loire and **French Ministry of Foreign Affairs**

→ ***The "Nam Khan Eco-valley programme" is an object of decentralized cooperation between Luang Prabang Province and "Centre" Region***

→ ***The "Rivers to rivers cooperation" project, which the Mission Val de Loire is responsible for management, contributes to the Eco-valley project***

Cooperation "River to River: Loire-Niger-Mekong"
Mission Val de Loire and **French Ministry of Foreign Affairs**

Regional management and protection of river corridor heritage

→ Objective : ***Developing a policy and tools for a natural and cultural heritage-friendly regional management of river corridors***

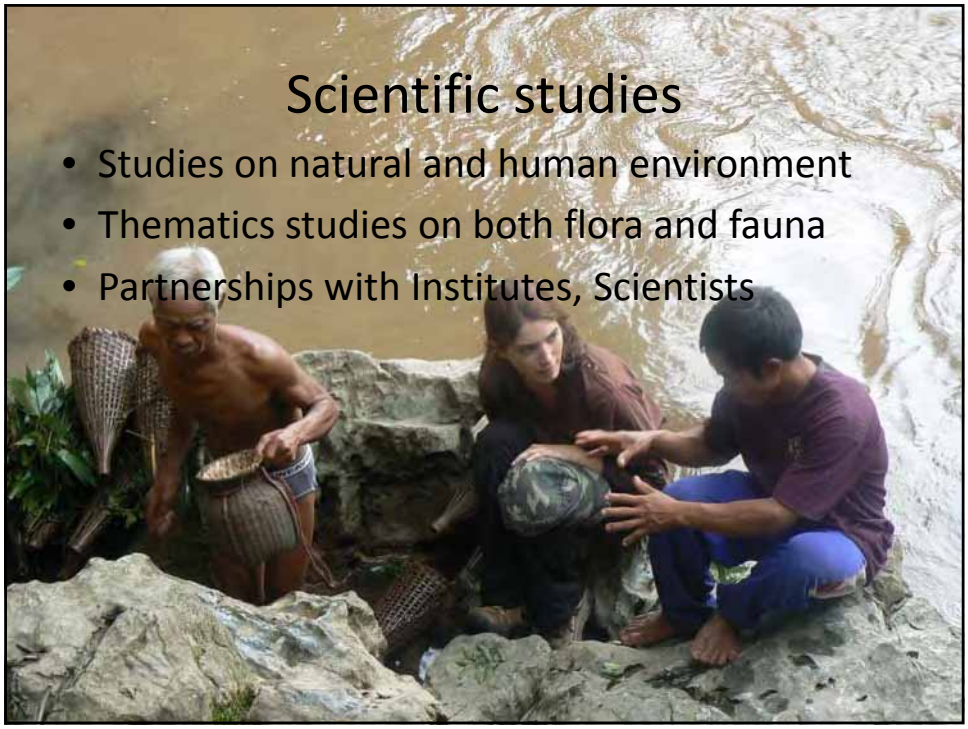
→ ***Loire valley partners & international and local partners***

Cooperation "River to River: Loire-Niger-Mekong"
Mission Val de Loire and **French Ministry of Foreign Affairs**

- *Component 1:* ***Institutional support for organizing and managing river regions***
  - *Action 1.1: Assistance with setting up local development structures*
  - *Action 1.2: Improvement of knowledge about river regions*
  - *Action 1.3: Development of tools for managing river regions*

Cooperation "River to River: Loire-Niger-Mekong"
Mission Val de Loire and **French Ministry of Foreign Affairs**

- *Component 2:* ***Testing techniques for protecting and managing the natural environments around rivers***
- *Component 3:* ***Passing on and making the most of what we know through exchanges of experiences***



Knowledge Capitalization Process

- Capitalization and Restitution of Eco-Valley Program Researches and Knowledge
- Collaboration with Institute for Research and Development (IRD)
- Target Beneficiaries:
  - Lao authorities;technical departments
  - Users of the Nam Khan Valley
  - Local Communities
  - General Public

Rural Water Supply and Sanitation

13 villages in 3 districts (Xieng Ngeung, Phone Xay and Phoukhoun

Beneficiaries: 762 families, over **4500 people**

GFS: spring and stream intakes, around **70 water points**

Latrines for each and every family

TAMBOURS DE BRONZE

- Improved access to safe water supply and sanitation
  - Families less exposed to water borne deseases
  - Saving time water collection
  - Partnership with Nam Saat
  - Reduces occurrence of diarrheas
- Hygiene education
  - Prevent water and sanitation deseases
  - Partnership with Lao Red Cross Luang Prabang Branch
- Community participation
  - Sense of ownership of the projects
  - Contribute by providing labour and material
  - Committees and volunteers

Conservation Agriculture

- 3 target villages in Xieng Ngeung district
- Diagnostic and sensitize
- New Technical Proposal
- Exemplary action and monitoring

Reinforcement of capacity building

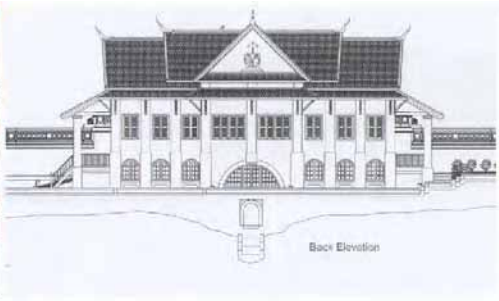
- Trainings
  - SIG, Agroecology, Water Analysis Laboratory
- Intergrated Ressources Management Comitee of Nam Khan Watershed of Luang Prabang Province

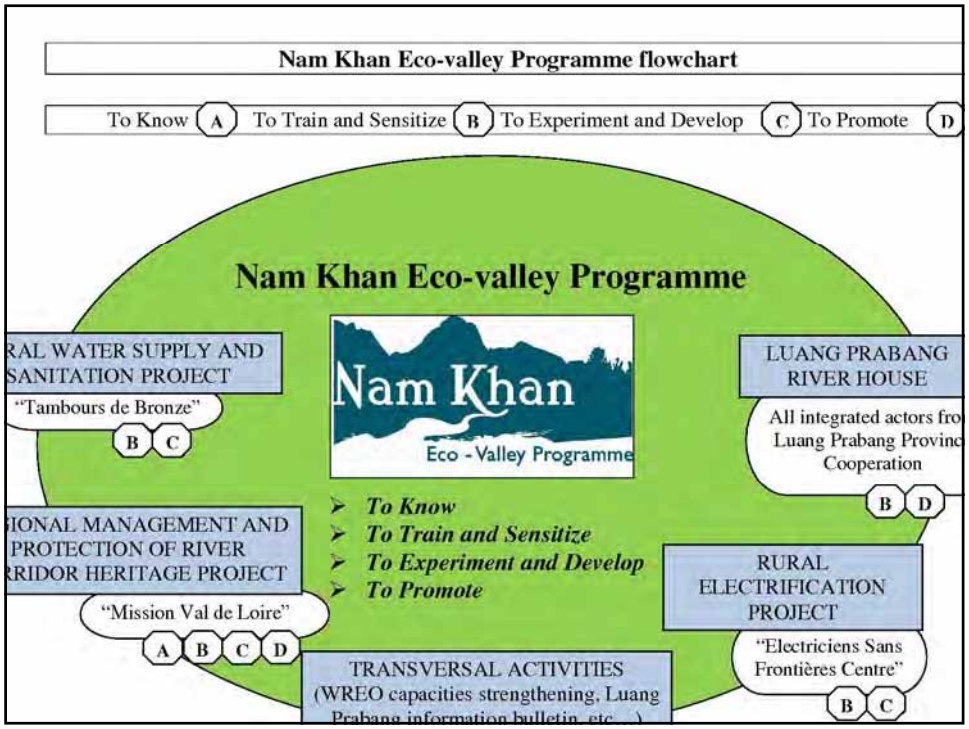

4- Projects and perspectives
• Pursue Scientific researches and cooperation
• Water and Sanitation: year 3, news villages and reinforcement
• Cultural and informative cooperation
• New activities and projects


Rural Electrification
• 2010 : Faisability study
➢11 villages targeted
➢Hydro and solar systems
➢Outcome generating activities

River House

- 2010: Prefiguration Analysis and Restoration
  - Inform and Train
  - Meet and sensitize
  - Exposure and events





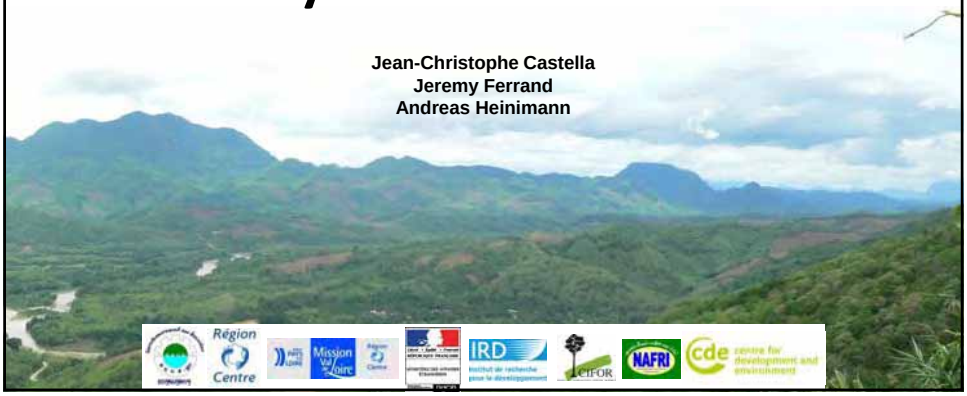
Appendix 5

Nam Khan
Eco - Valley Programme

Preserving the Natural and Cultural Heritage of the Nam Khan Watershed

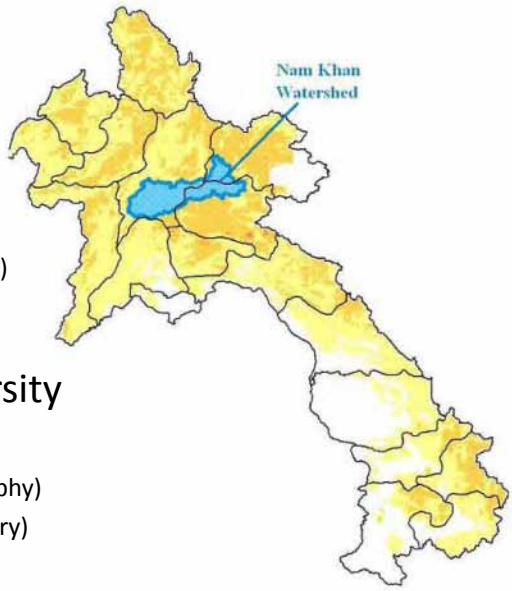
The Nam Khan watershed: a diversity of natures and cultures

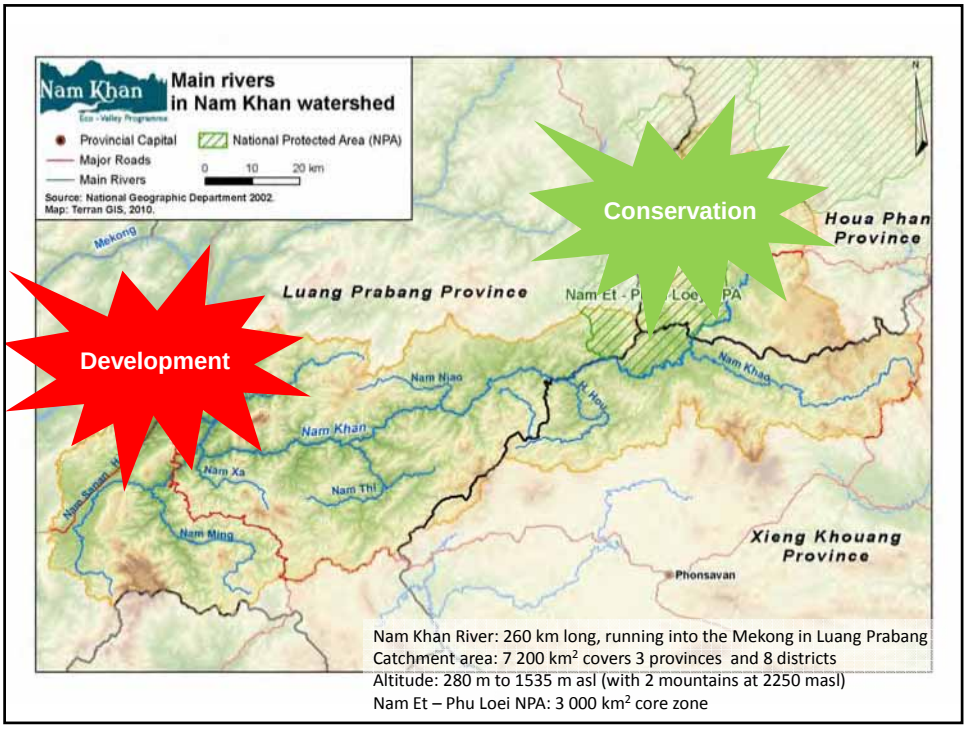
Jean-Christophe Castella
Jeremy Ferrand
Andreas Heinimann



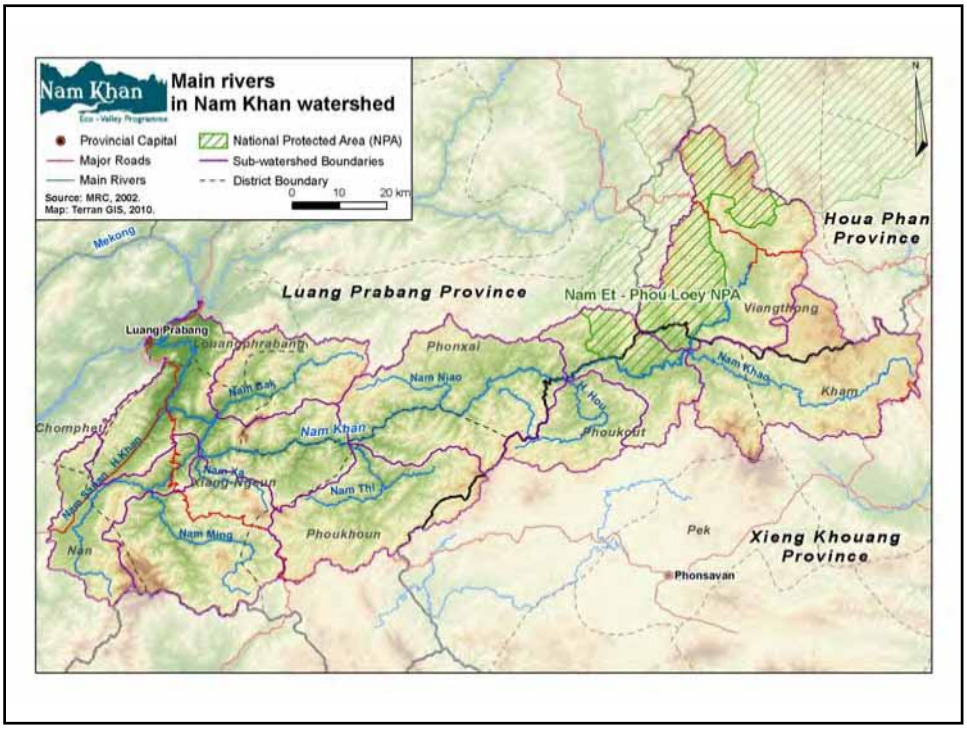
Objectives

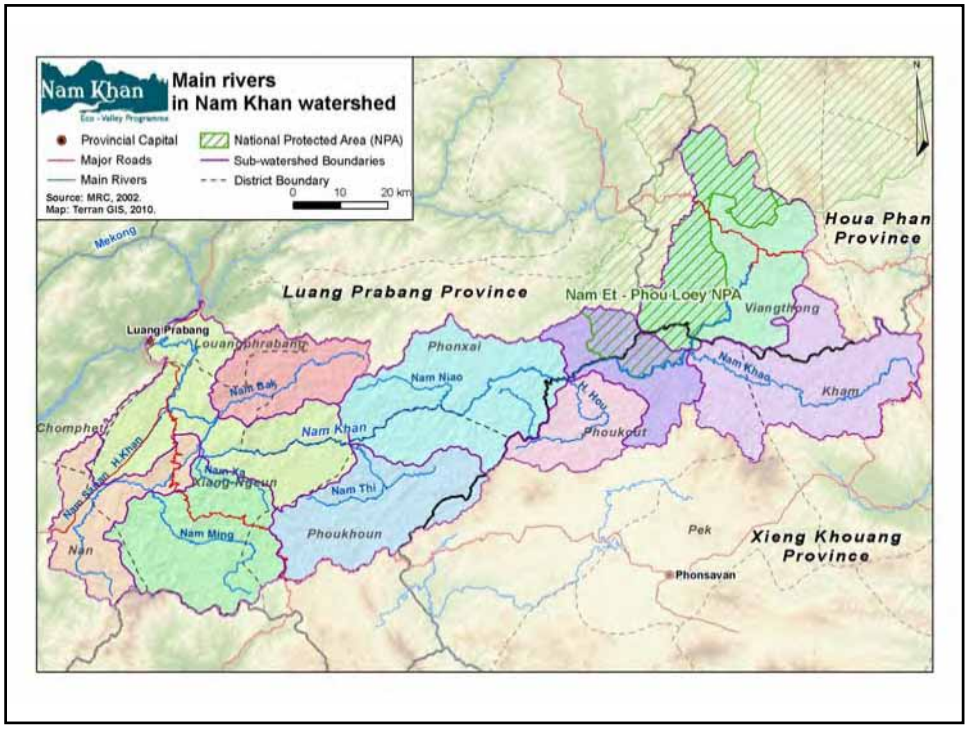
- Taking stock of existing knowledge
  - Maps of Nam Khan watershed (Eco-Valley + CDE)
  - Case studies (Eco-Valley)
- Understanding diversity (natures & cultures)
  - Spatial organisation (geography)
  - How it evolves in time (history)

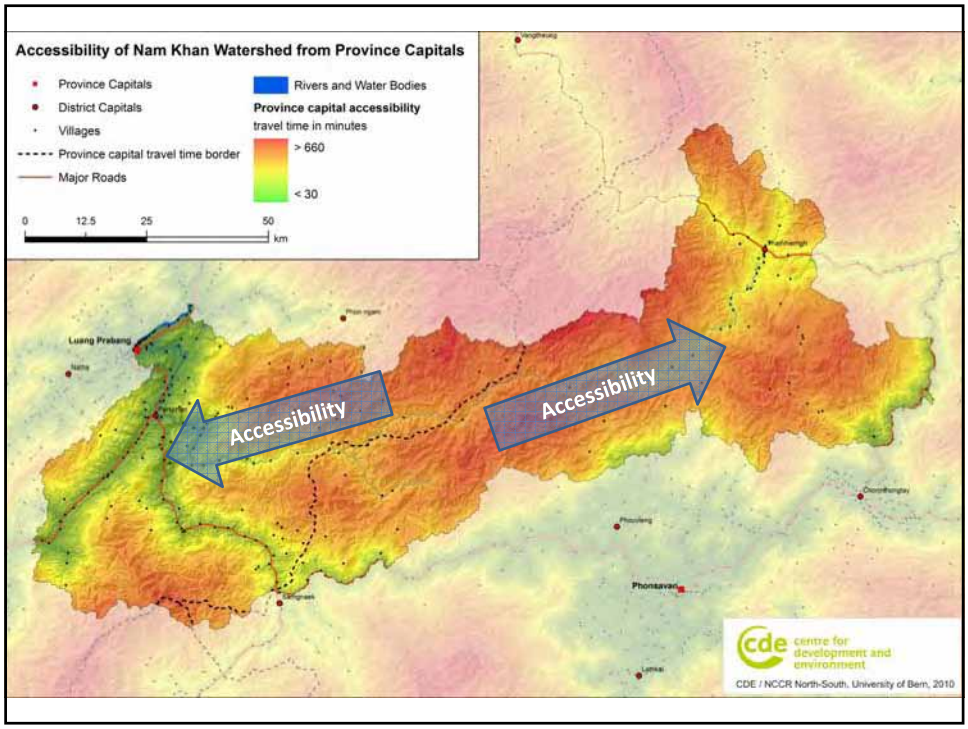


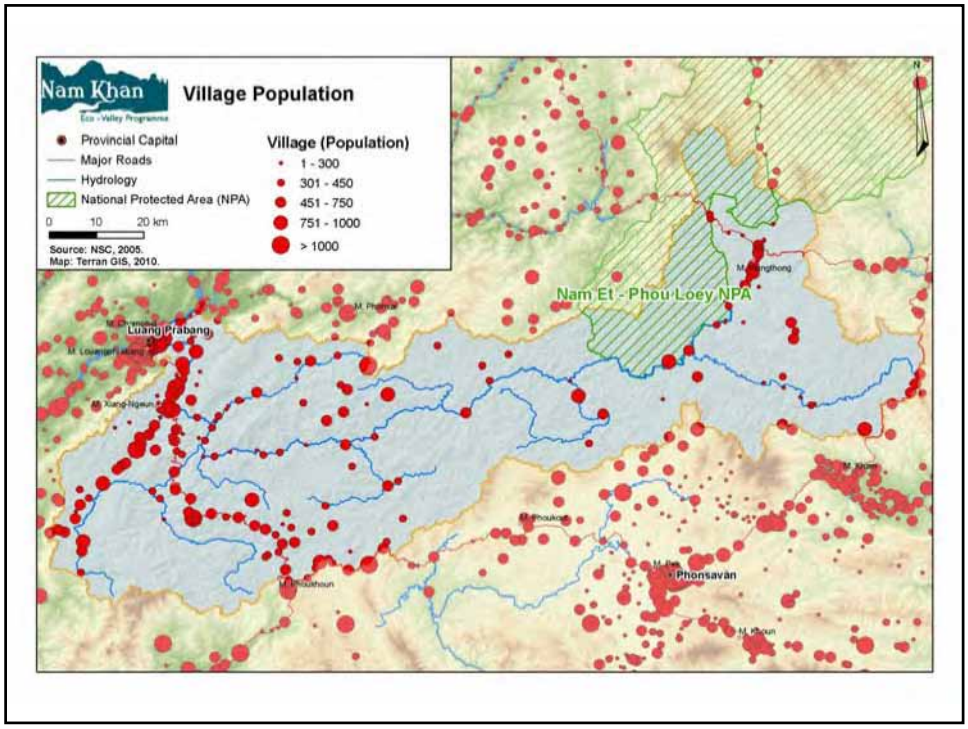


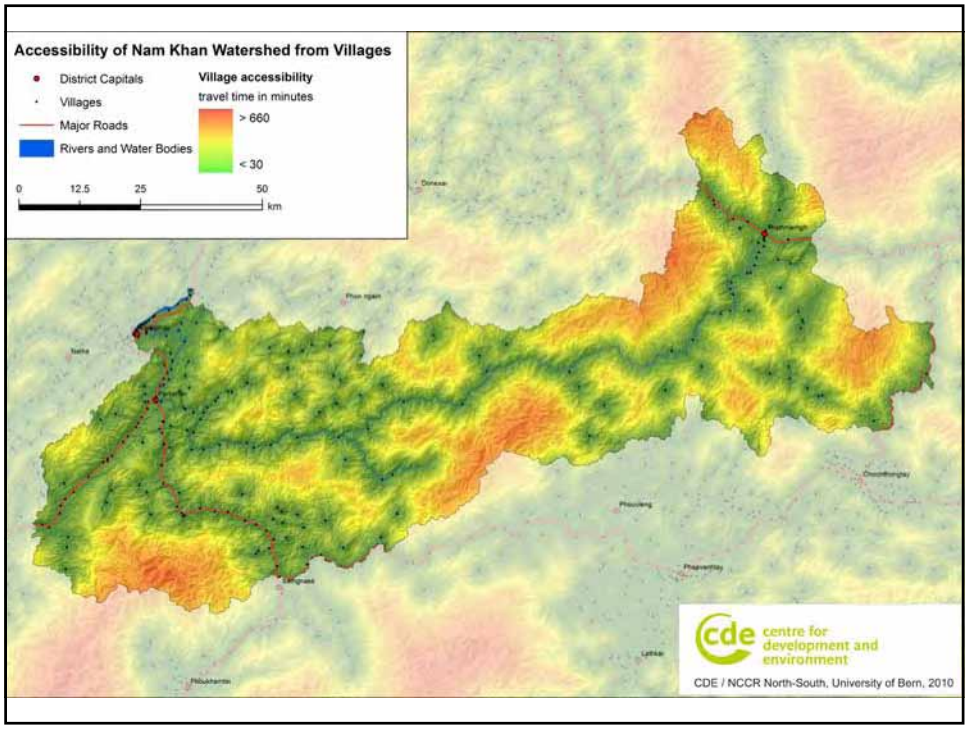
Nam Khan River: 260 km long, running into the Mekong in Luang Prabang
Catchment area: 7 200 km^2 covers 3 provinces and 8 districts
Altitude: 280 m to 1535 m asl (with 2 mountains at 2250 masl)
Nam Et – Phu Loei NPA: 3 000 km^2 core zone

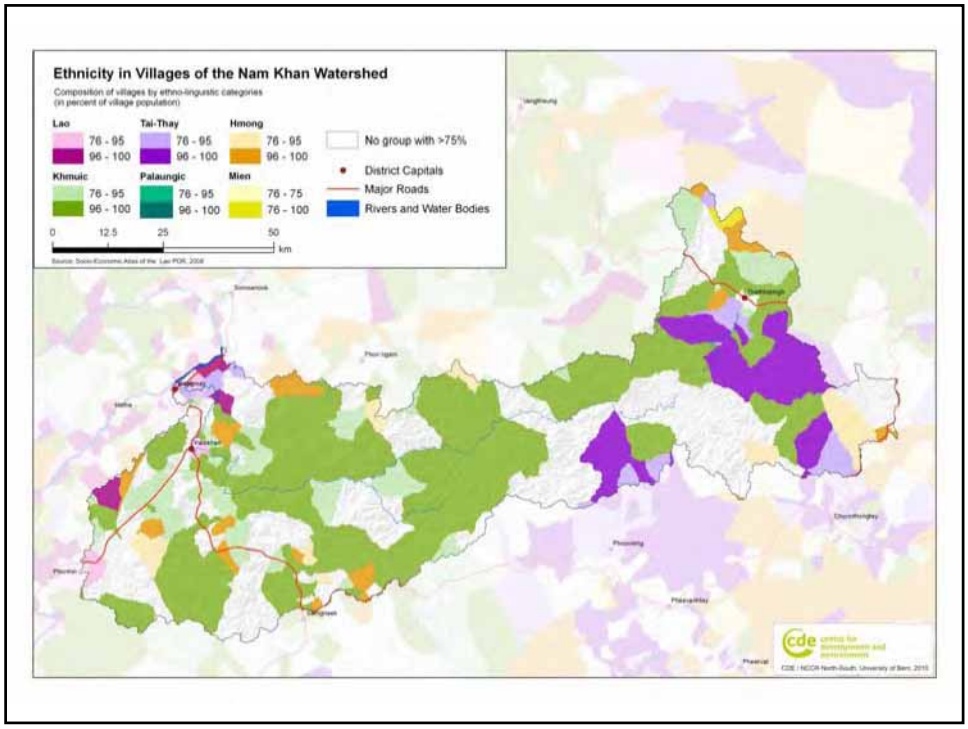


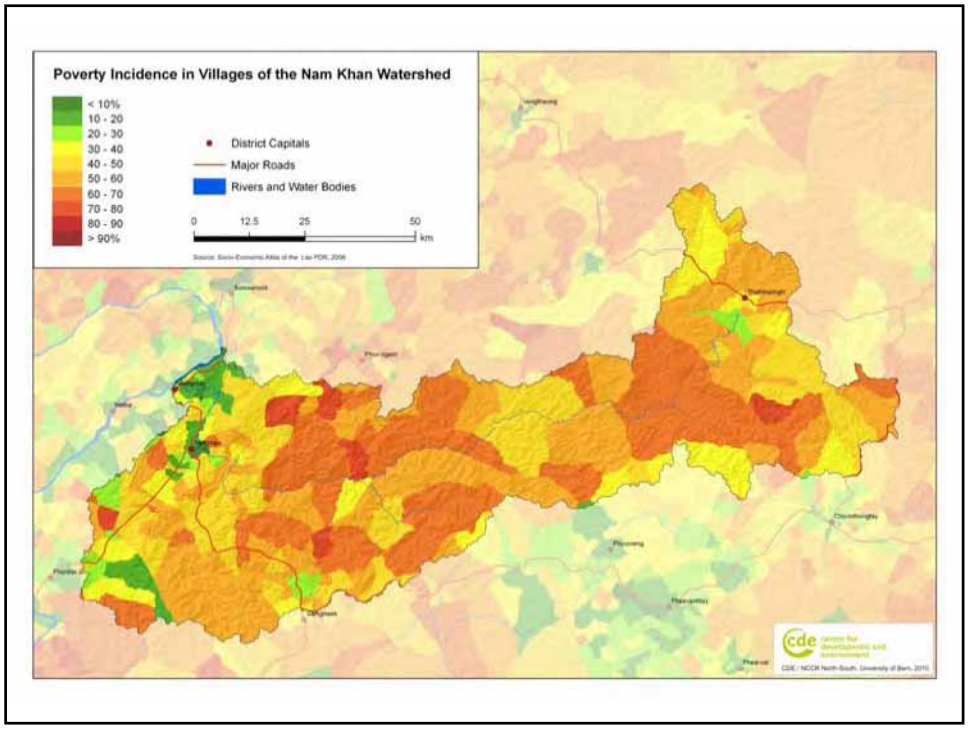

Nam Khan
Main rivers
in Nam Khan watershed
Provincial Capital
Major Roads
Main Rivers
National Protected Area (NPA)
Sub-watershed Boundaries
District Boundary
Source: MRC, 2002.
Map: Terran GIS, 2010.
0 10 20 km
N
Mekong
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Viangthong
Luang Prabang
Louangphrabang
Phonxai
Nam Niao
Nam Bak
Nam Khao
Kham
Chomphet
Nam Khan
Phoukout
Nam Ka
Xiaog-Ngeun
Nam Thi
Nam Ming
Phoukhoun
Nan
Pek
Xieng Khouang Province
Phonsavan

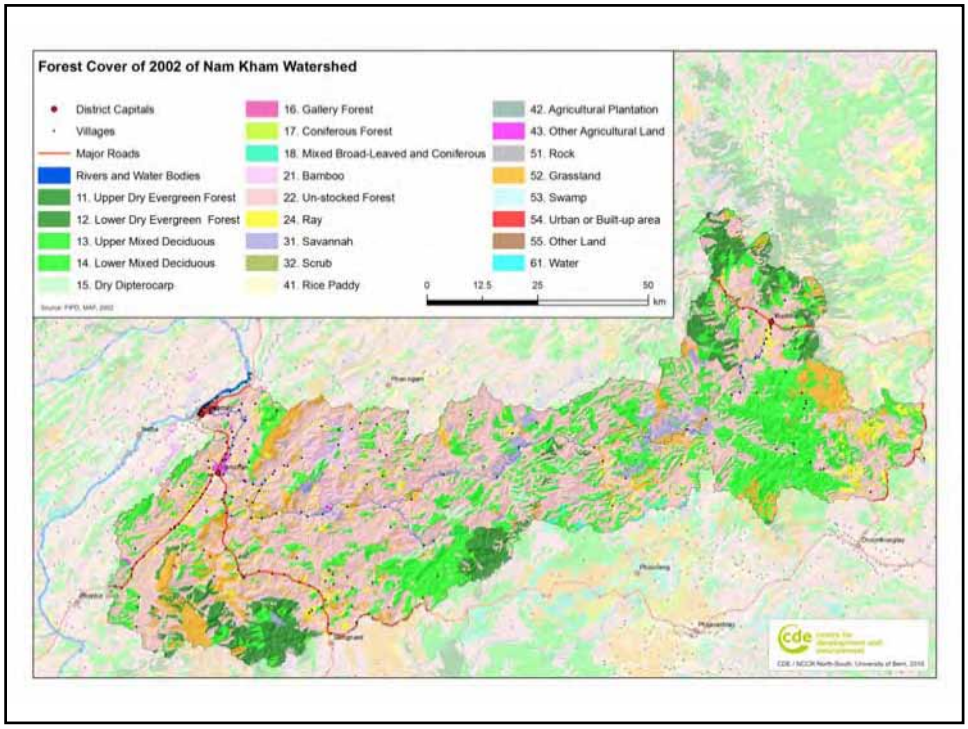

Accessibility of Nam Khan Watershed from Province Capitals
Province Capitals
District Capitals
Villages
Province capital travel time border
Major Roads
Rivers and Water Bodies
Province capital accessibility
travel time in minutes
> 660
< 30
0 12.5 25 50
km
Luang Prabang
Phonsavan
Accessibility
Accessibility
cde centre for development and environment
CDE / NCCR North-South, University of Bern, 2010

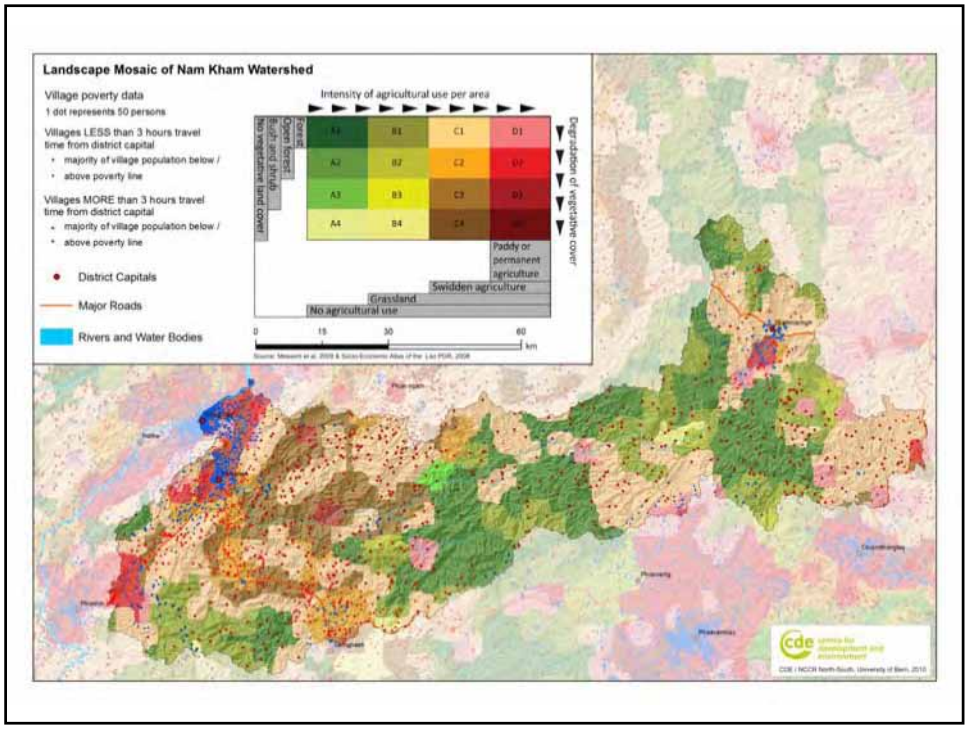

Nam Khan
Eco-Valley Programme
Village Population
Provincial Capital
Major Roads
Hydrology
National Protected Area (NPA)
0 10 20 km
Source: NSC, 2005.
Map: Terran GIS, 2010.
Village (Population)
1 - 300
301 - 450
451 - 750
751 - 1000
> 1000
N
Nam Et - Phou Loey NPA
Luang Prabang
Phonsavan

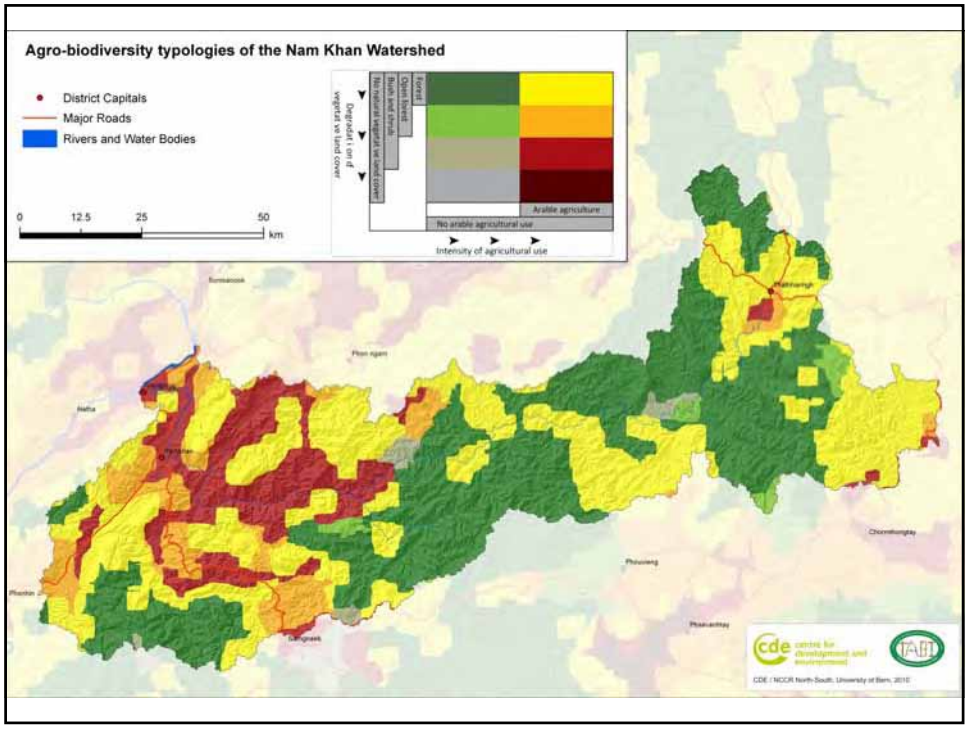

Accessibility of Nam Khan Watershed from Villages
District Capitals
Villages
Major Roads
Rivers and Water Bodies
Village accessibility
travel time in minutes
> 660
< 30
0 12.5 25 50
km
cde centre for development and environment
CDE / NCCR North-South, University of Bern, 2010


Ethnicity in Villages of the Nam Khan Watershed
Composition of villages by ethno-linguistic categories
(in percent of village population)
Lao
76 - 95
96 - 100
Tai-Thay
76 - 95
96 - 100
Hmong
76 - 95
96 - 100
No group with >75%
District Capitals
Major Roads
Rivers and Water Bodies
Khmuic
76 - 95
96 - 100
Palaungic
76 - 95
96 - 100
Mien
76 - 75
76 - 100
0
12.5
25
50
km


Poverty Incidence in Villages of the Nam Khan Watershed
< 10%
10 - 20
20 - 30
30 - 40
40 - 50
50 - 60
60 - 70
70 - 80
80 - 90
> 90%
District Capitals
Major Roads
Rivers and Water Bodies
0
12.5
25
50
km


Forest Cover of 2002 of Nam Kham Watershed
District Capitals
Villages
Major Roads
Rivers and Water Bodies
11. Upper Dry Evergreen Forest
12. Lower Dry Evergreen Forest
13. Upper Mixed Deciduous
14. Lower Mixed Deciduous
15. Dry Dipterocarp
16. Gallery Forest
17. Coniferous Forest
18. Mixed Broad-Leaved and Coniferous
21. Bamboo
22. Un-stocked Forest
24. Ray
31. Savannah
32. Scrub
41. Rice Paddy
42. Agricultural Plantation
43. Other Agricultural Land
51. Rock
52. Grassland
53. Swamp
54. Urban or Built-up area
55. Other Land
61. Water
0
12.5
25
50
km

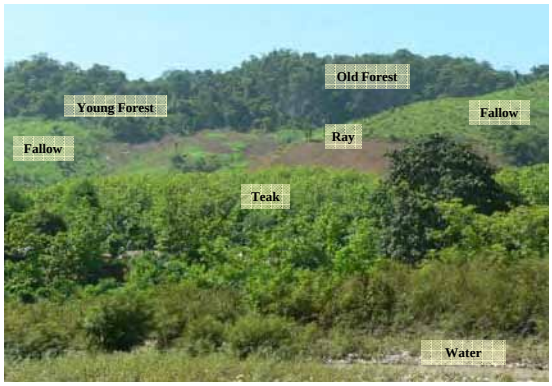

Landscape Mosaic of Nam Kham Watershed
Village poverty data
1 dot represents 50 persons
Villages LESS than 3 hours travel time from district capital
majority of village population below /
above poverty line
Villages MORE than 3 hours travel time from district capital
majority of village population below /
above poverty line
District Capitals
Major Roads
Rivers and Water Bodies
Intensity of agricultural use per area
Degradation of vegetative cover
Forest
Open forest
Bush land/ shrub
No vegetative land cover
Paddy or permanent agriculture
Swidden agriculture
Grassland
No agricultural use
0
15
30
60
km



Nam Khan
Eco - Valley Programme

TYPOLOGY OF LANDSCAPES AND ECOSYSTEMS IN THE NAM KHAN VALLEY

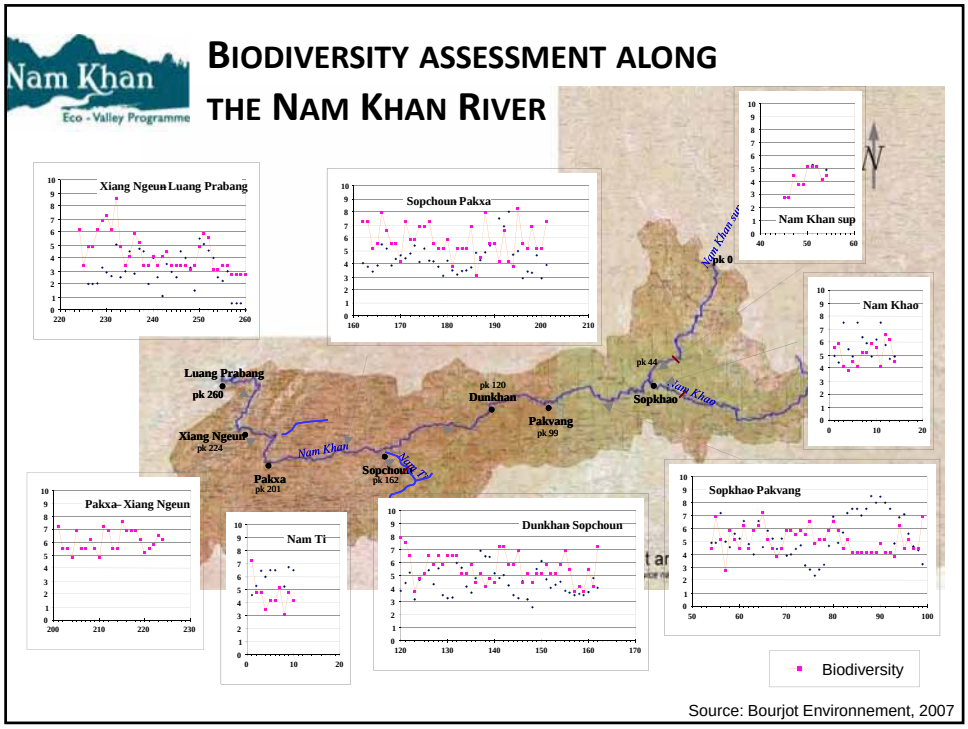
Biogeographic approach: characterizing the diversity of natural and human environments from landscape to watershed scales.



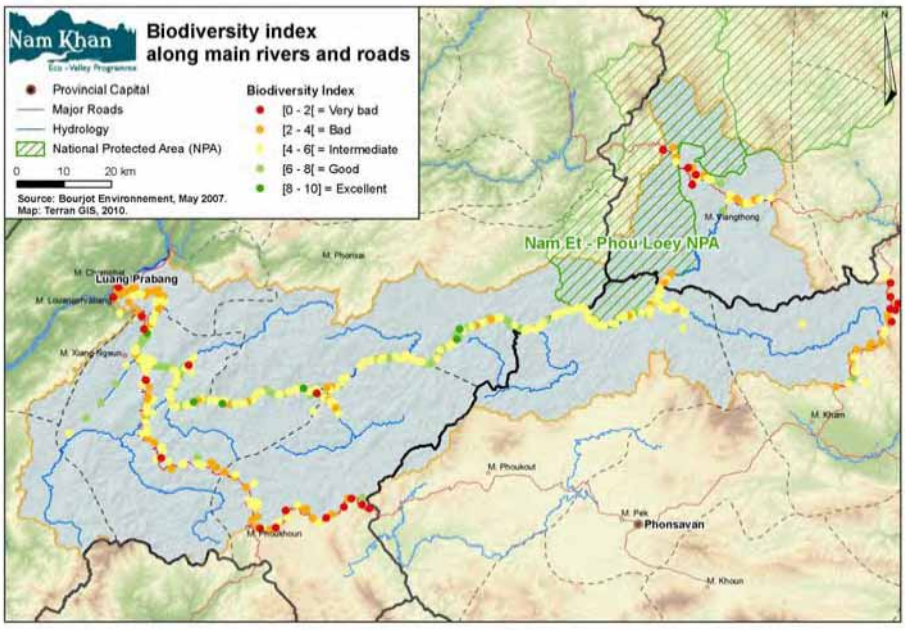
Old forest	*Young forest*	*Fallow*	*Ray*	*Paddy*	*Teak*
15%	*15 %*	*30 %*	*30 %*	*0 %*	*10 %*

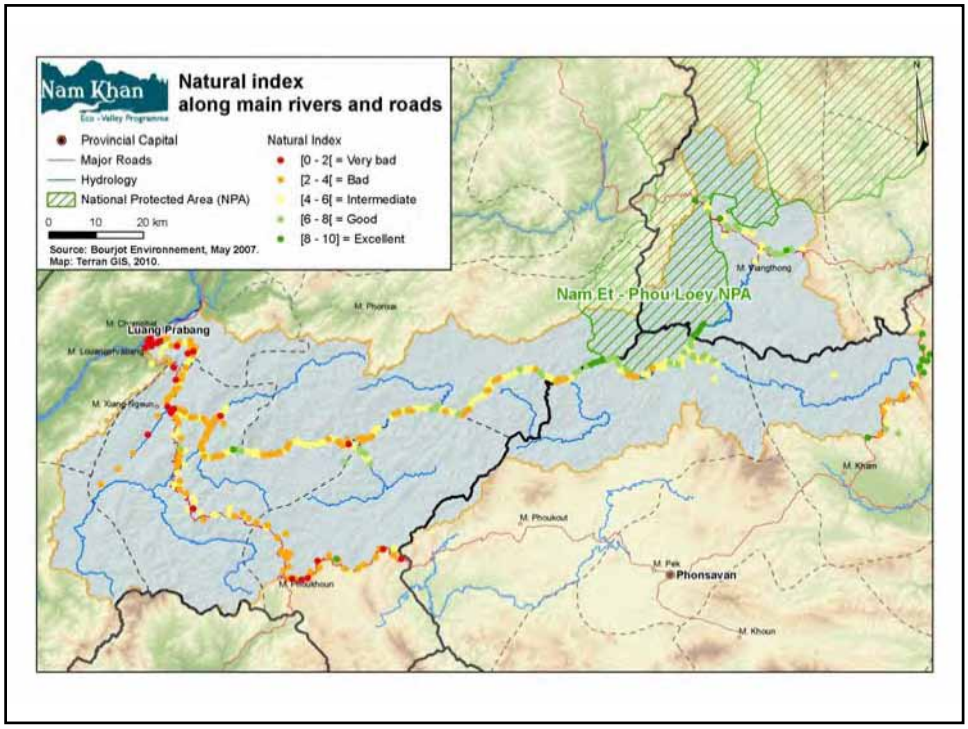
Land Use Type	% of total land cover	Biodiversity coefficient
Old Forest	OF = 0	0
	0 < OF < 10 %	1
	10 % < OF < 25 %	2
	25 % < OF	**4**
Young Forest	YF = 0	0
	0 < YF < 10 %	1
	10 % < YF < 25 %	2
	25 % < YF	**4**
Fallow	…	

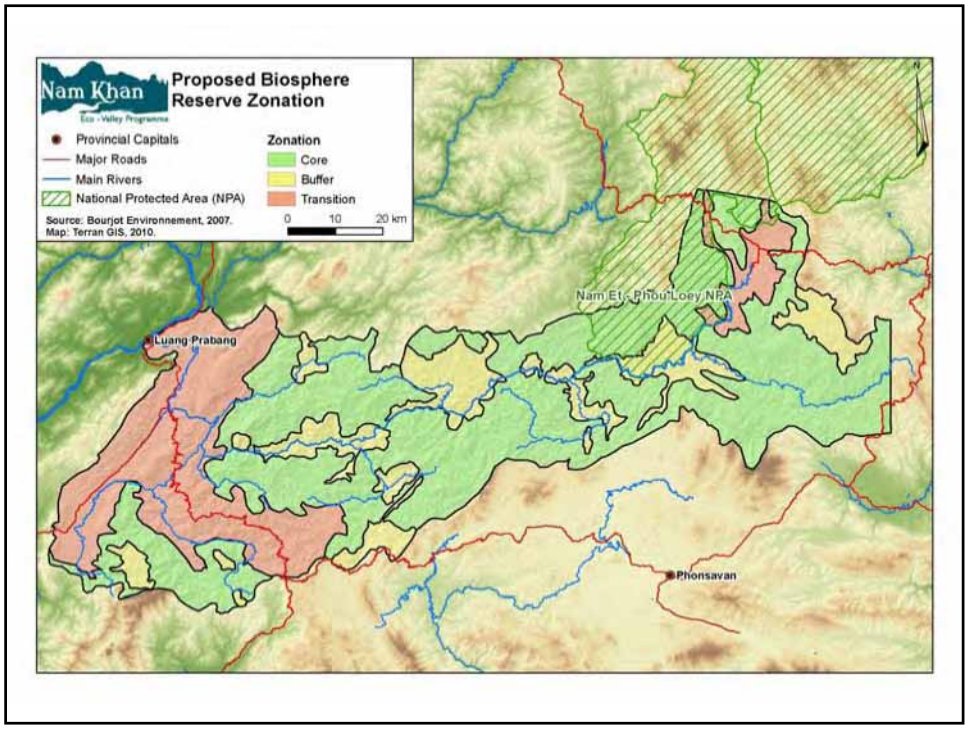
Source: Bourjot Environnement, 2007

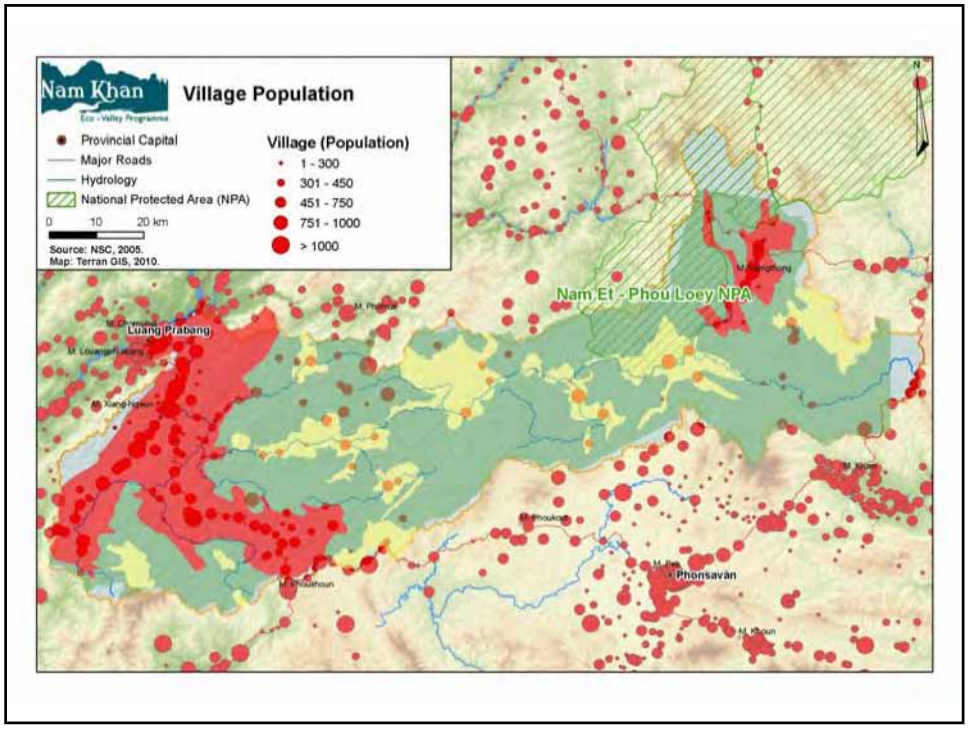


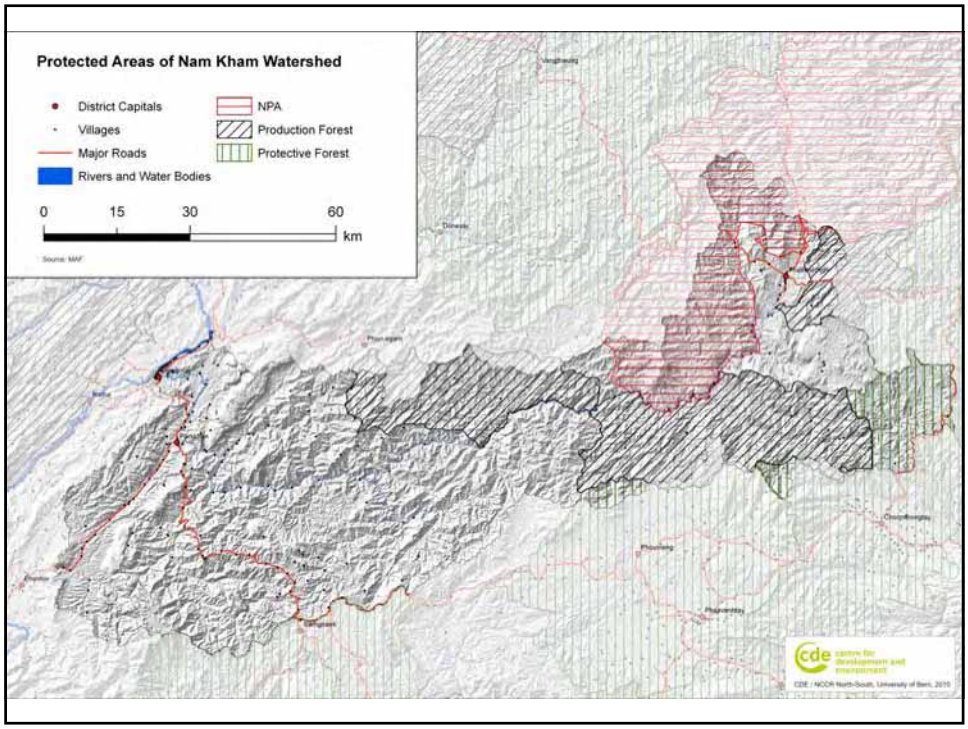
Source: Bourjot Environnement, 2007




Nam Khan
Eco-Valley Programme
Natural index
along main rivers and roads
Provincial Capital
Major Roads
Hydrology
National Protected Area (NPA)
0 10 20 km
Source: Bourjot Environnement, May 2007.
Map: Terran GIS, 2010.
Natural Index
[0 - 2[= Very bad
[2 - 4[= Bad
[4 - 6[= Intermediate
[6 - 8[= Good
[8 - 10] = Excellent
N
Nam Et - Phou Loey NPA
Luang Prabang
Phonsavan


Nam Khan
Eco-Valley Programme
Proposed Biosphere
Reserve Zonation
Provincial Capitals
Major Roads
Main Rivers
National Protected Area (NPA)
Source: Bourjot Environnement, 2007.
Map: Terran GIS, 2010.
0 10 20 km
Zonation
Core
Buffer
Transition
N
Nam Et - Phou Loey NPA
Luang Prabang
Phonsavan

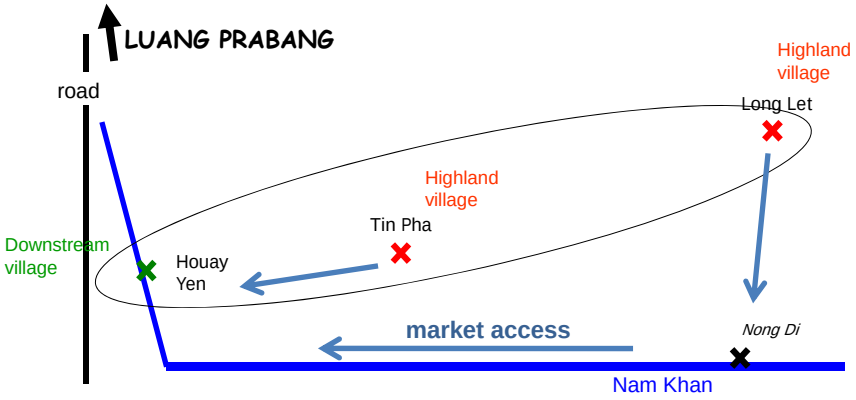

Nam Khan
Eco-Valley Programme
Village Population
Provincial Capital
Major Roads
Hydrology
National Protected Area (NPA)
0 10 20 km
Source: NSC, 2005.
Map: Terran GIS, 2010.
Village (Population)
1 - 300
301 - 450
451 - 750
751 - 1000
> 1000
N
Nam Et - Phou Loey NPA
Luang Prabang
Phonsavan


Protected Areas of Nam Kham Watershed
District Capitals
Villages
Major Roads
Rivers and Water Bodies
NPA
Production Forest
Protective Forest
0 15 30 60
km
cde
centre for development and environment

UNDERSTANDING THE DIVERSITY OF CULTURES AND NATURES IN THE NAM KHAN WATERSHED

Case study. Patterns of human settlements and social interactions

Socioeconomic approach: history of human settlements, migrations, social and economic interactions across the watershed.



UNDERSTANDING THE DIVERSITY OF CULTURES AND NATURES IN THE NAM KHAN WATERSHED

Case study. Evolving relations between cultures and natures

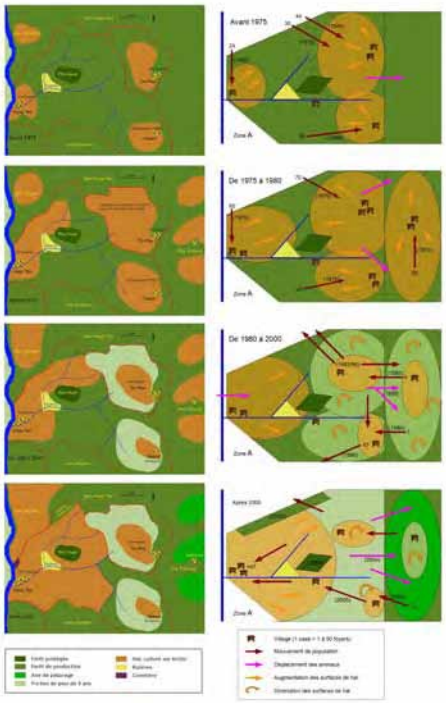
Anthropological approach: relations between ethnic groups and with their natural environments, traditional land management systems and local knowledge.




(M. Guemas, B. Moizo, Pascal Bouchery, 2007)

Case study. Changes in landscapes and livelihoods

Drivers of land use/cover changes are analyzed as interacting natural and human factors that have impact on landscape mosaics.



(M. Gabeloux, P. Julien, 2007)

(JP. Sany, K. Nanthavong, JC. Castella, 2008)

Case study. Changes in landscapes and livelihoods

Drivers of land use/cover changes are analyzed as interacting natural and human factors that have impact on landscape mosaics.

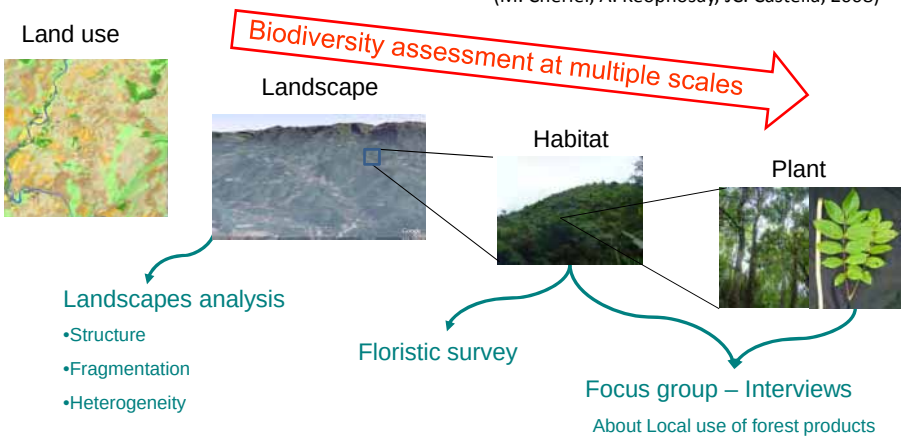
(S. Phaipasith, J. Ferrand, JC. Castella, 2008)

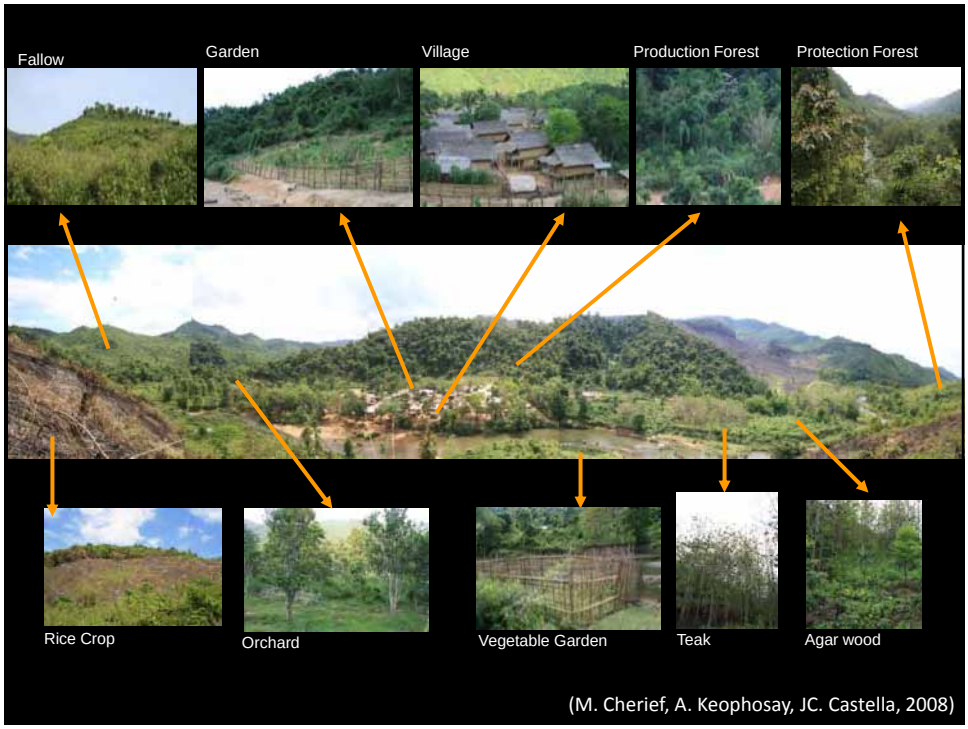
UNDERSTANDING THE DIVERSITY OF CULTURES AND NATURES IN THE NAM KHAN WATERSHED

Case study. Impacts of landscape dynamics on biodiversity

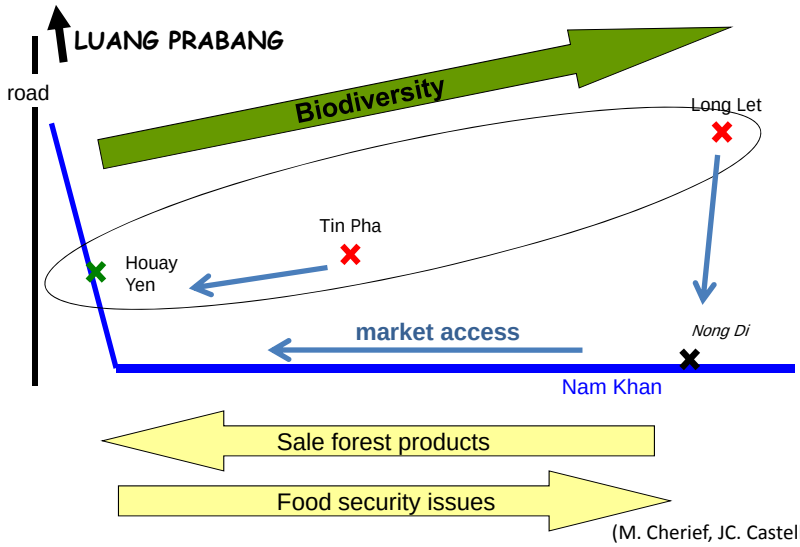
Assessing the sustainability of shifting cultivation systems on shrinking areas. Impact of decreasing fallow periods on biodiversity and ecosystemic services.

(M. Cherief, A. Keophosay, JC. Castella, 2008)





UNDERSTANDING THE DIVERSITY OF CULTURES AND NATURES IN THE NAM KHAN WATERSHED

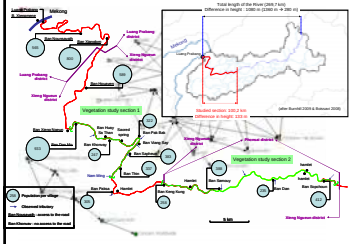


(M. Cherief, JC. Castella, 2008)

UNDERSTANDING THE DIVERSITY OF CULTURES AND NATURES IN THE NAM KHAN WATERSHED

Case studies. Water access and uses - fisheries

Aquatic resources, water uses and water management issues (quantity & quality). Who will benefit and who will provide services?

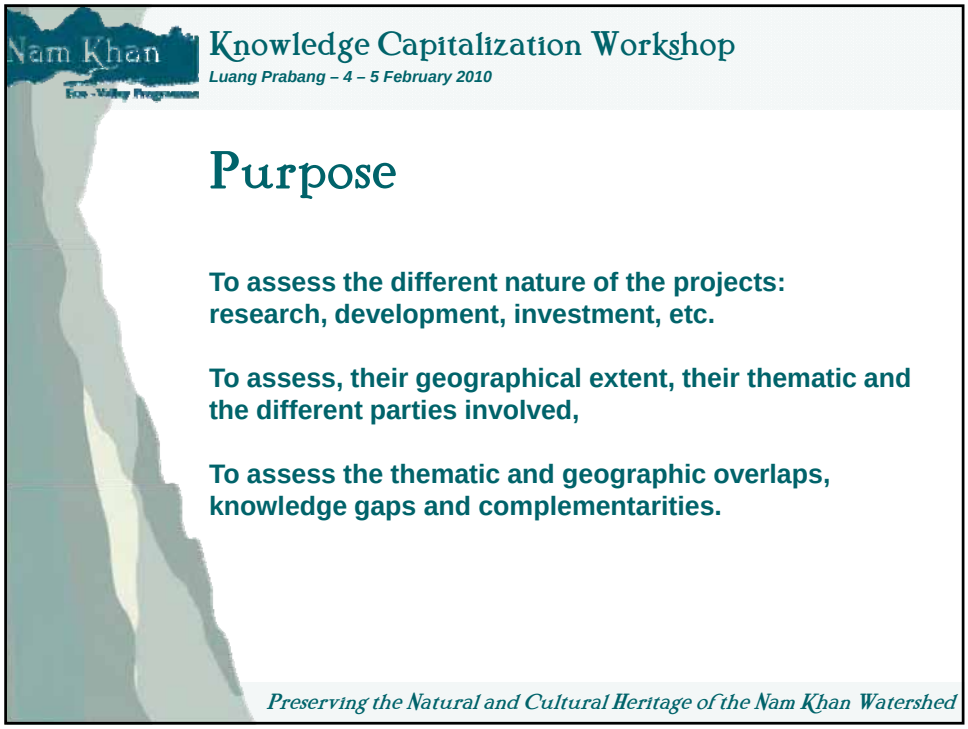


- Fisheries and freshwater biodiversity (R. Mollot, 2005)
- Aquatic resource scoping (P. Friend, 2007)
- Social network analysis (R. Shue & N. Badenoch, 2009)
- Fisheries study (L. Valverde & P. Cacot, 2009)




Appendix 6


Nam Khan
Knowledge Capitalization Workshop
Luang Prabang – 4 – 5 February 2010
"Who is doing what&where in the Nam Khan area"
An overview of past, on going and future project on the Nam Khan area
Preserving the Natural and Cultural Heritage of the Nam Khan Watershed


Nam Khan
Knowledge Capitalization Workshop
Luang Prabang – 4 – 5 February 2010
Purpose
To assess the different nature of the projects: research, development, investment, etc.
To assess, their geographical extent, their thematic and the different parties involved,
To assess the thematic and geographic overlaps, knowledge gaps and complementarities.
Preserving the Natural and Cultural Heritage of the Nam Khan Watershed

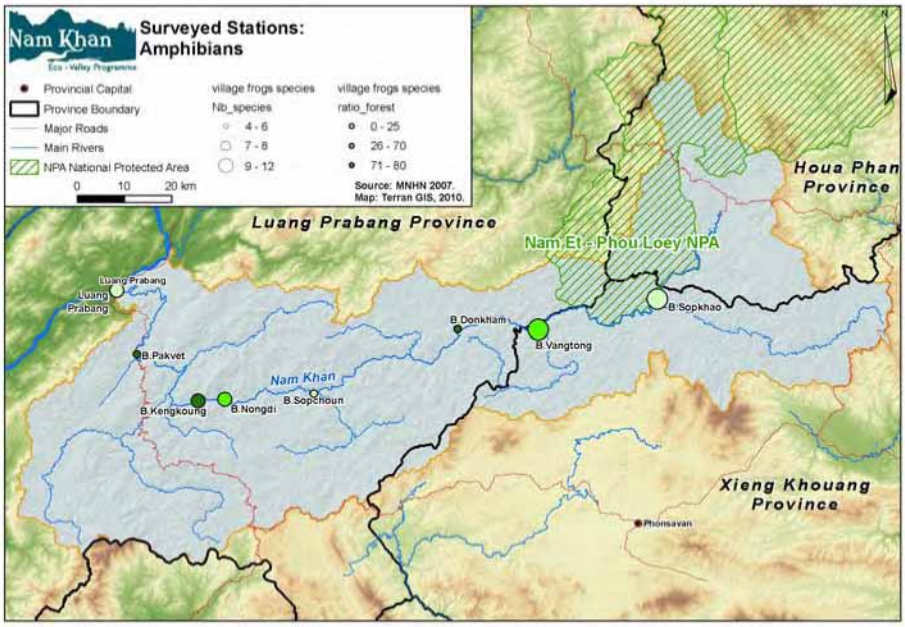
Knowledge Capitalization Workshop

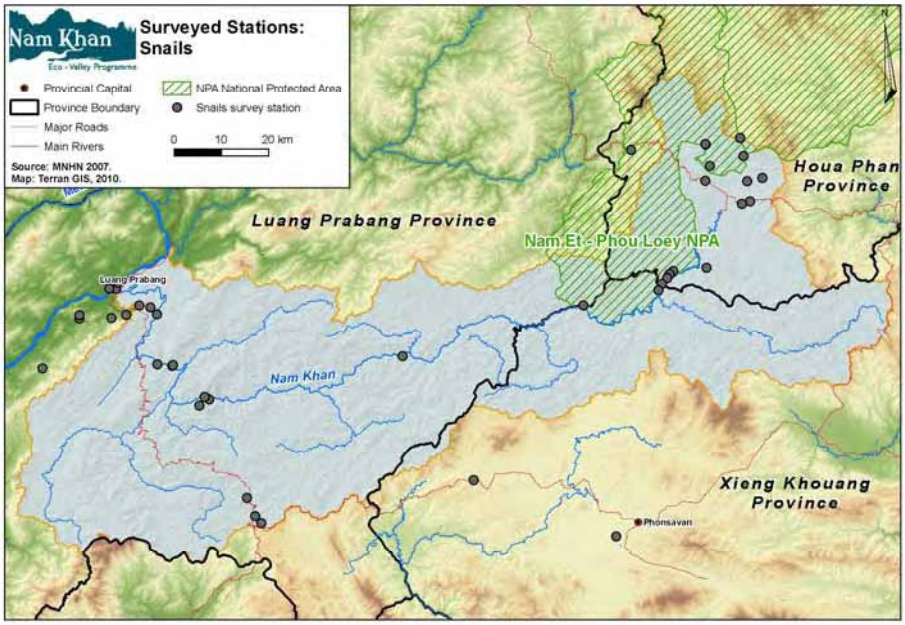
Luang Prabang – 4 – 5 February 2010

Studies and actions

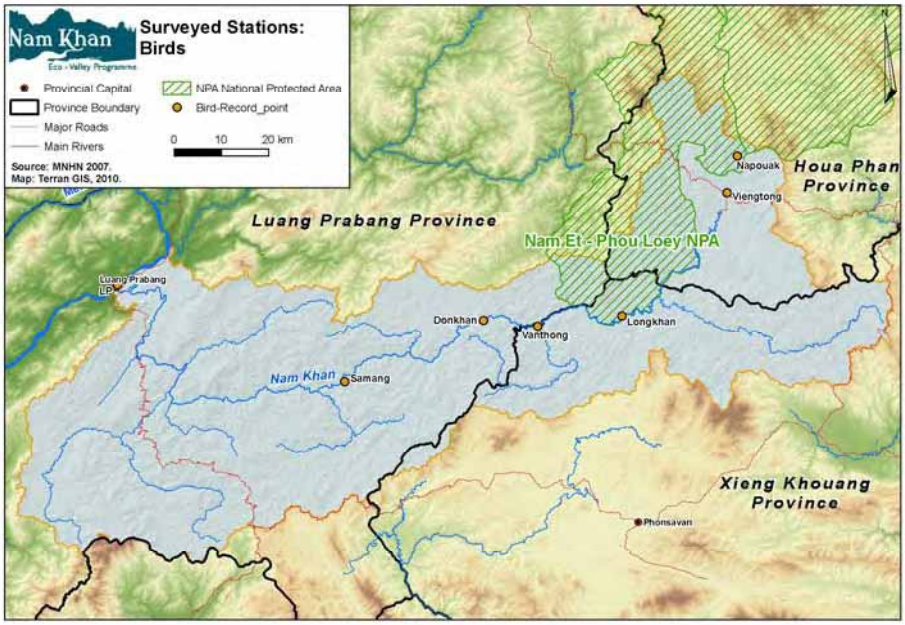
Supported by the Eco-Valley Programme

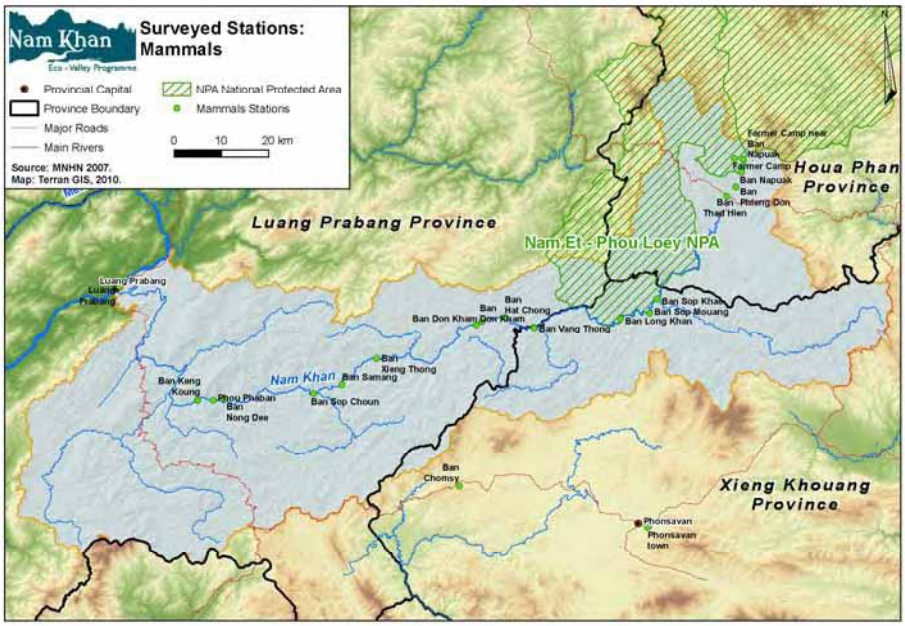
Supported by others organizations

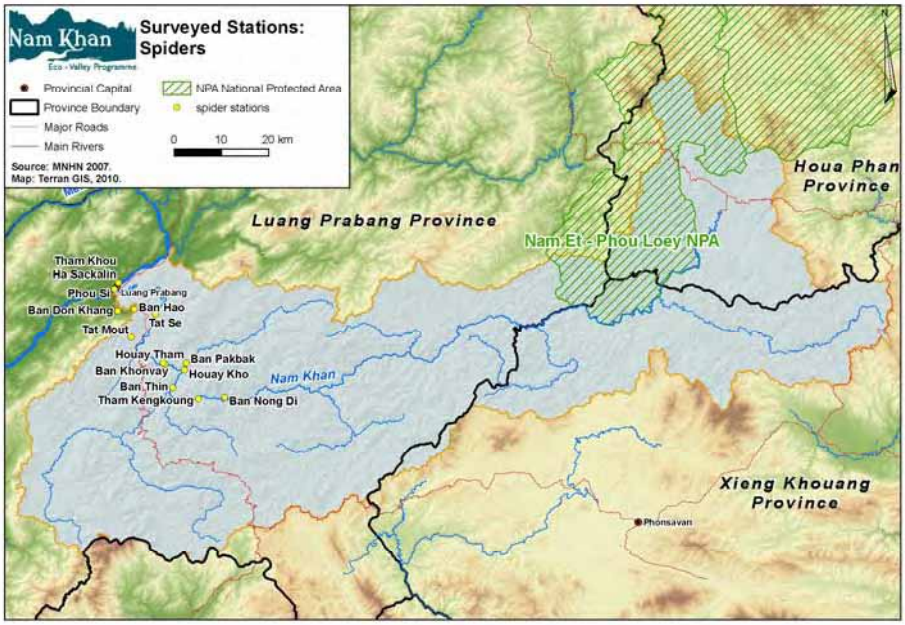


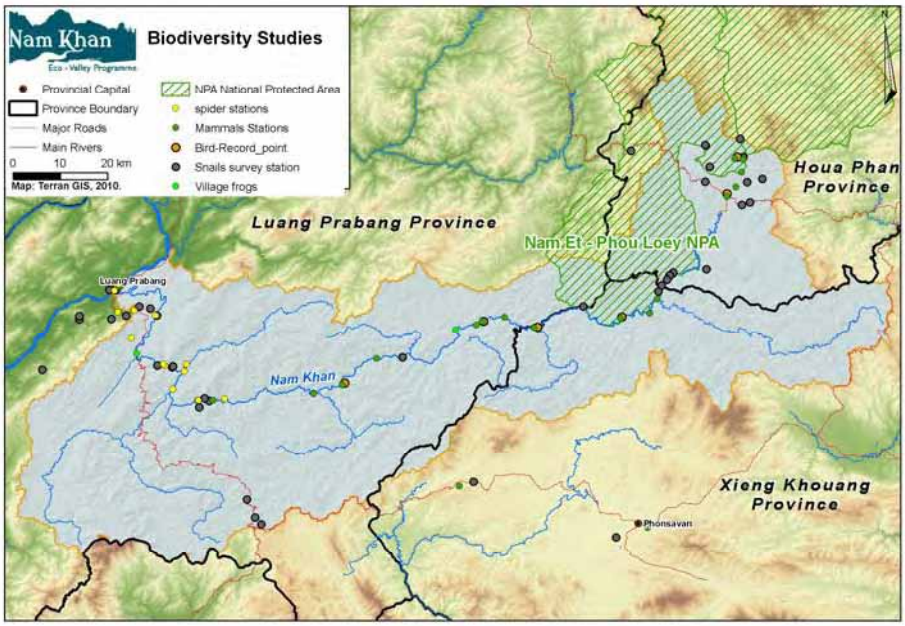

Nam Khan
Eco - Valley Programme
Surveyed Stations:
Snails
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Snails survey station
0 10 20 km
Source: MNHN 2007.
Map: Terran GIS, 2010.
Luang Prabang Province
Houa Phan Province
Nam Et - Phou Loey NPA
Luang Prabang
Nam Khan
Xieng Khouang Province
Phonsavan

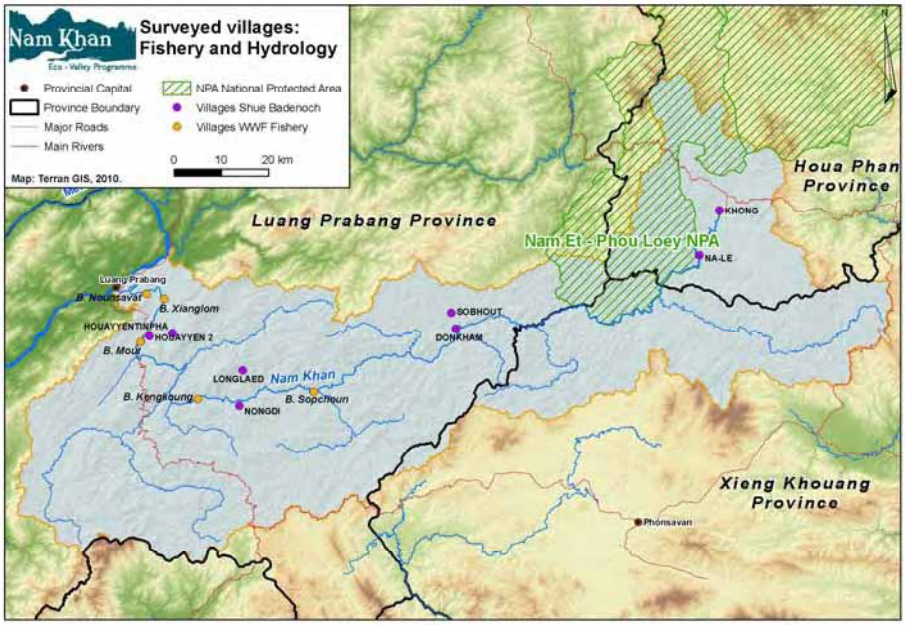

Nam Khan
Eco - Valley Programme
Target Areas
for Gastropoda Conservation
Provincial Capital
Major Roads
Hydrology
Province Boundary
National Protected Area (NPA)
Conservation zones for Gastropoda
Limestone Area
Non Limestone Area
0 10 20 km
Source: MNHN, April 2007.
Map: Terran GIS, 2010.
Luang Prabang Province
Houa Phan Province
Nam Et - Phou Loey NPA
Zone 6
Zone 7
Zone 5
Luang Prabang
Zone 1
Zone 2
Zone 3
Zone 3
Xieng Khouang Province
Phonsavan

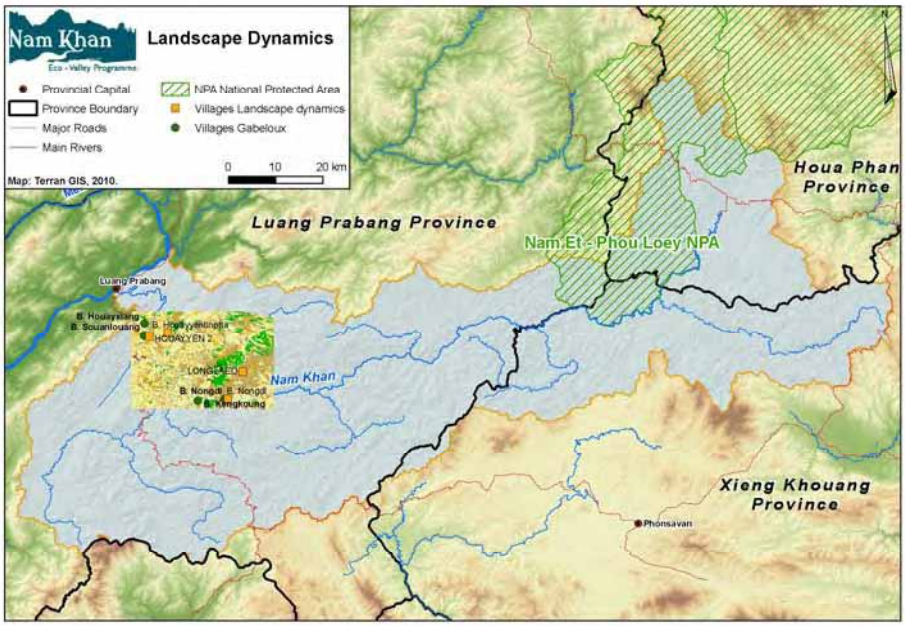

Nam Khan
Eco - Valley Programme
Surveyed Stations:
Birds
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Bird-Record_point
0 10 20 km
Source: MNHN 2007.
Map: Terran GIS, 2010.
N
Napouak
Viengtong
Houa Phan
Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
Donkhan
Vanthong
Longkhan
Nam Khan
Samang
Xieng Khouang
Province
Phonsavan

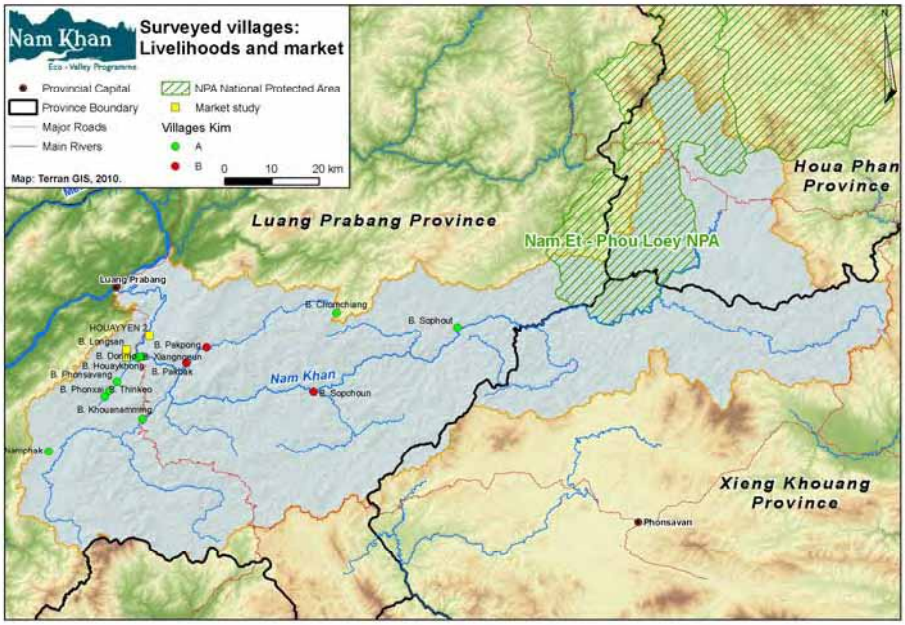

Nam Khan
Eco - Valley Programme
Surveyed Stations:
Mammals
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Mammals Stations
0 10 20 km
Source: MNHN 2007.
Map: Terran GIS, 2010.
N
Farmer Camp near Ban Napouak
Farmer Camp
Houa Phan
Province
Ban Napouak
Ban Phieng Don
Thad Hien
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
Luang Prabang
Ban Hat Chong
Ban Don Khan
Ban Don Khan
Ban Sop Khan
Ban Sop Mouang
Ban Long Khan
Ban Vang Thong
Ban Xieng Thong
Ban Kang Koung
Nam Khan
Ban Samang
Phou Phaban
Ban Nong Dee
Ban Sop Choun
Ban Chomsy
Xieng Khouang
Province
Phonsavan
Phonsavan town

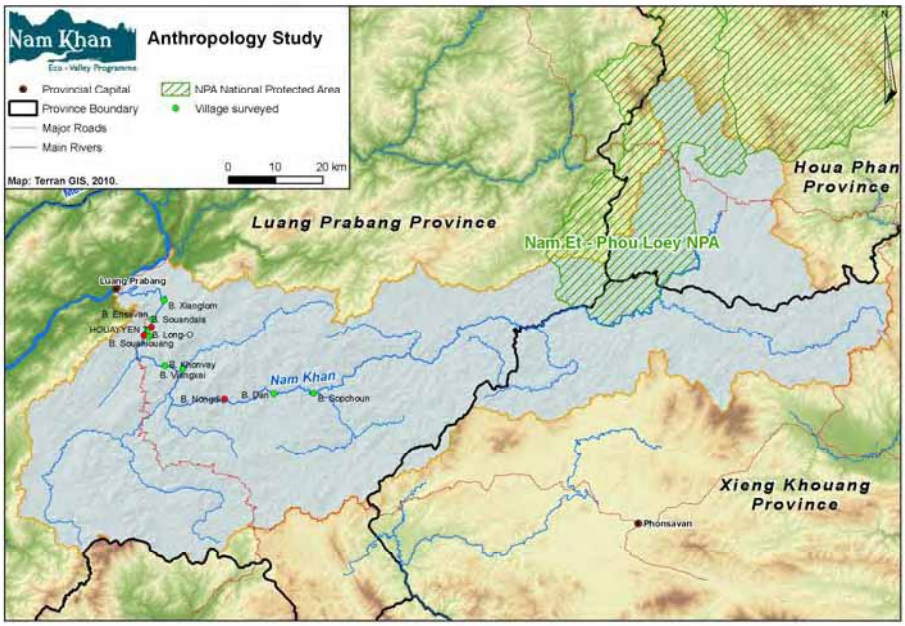

Nam Khan
Eco - Valley Programme
Surveyed Stations:
Spiders
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
spider stations
0 10 20 km
Source: MNHN 2007.
Map: Terran GIS, 2010.
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Tham Khou
Ha Sackalin
Phou Si
Luang Prabang
Ban Don Khang
Ban Hao
Tat Se
Tat Mout
Houay Tham
Ban Pakbak
Ban Khonvay
Houay Kho
Nam Khan
Ban Thin
Tham Kengkoung
Ban Nong Di
Xieng Khouang Province
Phonsavan

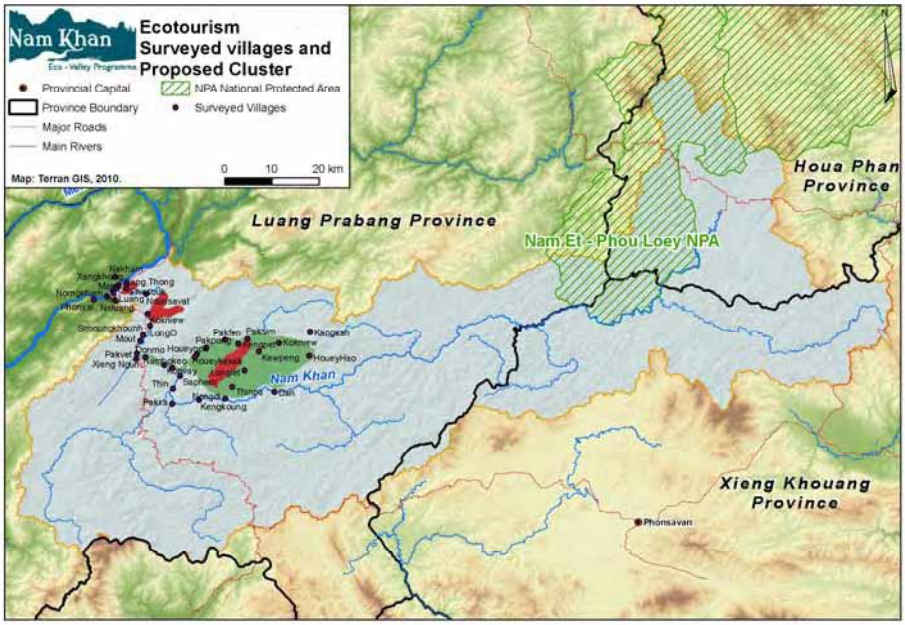

Nam Khan
Eco - Valley Programme
Biodiversity Studies
Provincial Capital
Province Boundary
Major Roads
Main Rivers
0 10 20 km
Map: Terran GIS, 2010.
NPA National Protected Area
spider stations
Mammals Stations
Bird-Record_point
Snails survey station
Village frogs
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
Nam Khan
Xieng Khouang Province
Phonsavan

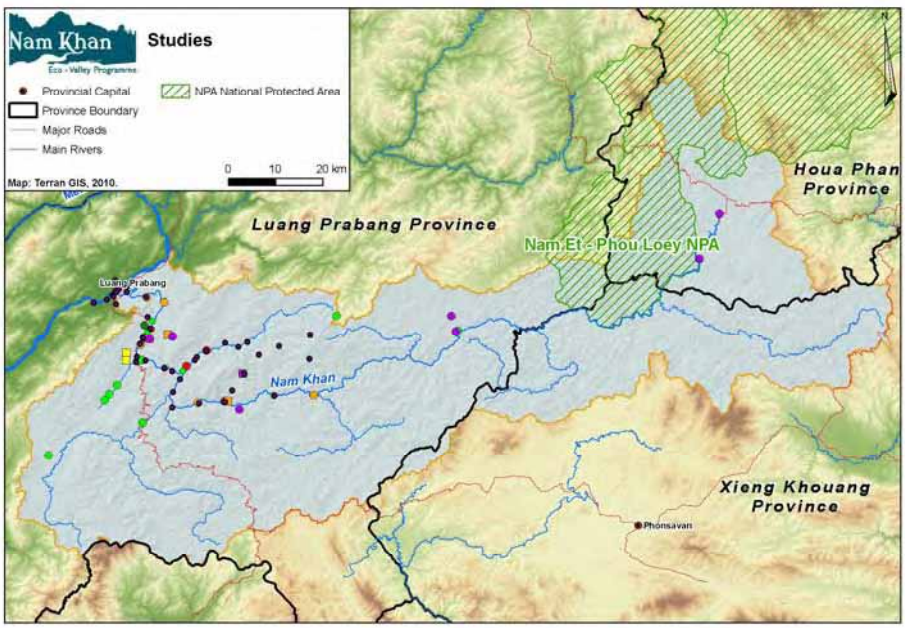

Nam Khan
Eco - Valley Programme
Surveyed villages:
Fishery and Hydrology
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Villages Shue Badenoch
Villages WWF Fishery
0 10 20 km
Map: Terran GIS, 2010.
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
KHONG
NA-LE
SOBHOUT
DONKHAM
Luang Prabang
B. Nounsavat
B. Xianglom
HOUAYYENTINPHA
HOUAYYEN 2
B. Mour
LONGLAED
Nam Khan
B. Kengkoung
B. Sopchoun
NONGDI
Xieng Khouang Province
Phonsavan

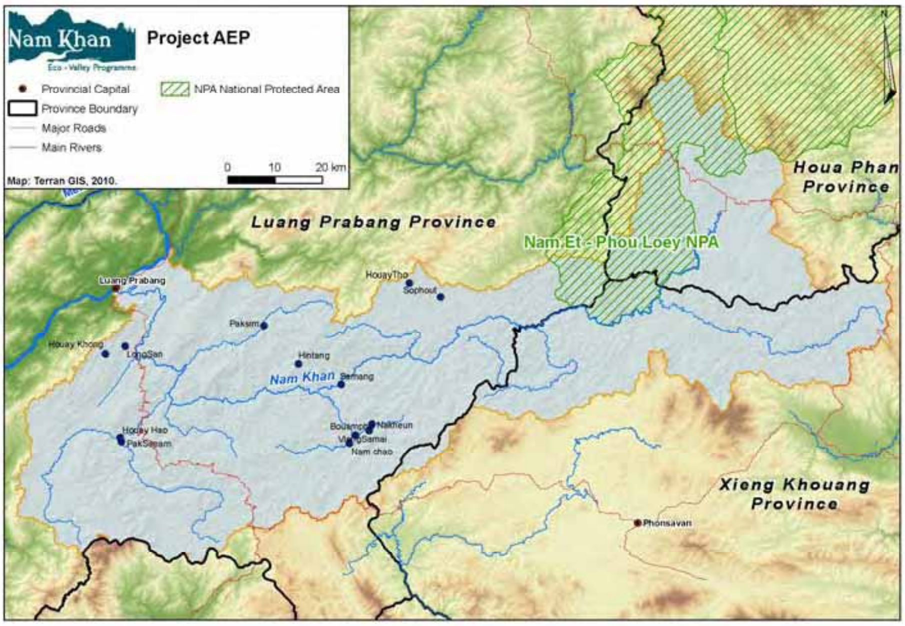

Nam Khan
Eco - Valley Programme
Landscape Dynamics
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Villages Landscape dynamics
Villages Gabeloux
0 10 20 km
Map: Terran GIS, 2010.
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
B. Houaysiang
B. Souanlouang
HOUAYYEN 2
LONGLAED
Nam Khan
B. Nongdi
B. Kengkoung
Xieng Khouang Province
Phonsavan

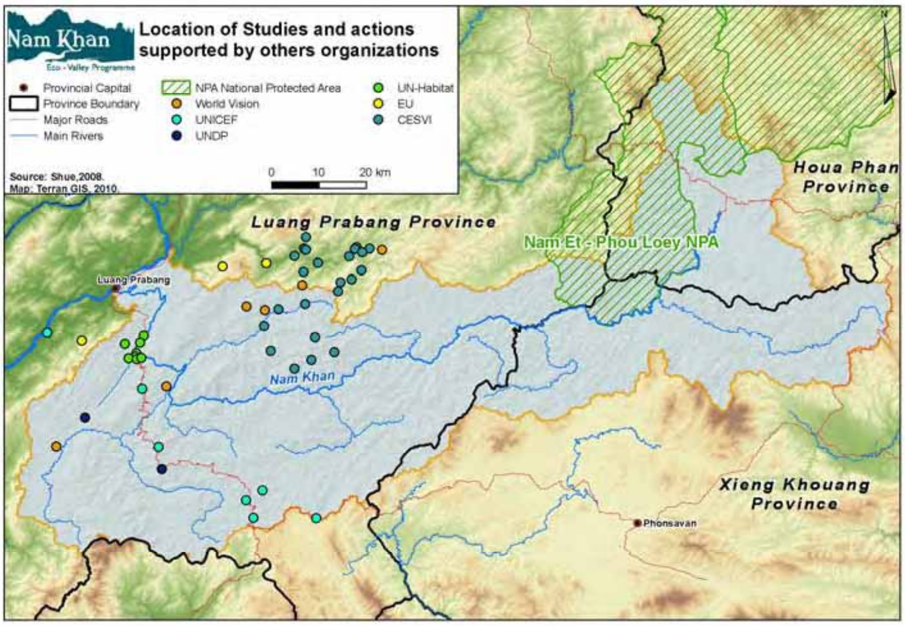

Nam Khan
Eco - Valley Programme
Surveyed villages:
Livelihoods and market
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Market study
Villages Kim
A
B
0 10 20 km
Map: Terran GIS, 2010.
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
B. Chomchiang
B. Sophout
HOUAYYEN
B. Longsan
B. Pakpong
B. Dorme
B. Xiangngeun
B. Houaykhong
B. Phonsavang
B. Phonxay
B. Thinkeo
B. Khouanamming
Nam Khan
B. Sopchoun
Xieng Khouang Province
Phonsavan

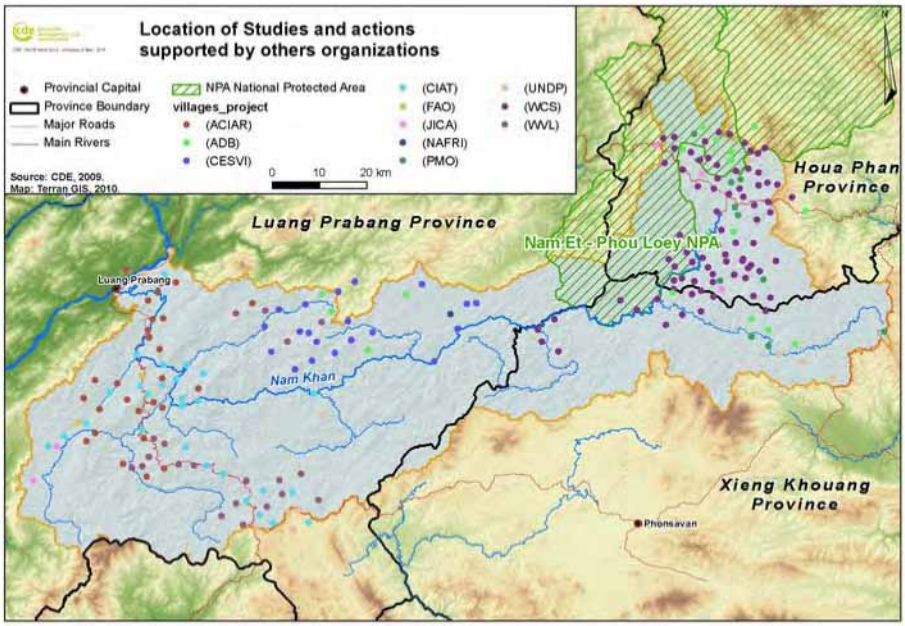

Nam Khan
Eco - Valley Programme
Anthropology Study
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Village surveyed
0 10 20 km
Map: Terran GIS, 2010.
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
B. Xianglom
B. Souandala
HOUAYYEN
B. Long-O
B. Souakhouang
B. Khonvay
B. Viangxai
B. Nongdi
B. Don
Nam Khan
B. Sopchoun
Xieng Khouang Province
Phonsavan

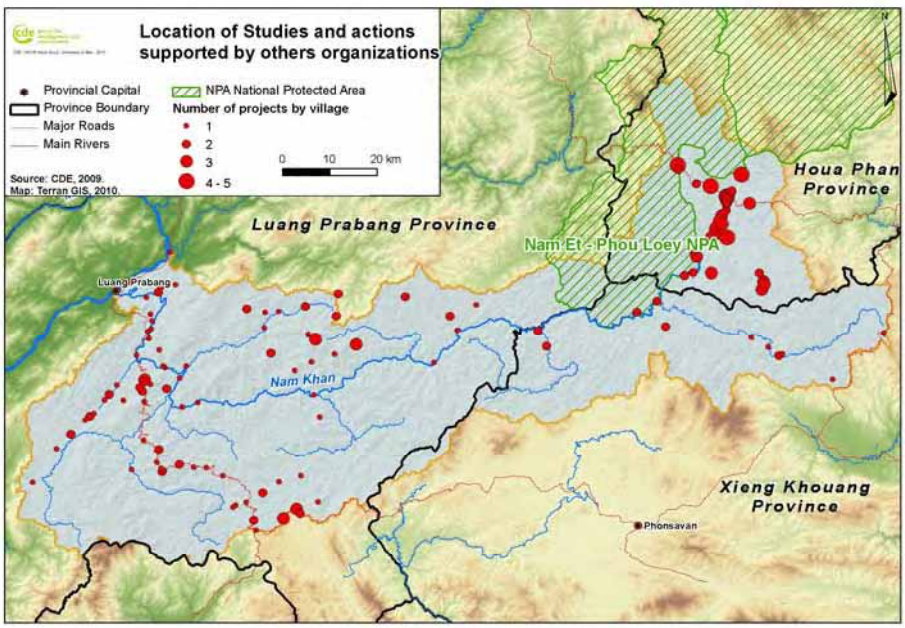

Nam Khan
Eco - Valley Programme
Ecotourism
Surveyed villages and
Proposed Cluster
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Surveyed Villages
Map: Terran GIS, 2010.
0 10 20 km
N
Houa Phan
Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Nam Khan
Xieng Khouang
Province
Phonsavan


Nam Khan
Eco - Valley Programme
Studies
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Map: Terran GIS, 2010.
0 10 20 km
N
Houa Phan
Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
Nam Khan
Xieng Khouang
Province
Phonsavan


Nam Khan
Eco - Valley Programme
Project AEP
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
0 10 20 km
Map: Terran GIS, 2010.
Luang Prabang Province
Houa Phan Province
Nam Et - Phou Loey NPA
Xieng Khouang Province
Luang Prabang
Phonsavan
Nam Khan


Nam Khan
Eco - Valley Programme
Location of Studies and actions supported by others organizations
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
World Vision
UNICEF
UNDP
UN-Habitat
EU
CESVI
Source: Shue,2008.
Map: Terran GIS, 2010.
0 10 20 km
Luang Prabang Province
Houa Phan Province
Nam Et - Phou Loey NPA
Xieng Khouang Province
Luang Prabang
Phonsavan
Nam Khan


Location of Studies and actions supported by others organizations
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
villages_project
(ACIAR)
(ADB)
(CESVI)
(CIAT)
(FAO)
(JICA)
(NAFRI)
(PMO)
(UNDP)
(WCS)
(WVL)
0 10 20 km
Source: CDE, 2009.
Map: Terran GIS, 2010.
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
Nam Khan
Xieng Khouang Province
Phonsavan


Location of Studies and actions supported by others organizations
Provincial Capital
Province Boundary
Major Roads
Main Rivers
NPA National Protected Area
Number of projects by village
1
2
3
4 - 5
0 10 20 km
Source: CDE, 2009.
Map: Terran GIS, 2010.
Houa Phan Province
Luang Prabang Province
Nam Et - Phou Loey NPA
Luang Prabang
Nam Khan
Xieng Khouang Province
Phonsavan

Nam Khan

Knowledge Capitalization Workshop

Luang Prabang – 4 – 5 February 2010

Observations

Regarding the area of interest of these different studies and projects, what can we observe ?

Most of the project focuses on upstream and downstream Nam Khan watershed.

Project which focus on the same area are not related to each other

Nam Khan

Knowledge Capitalization Workshop

Luang Prabang – 4 – 5 February 2010

Questions

From these observations, some questions arise for the future management of the Nam Khan area:

-Which area to focus in priority ?

-Which thematic or knowledge should be now studied?

-Which cooperation could be implemented?

-Are there any studies or project to arise in the next future?

Preserving the Natural and Cultural Heritage of the Nam Khan Watershed

Nam Khan

Eco - Valley Programme

Appendix 7

Study Information Sheets

01. Feasibility study for ecotourism in the Nam Khan watershed (Chatenet M., Moizo B., 2005)
02. Capture Fisheries and Freshwater Biodiversity in the Livelihoods and Culture of the Nam Khan (Mollot R., 2005)
03. Amphibians of the Nam Khan (Ohler A.M., Grosjean S., 2006)
04. Birds of the Nam Khan Watershed (Fuchs J., 2007)
05. Terrestrial Moluscs (Gastropoda) in Nam Khan area (Muratov I.V., Abdou A., 2007)
06. Mammals of the Nam Khan Watershed (Hassanin A., 2007)
07. Spiders of the Nam Khan Valley from Laos (Arachnida: Araneae) (Jäger P., Pathoumthong B., Vedel V., Altmann J., 2007)
08. Aquatic Resource Scoping Mission Report (Friend P., 2007)
09. Typology of landscapes and ecosystems in the Nam Khan valley, Lao PDR. Feasibility study for a biosphere reserve. (Bourjot L., Dobremez J.F., 2007)
10. An environment under constraints. Evolving relations between ethnic groups and their changing natural environment. (Guemas M., Moizo B., Bouchery P., 2007)
11. Dynamics of natural resources management in the Nam Khan watershed (Gabeloux M., Julien P., 2007)
12. Characterization of Nam khan watershed and sub-watersheds (Boissavi D., 2008)
13. Drivers of land use change in the Nam Khan watershed (Sany J.P., Castella J.C., 2008)
14. Impacts of landscape dynamics on biodiversity and natural resource uses in the Nam Khan the watershed (Cherief M., Keophosay A. Nanthavong K., Castella J.C., 2008)
15. Information, institutions and inequity: the case of the Nam Khan watershed (Shue R., Badenoch N., 2009)
16. Characterization of the fisheries of the Nam Khan river (Valverde L., Cacot P., Thammavong P., Phonekhampheng O., 2009)
17. Farmers' strategies and market opportunities in Nam Khan eco-valley (Moustier P., Sacklokham S., Manivong P., Yang F., Mahavang K., 2009)
18. Finding homogeneity in heterogeneity—A new approach to quantifying landscape mosaics developed for the Lao PDR, Swiss National Centre of Competence in Research (NCCR) - Messerli P., Heinimann A., Epprecht M., 2009)

Nam Khan Eco-Valley database
Code: JC3

Date or period: 2005

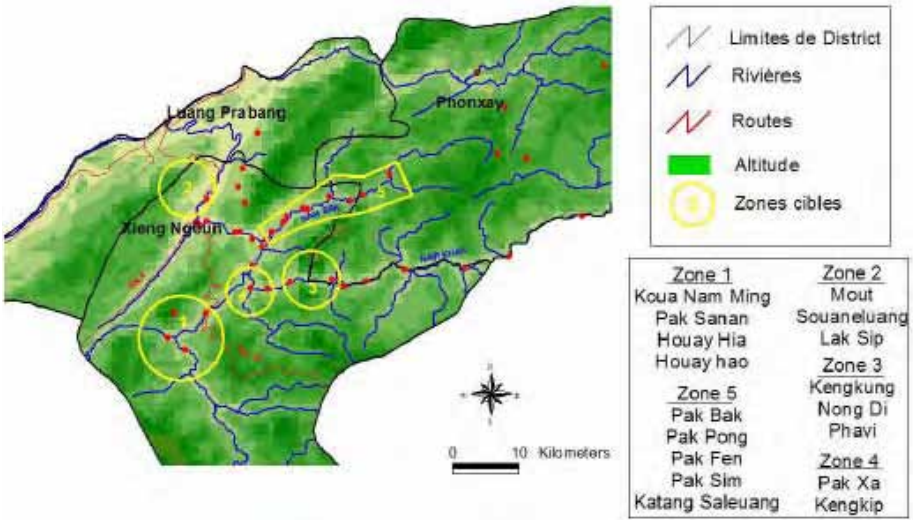
Title:
Feasibility study for ecotourism in the Nam Khan watershed

Authors:
Mathieu Chatenet
Bernard Moizo
Contact e-mail:
matchatenet@hotmail.com
bernard.moizo@ird.fr

Organizations:
Université Lille 3, Institut de Recherche pour le Développement (IRD)

Key words:
Ecotourism, communities

Project location or area of interest:



Summary:

The demand of eco-tourism products is important in all Lao PDR, especially in rural areas which concentrate natural and cultural heritage such as the Nam Khan watershed. Sustainable tourism would benefit the local communities and vulnerable groups by generating additional incomes and creating new sources of employment (e.g. the building and maintenance of small infrastructure and the seasonal rebuilding of walking trails and footbridges) and improve local livelihoods (though the revenues generated and – to some extent – the improvement in local facilities).

Except from few tours operators, tourism is not developed on the Nam Khan valley. Access and accommodation are very limited, and benefits from eco-tourism activities don't go back to local communities or are concentrated in village leadership's hands: villagers are not involved in hospitality services (accommodation in village chief house, food from the city…) and in high season, tourist trips can exceed the social and environmental limits of acceptable charge as determined by researchers in cooperation with local residents.

When local people do work in the tourism industry, a lack of skills and understanding of tourism is causing most of them to remain stuck in low-paying jobs such as day-workers and cleaners that miss out on higher paying tourism-related employment opportunities such as guides and small-scale business managers.

Sustainable tourism management and development is considered critical to keep the balance between rural an urban areas while achieving poverty reduction, socio-economic development and conservation/enhancement of natural and cultural resources in and around Luang Prabang.

Illustrations:



Nam Khan ressource database
Project code : HYD_fishery

Date or period :
October 2005

Title :
Capture Fisheries and Freshwater Biodiversity in the Livelihoods and Culture of the Nam Khan

Author :
Roger Mollot
Email: roger.mollot@wwflaos.org

Organization :

WWF Lao Program

Key words :
Hydrology, Fishery

Project location or area of interest :

Summary :
Capture fisheries in the Mekong Basin represents one of the most important commercial and subsistence activities in support of rural livelihoods and food security. The highly productive capture fisheries of the Mekong Basin is largely composed of migratory fish stocks.
These seasonal fish migrations involve both longitudinal migrations along river channels and lateral migrations onto seasonally flooded habitat. For communities along the Nam Khan capture fisheries are an important household activity with high participation from all family members. In all target villages people explained how every member of a household, including women and children, is involved in the fishery.
It is through fishing activities that the link between rural livelihoods and biodiversity is most evident. Being largely a subsistence fishery it is dominated by the use of small-scale gear that target a wide range of freshwater biodiversity, including fish, molluscs, crustaceans and aquatic plants, across a diverse set of freshwater habitats. Any loss in freshwater biodiversity therefore could have an impact on rural livelihoods and household participation in capture fisheries.
Traditional management systems have revolved around community management of important fisheries habitat such as deep pools in the river channel. Deep pools have long been recognized by local fishers for their important ecological role in the fishery. Deep pool habitat serves as important dry season refuge areas and spawning grounds for many of the fish species that support rural livelihoods.
Threats to the freshwater biodiversity of the Nam Khan arise from environmental degradation and fishing pressure. Many of these threats to environmental health come from outside of the fishery sector, such as land conversion for agriculture, logging, and road infrastructure.
Local fishers believe that increased fishing pressure using modern gear that is more efficient is becoming a problem. Population increase within the catchment as well as improved access to markets has led to more pressure on the fishery. Certain migratory fish species, particularly Pangasid catfish, are becoming increasingly rare.

Illustration

Nam Khan ressource database

Project code :BIO_MAB_frogs

Keywords :
biodiversity, amphibians

Title :

Amphibians of the Nam Khan

Author :
Anne Marie Ohler
Stéphane Grosjean

Email: Peter.Jaeger@Senckenberg.de

Organization :
Muséum National d'Histoires Naturelles

Date or period :
July August 2006

Project location or area of interest :
Luang Prabang, Dongkhan, Kengkoung, Nongdi, Pakvet, Sopchoun, Sopkhao, Vangthong

Summary :
Amphibiens are a good indicator of the conservation of the environment. The two populations, Lao and Khmu have have been surveyed and have different ways to use amphibians.

21 species have been identified. Most of the species are commonly present in South-East Asia. Half of the species are forest species.
In Luang Prabang no forest species have been found due to urban environment.
In Donkham, Kengkoung and Pakvet, forest species are the most represented between 71 and 80%. However these locations do not display much diversity.
The total amount of observed species is not important due to the short period of the study. Thus the whole fauna diversity might be under-estimated.

Village	Nb of observed species	ratio_forest species%
B.Pakvet	5	80
B.Nongdi	7	28
B.Kengkoung	7	71
B.Sopchoun	6	0
B.Vangtong	12	33
B.Sopkhao	9	11
B.Donkham	4	75
Luang Prabang	8	0

Nam Khan ressource database
Project code :BIO_MAB_Birds

Key words :
Ornithology
Biodiversity

Title :
Birds of the Nam Khan Watershed
Nam Khan Eco-valley, candidate to the MAB – UNESCO program.

Author :
Jérôme Fuchs
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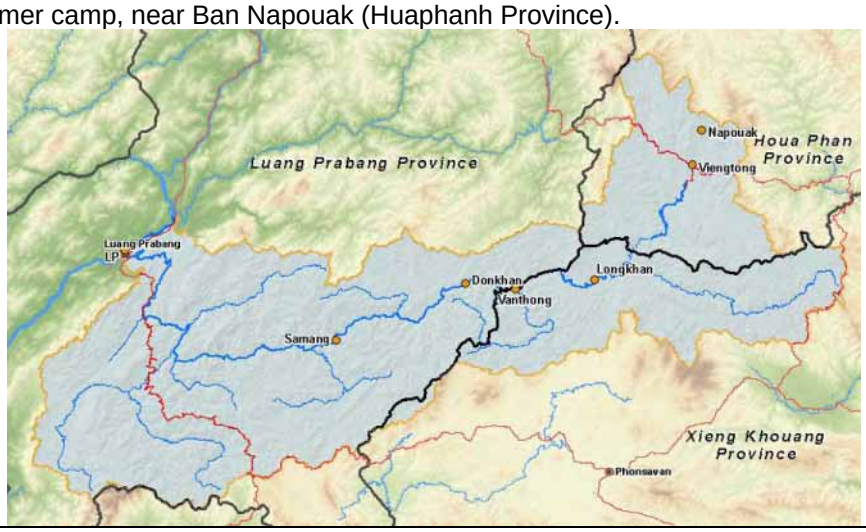
Organization :
National Museum of Natural History
Département Systématique et Evolution, UMR5202
Origine, Structure et Evolution de la Biodiversité, BP 51, 55 Rue Buffon, 75231 Paris
Cedex 05, France

Date or period :
January 2007

Project location or area of interest :
Ban Donkham (Luang Prabang Province)
Ban Long Khan (Xiengkhouang Province)
Ban Viengtong (Huaphanh Province
Farmer camp, near Ban Napouak (Huaphanh Province).



Summary :
Aim of the inventory :
Bird inventory in different localities of the Nam Khan valley reflecting different types of ecosystems including those issued from human activities.

Birds ecological value :
The bird biodiversity contributes to the ecosystems functioning, as an essential part of the trophic chain, but also through their role in anti-parasite struggle, seed propagation,
Through their role, their visibility, their wide spread territory etc. birds are important indicators of the ecosystems health.

Methodology :
Bird biodiversity was assessed using up to ten 6-12m mist-nets. Nets were placed in various locations, i.e., near fruiting trees, near streams, at natural breaks in the vegetation and along ridge tops, in order to maximize the number of species trapped. Birds were also sexed, when possible, and weighted. Blood samples were taken from the brachial vein for further genetic analyses and digital vouchers were taken from all species that were mist-netted. Direct observations using binoculars were also made throughout the inventory period

Results :
A total of 111 taxa were detected during the 22 days of the inventory period. 9 species were recorded in Luang Prabang, 39 species along the Nam Khan river, 33 species from Ban Donkham, 33 species from Ban Long Khan, 11 species during the transit from Luang Prabang to Ban Viengtong, 24 species from Ban Viengong and 59 species from the camp site near BanNapouak (Table 1).
A total of 30 species were mist-netted. Among them, only 13 species were also observed, suggesting that 17 species would have been overlooked if not nets were used.

Illustrations :

Nam Khan
Eco - Valley Programme

Nam Khan ressource database

Project code :BIO_MAB_snails

Keywords :
biodiversity, gastropoda

Title :

Terrestrial Moluscs (Gastropoda) in Nam Khan area

Author :
Igor V.Muratov
Ahmed Abdou

Organization :
Muséum National d'Histoires Naturelles

Date or period :
Survey:October-November 2006
Report: April 2007

Project location or area of interest :
43 stations

Summary :
A total of 153 species have been recognised from Nam Khan watershed and adjacent regions of Luang Prabang and Xieng Khouang provinces as a result of preliminary identification of terrestrial molluscs collected in north-central Laos in October-November 2006. Despite very scarce and mostly outdated literature on terrestrial molluscs of Laos, China, Myanmar, Thailand, Cambodia and Vietnam, we were able to identify 59 species and to document distribution of all recognised species within the area of study. Although not much of the original forest cover remains and deforestation continues, many snails survive in remote refuges usually on steep mountain slopes. Fortunately, biodiversity in most of these refuges is high, since the steep slopes often formed as the result of limestone erosion, which provide the calcium carbonate for the shell construction and abundant shelters due to its porous structure.
There are five limestone areas:

1- Phou Xuang mountain 5 km SE of Luang Prabang;
2- left side of Nam Khan, 6 km E of Muang Xiang Ngeun;
3- left side of Nam Khan S of the rapids, 17-18 km SE of Muang Xiang Ngeun;
4- slopes near the cave just NE of Phou Khoun on the southern border of Luang Prabang province;
5- both sides of Nam Khan near the rapids NE of Nam Khan and Nam Khao confluence)

and two non-limestone areas:

6- upper reaches of Nam Khan tributaries 9-13 km NW
7- and 8 km NE of Vieng Thong in Nam Khan watershed

These seven stations sampling resulted in more than 30 species in limestone areas and more than 20 species in non limestone areas. Therefore these seven areas should be considered as the primary targets for conservation.

Nam Khan ressource database
Project code :BIO_MAB_Mammals

Key words :
Ornithology
Biodiversity

Title :
Mammals of the Nam Khan Watershed
Nam Khan Eco-valley, candidate to the MAB – UNESCO program.

Author :

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Organization :
National Museum of Natural History
Département Systématique et Evolution, UMR5202
Origine, Structure et Evolution de la Biodiversité, BP 51, 55 Rue Buffon, 75231 Paris
Cedex 05, France

Date or period :
January February 2007

Project location or area of interest :

20 locations were surveyed

Summary :
The mammal survey was conducted using two different approaches: (1) the biodiversity of large- and medium-sized mammals was mainly assessed by village interviews; and (2) the biodiversity of small mammals was mainly assessed using traps and mist-nets, respectively for small terrestrial rodents and bats.

Mammal's biodiversity was assessed using various approaches: tracks, sight observations, trappings, and interview of villagers using pictures of the various species expected to be found in the northern region of Laos PDR.
A total of **71 mammal species** were recorded in the Nam Khan valley during this one-month survey.
Concerning the IUCN categories, two species are Endangered, sixteen are Vulnerable, one is Near Threatened, one is Least Concern, one is Data Deficient, and forty-eight are Lower Risk.
Forty-two mammal species were shown to occur on the basis of material evidence. Twelve species were detected in Phou Louey NBCA by camera trapping only (unpublished Lao report available in the Agricultural Administration of Phou Louey, Vieng Thong), and seventeen species were only reported by local people, and need therefore more convincing evidence.
The most interesting areas for mammal diversity include the forests in Phou Louey NBCA, and Phou Phaban, where the presence of many caves is a remarkable sanctuary for various species of bats.

Illustrations :

Rhinolophus paradoxolophus (Bourret, 1951)
Common Name: Bourret's Horseshoe Bat
IUCN Red List Category: VU
Distribution: Vietnam, Laos, and Thailand.
Habitat: poorly known; the specimen was found near a cave in a secondary forest.
Description: A large rhinolophine bat, with very large ears, and very large antitragal lobes, along with great expansion of internarial region of noseleaf into a broad, cup-like structure above anterior leaf. Sella is high and wide and obscures both the low connecting process and the low, rounded posterior noseleaf. The colour is brown above, and slightly paler below.
Material: One specimen was caught near a cave located near Ban Chomsy (28/01/2007).
Comment: The analyses of cytochrome *b* gene sequences suggest close affinities with *Rinolophus rex* (data not shown), as expected by the morphological data (Eger & Fenton, 2003).

Nam Khan ressource database

Project code :BIO_MAB_Spiders

Key words :
Taxonomy, biodiversity, spiders

Title :

Spiders of the Nam Khan Valley from Laos (Arachnida: Araneae)

Author :
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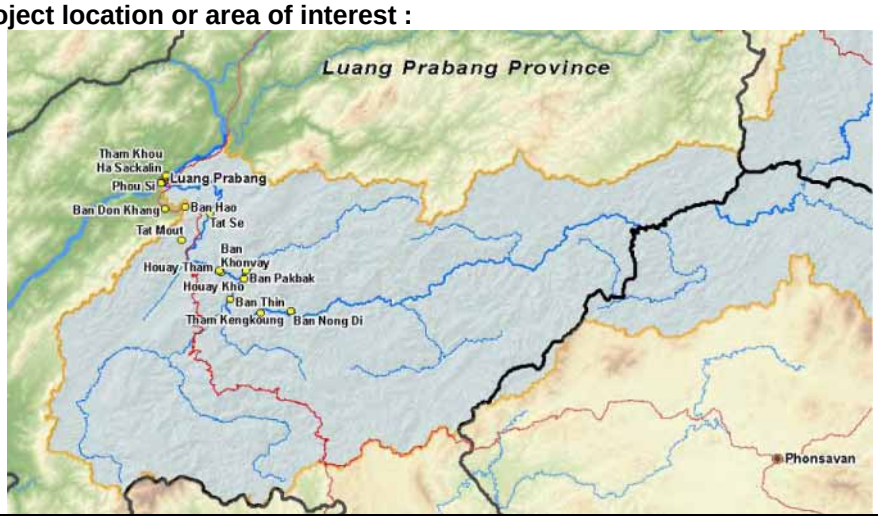
Bounnam Pathoumthong,
Vincent Vedel
Julia Altmann

Email: Peter.Jaeger@Senckenberg.de

Organization :
Biology Department, UNL
Arachnology, Research Institute Senckenberg, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany;

Date or period :
2006 february 2007

Project location or area of interest :



Summary :
A total of 39 spider species is reported from material collected from Nam Khan valley in Laos. Out of these, four species were described as new [Psechridae – *Psechrus luangprabang* spec. nov. (male, female), Zodariidae – *Storenomorpha anne* spec. nov. (male, female), Sparassidae – *Pseudopoda namkhan* Jäger, Pathoumthong & Vedel 2006 (male, female)] or are submitted [Caponiidae sp. (male)]. All four species seem to have a restricted distribution range and may be found exclusively in the Nam Khan valley. All records of identified material may be viewed at http://sesam.senckenberg.de/.

Records of Caponiidae, known from literature (Platnick 2006) and the new record for Asia in Laos (arrow) in the Nam Khan valley
Caponiidae Simon 1890
The first representatives (4 males, 1 juvenile) ever found in Asia were collected by sieving leaf litter in humid places close to streams or in front of limestone caves. Specimens of this two-eyed spider represent a new genus and species and will be treated in a separate paper together with Norman Platnick (AMNH, New York). May be Nam Khan valley represent a relict area for this old spider lineage. Closest representaives are found in USA, California (*Calponia harrisonfordi*) (Platnick, pers. comm.). Similar geographical patterns are known from other deep splits.

Pseudopoda namkhan, known only from the Nam Khan valley

Nam Khan Eco - Valley Programme	**Nam Khan ressource database** **Project code :HYD_fishery**
Date or period : July 2007	**Title :** Aquatic Resource Scoping Mission Report
Author : Peter Friend	**Project location or area of interest :** Whole Nam Khan watershed
Organization : WorlFish Center Greater Mekong Regional Office *Mail*: PO Box 1135, Phnom Penh, Cambodia *Office*: #35, Street 71 (Corner Mao Tse Tong / Monivong Blvd.), Phnom Penh *Tel*: +855 23 223 208; *Fax*: +855 23 223 209 *E-mail*: worldfish-cambodia@cgiar.org *Web*: www.worldfishcenter.org	
Key words : Hydrology, watershed	

Summary :

General Recommendations

• There is considerable potential for developing an aquatic resource project as part of the overall NKEVP. Fisheries are a fundamental component of the majority of rural livelihoods, and there is evidence of a reasonable diversity of aquatic resources and habitats.

• Changes in the fishery of the Nam Khan appear to have occurred within the recent past. This suggests that an aquatic resource project would be timely and if well designed would provide a mechanism to address these changes and drivers of change effectively.

• There is strong interest from all government partners in developing such a project. At the national level LARReC provides technical research capacity in fisheries and aquaculture and appropriate expertise. Additionally the Department of Livestock and Fisheries (DLF) is very supportive of such a project and provides an important link between province and national levels. This allows for the lessons learned from such a project to be effectively communicated up to senior decision makers within the Government of Lao. The DLF also provides the link to extension and management both of capture fisheries and aquaculture, rather than research. The institutional design of the project should therefore ensure appropriate roles for both DLF and LARReC.

• There is strong support in principle from the provincial and district levels in Luang Prabang. An important message coming out of these consultations is the need to ensure that project activities strengthen capacity of these local government agencies rather than merely the capacity of the project implementers (MDP, WorldFish, IWMI etc), and that information generated by the project is owned by the local government.

• Addressing watershed/river basin hydrological factors provides an opportunity to address aquatic resource management in a more holistic fashion, and thereby to address the policy priorities of the government and the key developmental challenges. IWMI has a long presence in the province and through its network is well placed to provide technical support and capacity building for provincial authorities. IWMI is also partnered with NAFRI – providing a clear link with LARReC. Under the partnership between IWMI and the WorldFish Center there is an interest in addressing aquatic resource management from a river basin perspective, and using such an approach as a mechanism for supporting government partners to make informed decisions about water management that address aquatic resource needs effectively. The formal partnership between the WorldFish Center and IWMI provides a mechanism for involvement of both institutions.

• The process of designing the project should ensure effective participation of all key stakeholders. This process can begin during the follow-up assessment mission. The mission itself provides an opportunity for testing approaches and for engaging representatives of the key partners in the field work and analysis, and using this experience to reflect on project design.

Nam Khan Eco-Valley database
Code : JC7

Date or period: 2007

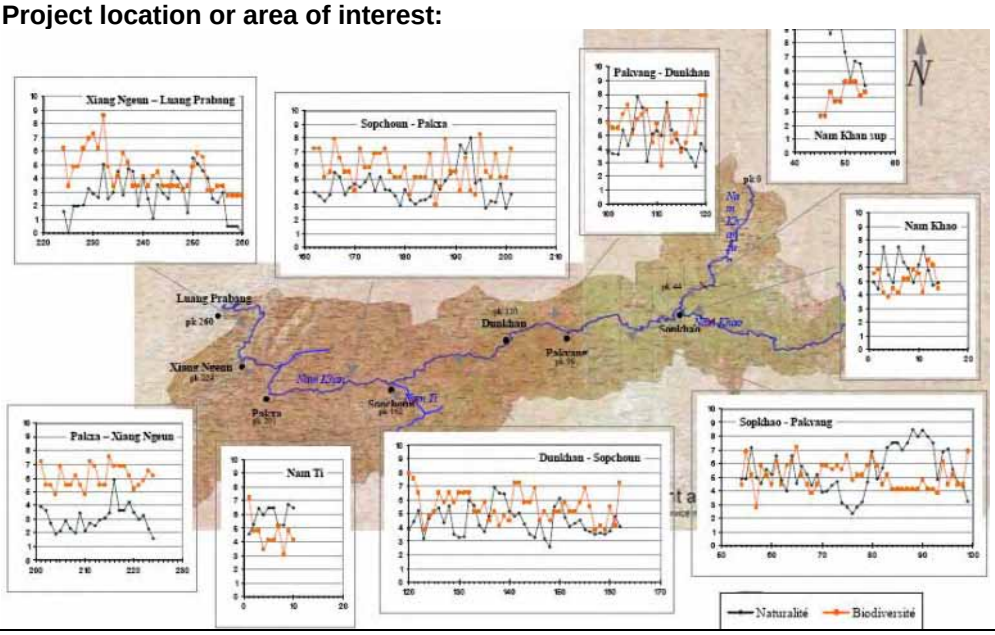
Title:
Typology of landscapes and ecosystems in the Nam Khan valley, Lao PDR. Feasibility study for a biosphere reserve.

Authors:
Laurence Bourjot
Jean François Dobremez

Organizations:
Bourjot Environnement

Key words:
Biogeography, natural and cultural heritage, biodiversity, environmental zoning, biosphere reserve

Project location or area of interest:



Summary:

In Northern Laos, Nam Khan watershed covers an area of 7.000 sq.km. Its debit is one of the highest of the Mekong tributaries. The conservation status of ecosystems and habitats, species diversity, quality of historical and cultural heritage, ecotourism development, growth of economic activities and exchanges were assessed with the objective of developing a biosphere reserve.

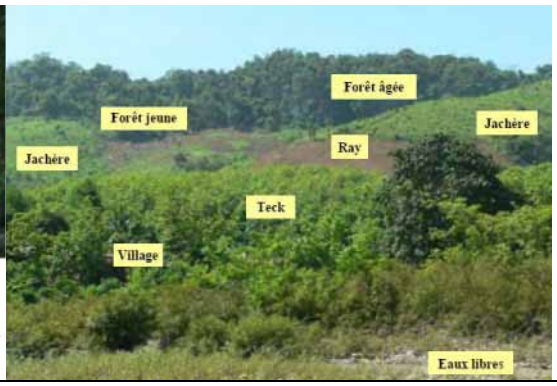
A typology of socio-ecosystems was developed and heritage value of each type was assessed. Because of the large size of the area under study (the whole catchment) and limited level of knowledge available, innovative methods were proposed as alternatives to traditional inventories. Field observations, interviews of villagers and recent SPOT satellite images were used in combination to describe the main land use systems.

From data collected it was possible to define the main biogeographic zones, to propose simple evolutionary model for the ecosystems, to assess the relative weight of land use management practices on three main landscape indicators: naturality, biodiversity, heritage value. These indicators can be used (i) to monitor the different landscape units identified and delineated through the study and (ii) to formulate recommendations about priority areas for conservation of endangered species and for more sustainable management of natural resources.

Illustrations:


Village de Sopkhao


Forêt âgée



Nam Khan Eco-Valley database
Code: JC4

Date or period: 2006-2007

Title:
An environment under constraints. Evolving relations between ethnic groups and their changing natural environment.

Authors:
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Bernard Moizo
Pascal Bouchery
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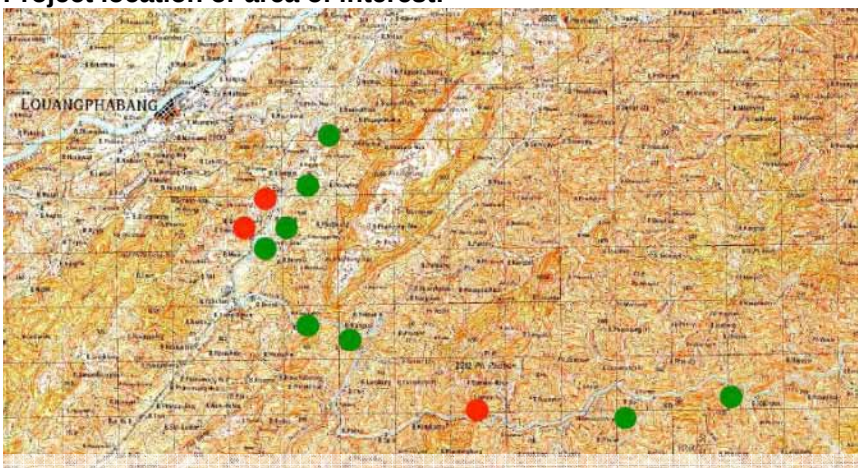
bernard.moizo@ird.fr

Organization:
Université de Poitiers, Institut de Recherche pour le Développement (IRD)

Key words:
Resettlement policies, acculturation, ethnic minorities, land use rights, natural resources management

Project location or area of interest:

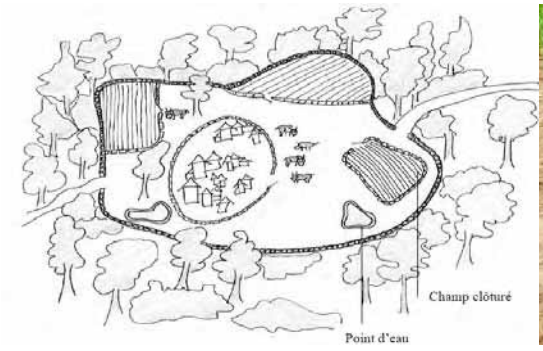


Red villages: SouanLuang, SouanDala, NongDi
Green villages: Aen, KhonVai, Sopchoun, VianSai, LongO, Dan, HueyHien, BounPho

Summary:

Changes in the relations of different ethnic groups (Khmu, Hmong and Lao Lum) with their natural environment were investigated in a context of resettlement and land degradation. The anthropological study shows how resource uses are constrained by beliefs, laws, redefinition of identities and ethnic frontiers. All these processes take place in a context of acculturation which tend to level the ethnic specificities towards an homogeneous model of development. Different groups are reinventing their cultures. Their emerging resource management practices can be interpreted as consequences of changing social interactions.

Illustrations:



Nam Khan Eco-Valley database
Code : JC5

Date or period: 2007

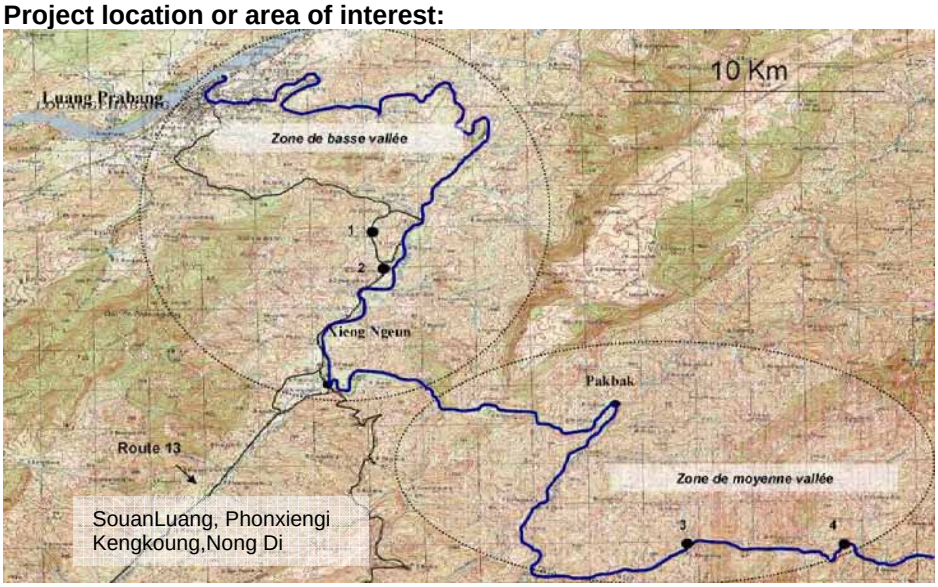
Title:
Dynamics of natural resources management in the Nam Khan watershed, Laos

Authors:
Marie Gabeloux
Patrick Julien

Organizations:
Université Montpellier 2

Key words:
Land use changes, resettlement, land allocation, shifting cultivation, accessibility, participatory mapping

Project location or area of interest:



Summary:

This study aims at understanding changes in natural resources management in relation with land degradation and market accessibility. Target villages were selected across a gradient of accessibility. Semi-structured surveys were used in combination with participatory mapping.

In all sites rice is still the cornerstone of the production systems but other activities have been developed to improve households' food sufficiency (NTFP, secondary crops grown in rice fields and small livestock) and generate cash income (jobs tears, posa, teak and large ruminant). In the lower part of the watershed demographic pressure on the land is very high and access to market and infrastructures allows to develop a large range of activities, including vegetable production and handicraft.

Land degradation and land tenure systems are key elements to understand household strategies to secure rice sufficiency. Adaptive strategies are gradually disconnected from natural resources as a result of their rapid degradation. In response to land tenure issues households in the lower part of the watershed invest in teak plantations to secure land rights. They develop a large range of activities in response to the market incentives – vegetable, fruit trees, etc. - but are constrained by land availability and quality. In more remote areas the environment is still preserved and traditional subsistence agriculture prevails under common management of upland resources.

Sustainability of these production systems should be addressed in a systemic way to tackle to trade-offs between natural resources preservation and economic development in response to increasing market opportunities.

Illustrations:



Nam Khan
Eco - Valley Programme

Nam Khan ressource database
Project code :HYD_nommo

Key words :
Hydrology, watershed

Title :
Characterization of Nam khan watershed and sub-watersheds

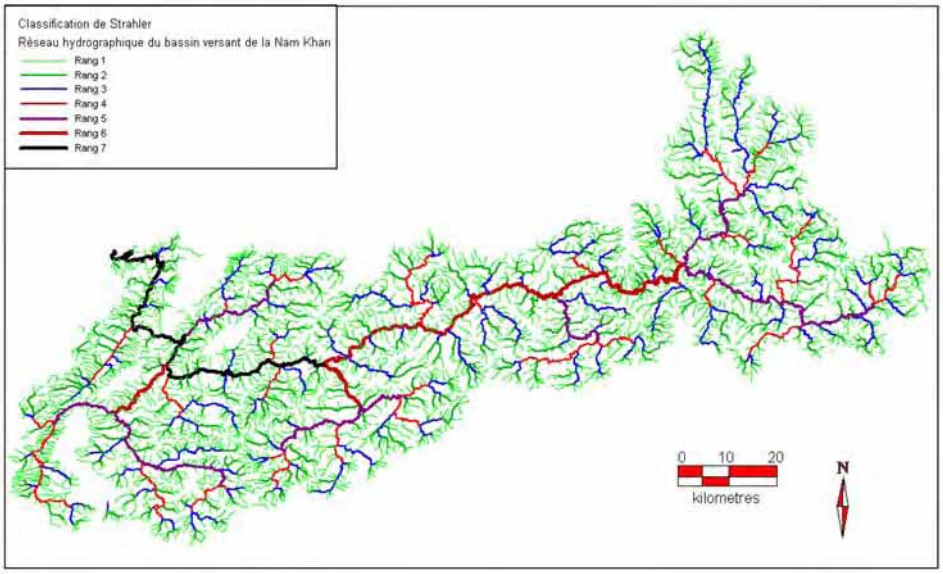
Author :

Didier Boissavi
Email: didier.boissavi@gmail.com

Organization :
Nommo-Limited
153/3, 4th Floor, Goldenland Building, Soi Mahardlekluang 1, Rajdamri Road, Lumpini, Phathumwan, BANGKOK 10330, THAILAND.

Date or period :
July 2008

Project location or area of interest :
Whole Nam Khan watershed



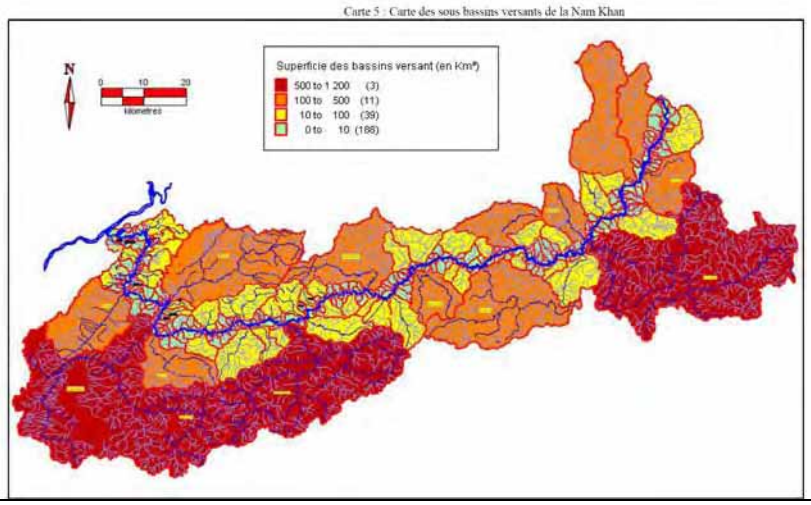
Summary :
Aim of the study :

- *to set up a mapping, using GIS, of the Nam Khan river and of its tributaries from available maps and data*

,

- *to determine and qualify the main sub catchments of the Nam Khan watershed*

Sub watershed	Area (Km²)	Perimeter (Km)	PK confluence	%
Nam Ming	1132.12	213.06	59.76	15.21
Nam Khao	998.18	211.67	207.9	13.41
Nam Thouang	749.2	156.38	100.8	10.06
Nam Bak	451.74	113.64	52.57	6.07
H. Hou	424.03	117.42	165.5	5.7
	305.46	106.06	238.4	4.1
Nam Niao	256.86	92.62	127.1	3.45
H. Khan	239.22	74.89	38.35	3.21
Nam Xa	157.63	65.2	62.61	2.12
	129.21	65.11	246.2	1.74
Nam Pao	126.04	54.26	241.4	1.69
	122.67	61.47	176.4	1.65
Nam Piat	112.6	52.7	145.1	1.51
Nam Hang	100.86	46.28	208	1.35
Total	5305.82	0	0	71.27



Nam Khan Eco-Valley database
Code : JC2

Date or period: 2008

Title:
Drivers of land use change in the Nam Khan watershed in northern Laos

Authors:
Jean-Pierre Sany
Jean-Christophe Castella
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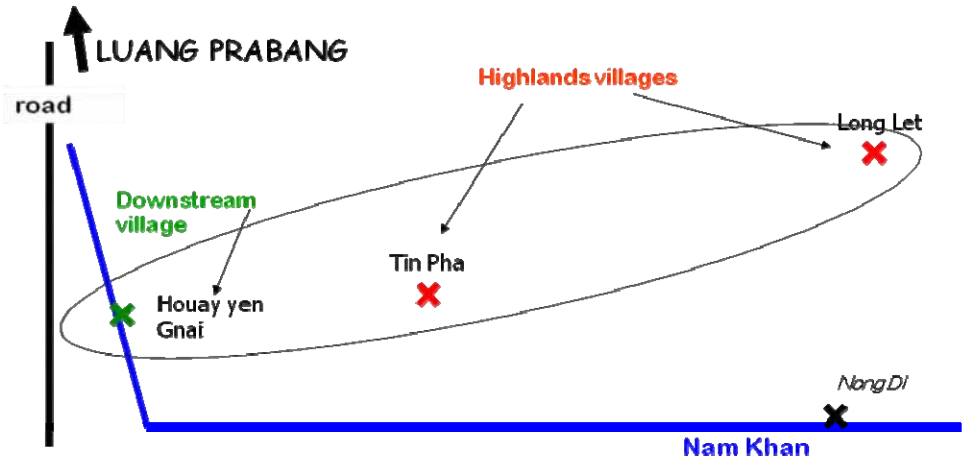
Organizations:
Catch-Up programme
(NAFRI-IRD-CIFOR)

Key words:
Land use changes, resettlement, land allocation, shifting cultivation, accessibility, participatory mapping

Project location or area of interest:



Summary:

For many years, Lao authorities take measures to stop shifting cultivation without proposing convincing alternative solutions. The recent opening of the country economy provides new opportunities for traditional subsistence farmers. Farmers have devised a large range of strategies for minimizing risks by diversifying their income sources. Indeed, the reduction in the fallow period has gradually increased environmental constraints and threatens the durability of traditional shifting cultivation systems. Alternatives area actively sought by all stakeholders.

This study is a contribution to the understanding of changes in landscapes and livelihoods in the Nam Khan watershed in northern Lao PDR. It is based on an analysis of the history of the target villages located along a gradient of accessibility along the lower part of the Nam Khan watershed. Participatory mapping has been combined with analysis of satellite imagery, secondary data and field surveys to explore three research hypotheses:

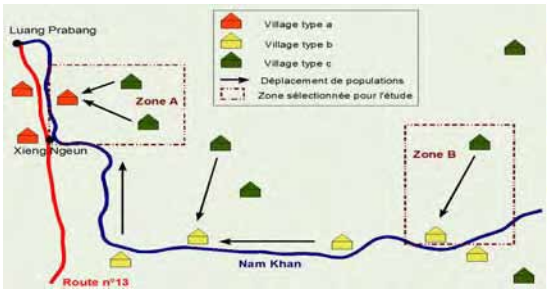
(i) forest regeneration in the remote areas is contrasted with the degradation of natural resources in the resettlement zones;

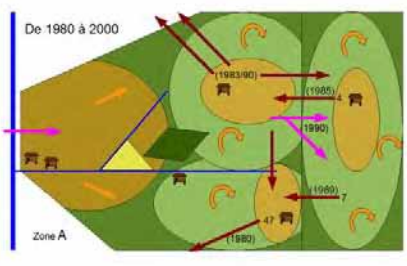
(ii) production systems are shifting their focus from optimizing return to labor towards return to land, due to the artificially induced shortage of available land (trough land use planning and resettlement);

(iii) flexibility and adaptability are key criterion for families wishing to change their income generating activities.

We developed a typology of farming systems ranging from those who mainly grow upland rice through 'slash and burn' practice, through people who develop annual cash crops and invest the proceeds in cattle, to those who stop growing rice and instead plant perennial crops like teak or paper mulberry. In an environment of economic globalization, all these changes require farmers to be constantly learning and adapting their practices with new species, cropping procedures and commercial networks.

Illustrations:





Nam Khan Eco-Valley database
JC1

Date or period: 2008

Title:
Impacts of landscape dynamics on biodiversity and natural resource uses in the Nam Khan the watershed, Laos

Authors:
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Anousith Keophosay
Khamla Nanthavong
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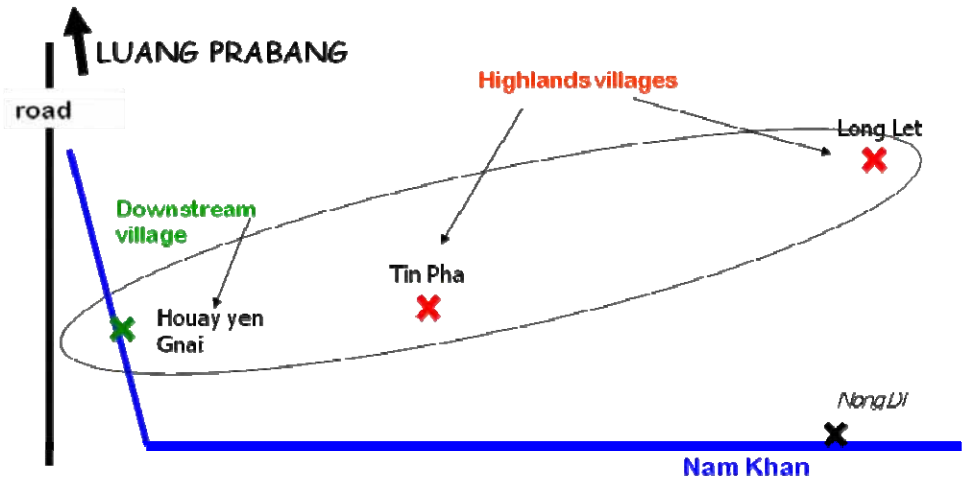
j.castella@ird.fr

Organizations:
Catch-Up programme
(NAFRI-IRD-CIFOR)

Key words:
Landscape mosaics, biodiversity, natural resources use

Project location or area of interest:



Summary:

The Nam Khan Watershed offers a wide variety of landscapes that changed at a rapid pace over the last decade. Landscapes of downstream villages, characterized by their proximity to Luang Prabang city and the market are strongly influenced by emerging economic opportunities, in contrast, the remote upstream areas are still characterized by sustainable shifting cultivation systems.

Aerial pictures, satellite images and field observations were analyzed in combination to characterize landscapes structure, heterogeneity, fragmentation – as well as changes in this indicators over time through chronological maps and interviews of local farmers. Floristic inventories were performed to assess biodiversity and soil samples were collected to assess carbon content along a gradient of agricultural intensification. Indexes of the abundance of species with ecological functions and those with economic functions for local stakeholders were used to evaluate landscape « quality » in terms of economic value and biodiversity conservation. Multivariate analysis has been used to characterize agricultural landscapes depending on floristic biodiversity and their economic function for local stakeholders.

The study showed a significant difference in landscape structure and dynamics, biodiversity and local use strategies between the Nam Khan downstream and upstream areas. Forest cover and diversity (heterogeneity) decreases with market accessibility. Floristic diversity (specific and structural) decreases with development of non-sustainable agricultural practices and high population. Improved market access pushes local people to collect natural resources for commercial purposes. In secondary valleys, forest products are collected for family consumption mainly. Market access drives the fragmentation and homogenization of rural landscape causing a loss in biodiversity and ecosystem services.

Illustrations:

Nam Khan Eco-Valley database
Code : JC6

Date or period: 2008 - 2009

Title:
Information, institutions and inequity: the case of the Nam Khan watershed in northern Laos

Authors:
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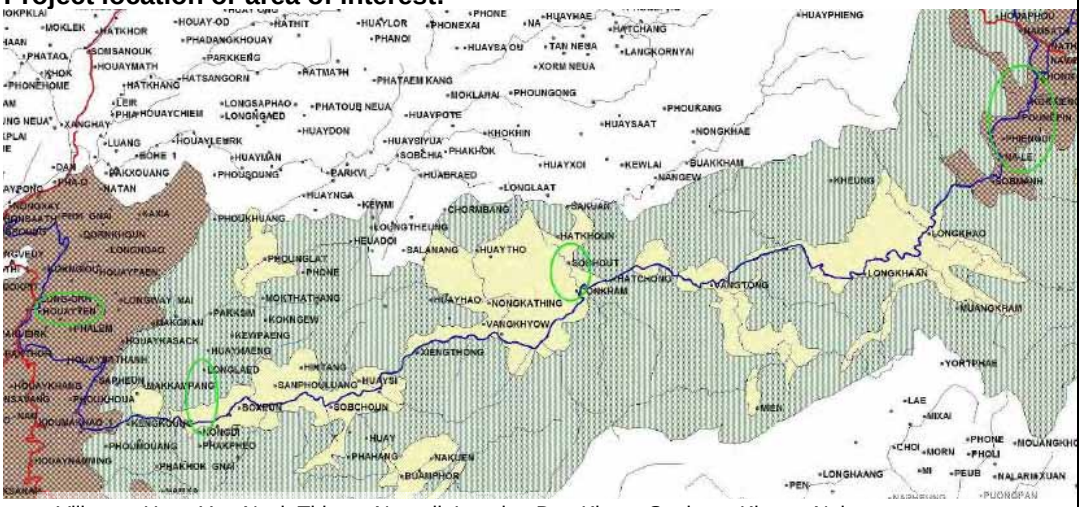
Nathan Badenoch
Contact e-mail:
rachel.shue@gmail.com
baideanach@gmail.com

Organizations:
M-Power - IUCN

Key words:
Water use, supply & quality, co-ordination and collaboration amongst stakeholders, watershed governance

Project location or area of interest:



Villages: Huay Yen Nyai, Thinpa, Nongdi, Longlet, Don Kham, Sophout, Khong, Nalae

Summary:

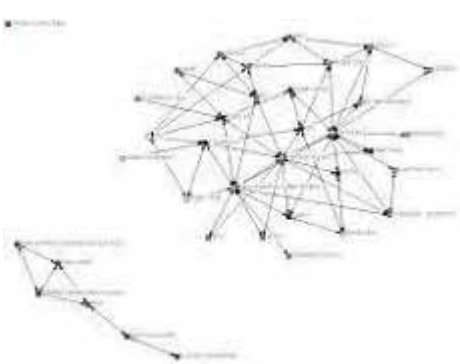
Water access and use was investigated to understand access and equity of water use. Information was gathered through a combination of structured and semi-structured survey interviews over a period of six months in the Nam Khan watershed. Eight villages were surveyed in four transects from the upper watershed to the downstream, aiming to determine the patterns of water use amongst villagers in the Nam Khan watershed and to understand decision making processes, information flows, resource exchanges, and collaborative efforts regarding water use. All major ethno-linguistic groups were represented, namely Lao Loum, Khmu and Hmong ethnic groups.

Significantly, no major discrepancies between upstream and downstream users were evident, suggesting that on a local level at least, perceptions of water quality and quantity are relative to immediate surroundings. Villagers continue to plan based on site-specific phenomena unless other interventions make them aware of a bigger picture. Any addressing of water access and equity in the Nam Khan watershed needs to be looked at in the local context of village level and watershed level stakeholders, their interactions, and the impacts of external policies that create uncertainty and instability.

Water is a priority at village level, yet other factors greatly influenced villagers' ability to plan and manage water resources. Absence of institutions is a key factor to the limited capacity to manage water resources effectively. While economic constraints may also present a problem, research in the Nam Khan watershed shows that the biggest restriction is the inability of stakeholders to commit to sharing information, technical skills, or other resources.

Therefore, issues of access and equity need to be framed within water governance principles and concepts rather than discussed as purely technical, financial or logistical concerns. Although the focus on water rights is often defined as access to capital, technical expertise and infrastructure to build water schemes, access to information, and decision-making processes are just as important if not precursors to, achieving equitable physical access to water. In the Nam Khan watershed, this specifically means improving decentralised decision-making between District and village levels, co-ordination in planning between watershed level actors.

Illustrations:



Nam Khan Eco-Valley database

Date or period:
June-July 2009

Title:
Characterization of the fisheries of the Nam Khan river in Lao PDR

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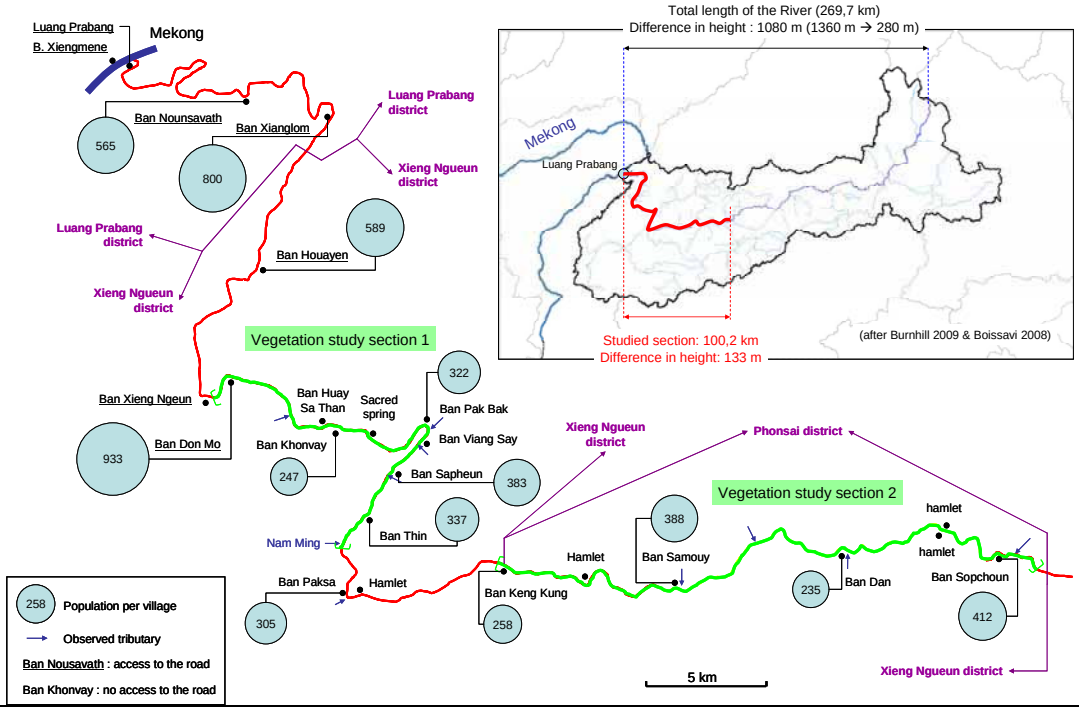
Key words:
Fisheries, Nam Khan, Mekong, Riparian population, Riparian vegetation, Fishing techniques, Fish species, Fish ecology, Aquaculture

Project location or area of interest:



Summary:

The survey was conducted during two months in June and July 2009. So far it was the third study made on the fisheries of the Nam Khan River after those done by Sjorslev (2000), still the most comprehensive in the Luang Prabang province, and Mollot (2005). The study has focused on the section 100 km long between Ban Sopchoun and the confluence with the Mekong River. Thirteen villages have been surveyed with questionnaires (population, livelihood and fisheries) and the records of the effective fishing in 5 villages (fishes counted and weighted during 151 fishing days). The riparian vegetation was also observed as it very likely plays a role in the river ecology. On the whole, the 13 villages counted 1090 households and 5774 villagers. From Ban Don Mo (39 km from the confluence), 4 villages were located in the lowest part of the river, with the access to the national road n°13, whereas the 9 upper villages were located in the mountainous and remote area. The living conditions were better in the lower part of the river with the electricity and drinking water access along with the better agriculture productions. On the whole, 544 boats have been reported and there was 1.4 and 3.3 households per boat in lower and the upper part of the river, respectively, hence the fishing seemed to be more important in lower villages. Fishers go everywhere on the Nam Khan; most of the fishing was done in the mainstream with only 11% in the tributaries. Fishing was seasonal with the high time in April-May while the water level was the lowest; the low time was in Aug-Sep during the flood. The gill net and the cast net were the most common fishing gears, making 48.3 and 29.4% of the total catch, respectively. The average daily catch per fisher per days was 1.62 kg and the tentative estimate was 644.5 tons per year for the 13 villages. Thirty two fish species have been recorded including the carps (19 species, 60.9% of the total catch) and the catfishes (5 species, 29.5%) for the two main groups. The total catch was shared between the home consumption (56.5%) and the selling (43.5%) with mostly carps and catfishes, respectively. The mean price of selling was quite high (2.86 $/kg); the fishing was driven by the important demand in Luang Prabang for the river fishes. The mean income per household was 61 $/month and, for the whole river, the selling would make about 802,600 $ per year. With 63 kg per person and per year, on the average, the fish consumption would cover 41.5% of the proteins requirement. The Nam Khan is likely undergoing over-fishing though no quantitative evidences have been found so far (lack of previous data). But the species composition might have changed: the large species have become rare and the fishes were quite small (30.3 g on the average). The riparian population has grown by 58% and the number of engine boats (or equivalent) by 73% over the past decade. The local systems of the fisheries management reported 10 years ago have been abandoned. Besides, the forest above the flood level has been possibly cleared over half of the river bank bellow Ban Keng Kung. Proposals have been made to restore the fisheries management. It is to note that the expectable hydropower development can pose another threat to the Nam Khan with three projects being under preparation (Rydgren, 2008).

Mollot, R., 2005. Capture fisheries and freshwater biodiversity in the livelihoods and culture of the Nam Khan. UNESCO/MDP/WWF. 37 pp.

Rydgren, B., 2008. Lao People's Democratic Republic: Preparing the Cumulative Impact Assessment for the Nam Ngum 3 Hydropower Project. Vattenfall Power Consultant AB. Linköping, Sweden. 394 pp.

Sjorslev, J.G. (Ed.), 2000. Luang Prabang Fisheries Survey. AMFC/MRC and LARReC/NAFRI, Vientiane, Lao PDR. LARReC Research Report N° 0001, 88 pp.

Nam Khan Eco-Valley database

Date or period: 2009

Title: Farmers' strategies and market opportunities in Nam Khan eco-valley

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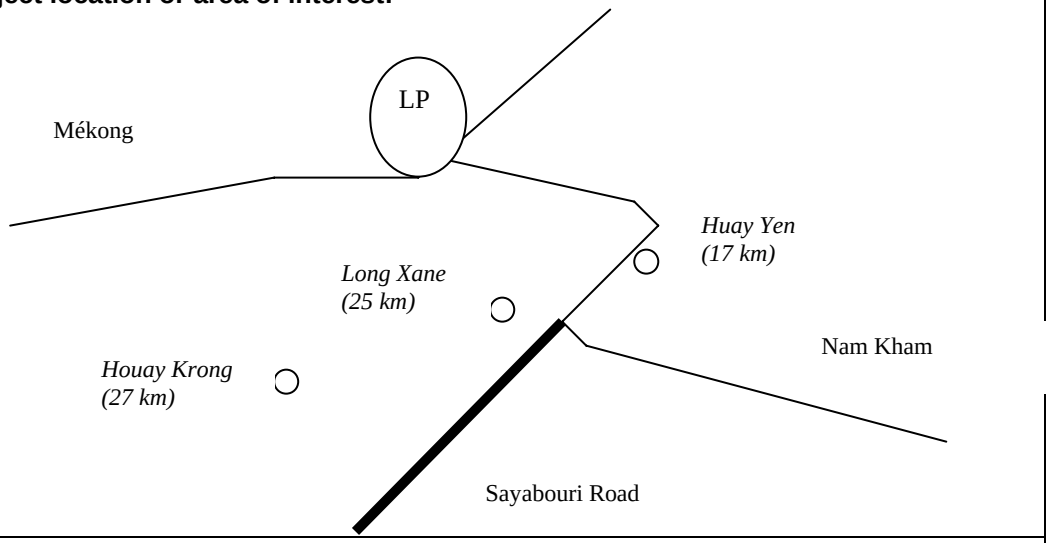
Key words:
production systems, marketing

Project location or area of interest:



Summary:

Studies were conducted between June and November 2009 to understand farmers' choices in terms of production and marketing, and to identify opportunities for marketing in Luang Prabang market. Production studies took place in Houay Khong, Long Xane and Houay Yen, three villages of Xieng Ngeun district, with ten families being interviewed in each village. Statistical data were collected on agricultural exports, ten export companies were interviewed, as well as a representative sample of hot pepper traders, and 35 restaurants. A typology of farmers was established according to their sources of food and income. Farmers with tense food and cash situation account for half the total.

A diversity of cash crops (maize, mulberry, Job tears, sesame..), as well as livestock, enable to escape food constraints but they require substantial investment. The main farmers' constraints are: lack of labour, low soil fertility with reduction of the fallow period, as well as market instability. The main constraints listed by export companies (dealing with maize, mulberry, job's tear and sesame) relate to: (i) low quality (inadequate drying conditions; impurities); (ii) lack of reliability of suppliers related in terms of contract enforcement. Restaurants complain about low quality of fruits due to too early harvesting and lack of hygiene of vegetables and meat. They point the lack of vegetables at the end of the dry season-beginning of rainy season and the lack of some types of vegetables all year-round, e.g. cabbage and carrots. Typical regional food products are difficult to find by tourists.

Six types of recommendations are given: (i) to improve the fertility of fallow land; (ii) to improve food quality; (iii) to develop technical capacity on vegetable production; (iii) to improve contract enforcement by farmers linked to export companies; (iv) to diversify food diet by nutritional advices.

Illustrations: