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5 List of organisations affiliated to the HKKH Partnership

The authors accept sole responsibility for this report drawn on behalf of the HKKH Partnership. The report does not necessarily reflect the views of the Government of China, Nepal and Pakistan neither those of the donor nor of the Implementing and Executing Agencies.

ACRONYMS

AKRSP

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2 Introduction to the Mid- Term Review

2.1 Introduction to the Project

The project “Institutional Consolidation for the Coordinated and the Integrated Monitoring of Natural Resources for Sustainable Development and Environmental Conservation in the Hindu Kush-Karakorum-Himalaya Mountain Complex” (hereafter HKKH Partnership) is a regional initiative aiming at consolidating institutional capacity for systemic planning and management of mountain socio-ecosystems at local, national and regional levels in the HKKH - the largest and youngest mountain region in the world – for poverty reduction and biodiversity conservation.

The initiative is financed by the Italian Cooperation – Director General for Development Cooperation (DGCS) – with a budget of € 4 Ml. for the Main Phase plus € 290.000 for the development of the Pilot Phase. It is implemented by the International Union for Conservation of Nature (IUCN) in partnership with the Italian NGO CESVI, the Italian research institution EV-K2-CNR and the International Centre for Integrated Mountain Development (ICIMOD).

“to contribute to consolidation of institutional capacity for systemic planning and management at the local, national and regional levels, focusing on poverty reduction and on biodiversity conservation through policy development and implementation programs in the HKKH region on a long-term basis”.

The purpose or specific objectives are:

1. “Provide tools and instruments to facilitate the consistency of various national-level actions in area based planning and management, within the framework of regional level systemic planning and monitoring”.
2. “Establish a process of application of the acquired capacities and DSS by individual countries in systemic planning and management of mountain areas at a local/national or transboundary level, within the framework of sustainable mountain development.

During the elaboration of the GOP, expected results changed from the original proposal (see chapters below), partly rationalizing the flow.

Project activities are listed according to each result in a very detailed manner and in two levels (activities and sub-activities). Reference is made to the Logical Framework contained in the GOP.

In order to put the evaluation into context, here below a small introduction to the three selectlo0D 0 T2.283

2.1.2 Introduction to the Project in Pakistan

The well established IUCN presence in Pakistan and past and on-going research activities developed by EV-K2-CNR[2] in the country's Northern Areas (NAs) region have been among the main reasons for the selection of the pilot area.

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the HKKH Project 10 mil., WWF 5 mil. and the Karakoram Trust (KT) l5. Currently three different conservation models are being considered for the Park:

i) a single large protected area, using zoning for balanced conservation resource use;
ii) a mosaic of protected areas of different categories;
iii) a revised CKNP with adjoining community conserved areas (not formal protected areas).

There is a tremendous need for coordination but the NAs Government has difficulties in playing this role due to shortages of staff and lack of technical and administrative capacities. The HKKH Project is becoming a key actor in the area together with:

1. WWF-Pakistan: to which the Government has delegated the lead for drafting the PC-1 project and responsibility for implementing some conservation activities;
2. UNDP/Global Environment Facility (GEF): the Mountain Area Conservancy Project (MACP), managed by IUCN, was implemented under the biodiversity focal area, outside the Park's borders and working with local communities; the impact of the project is such that the Government has recently financed a second phase contributing a considerable amount of funds;
3. IUCN: a partner to many initiatives in the area, it is playing a catalyst role in promoting the elaboration of the CKNP Management Plan;
4. the Karakorum Trust: an Italian financed initiative through EV-K2-CNR including a number of activities; a baseline socio-economic survey has already been conducted in Askole and the Upper Braldo Valley through the AKRSP;
5. AKRSP: as already mentioned, it has a key role in community mobilization and sustainable resource use with an impact recognised by both the target beneficiaries and donor organisations;
6. The Karakorum International University (KIU): recently established, it is gaining international support to serve as catalyst of international and national research and in creating a locally-based documentation centre;
7. CESVI: in addition to its role in the HKKH project, it has recently received Italian financing (Progetto Promosso) to support the development of CKNP and improve livelihoods of communities.

2.1.3 Introduction to the Project in China

The project proposal identified the Tibetan Autonomous Region (TAR) of the People's Republic of China and the Qomolagma National Nature Preserve (QNNP)

The Park has a comprehensive Management Plan; it is inhabited by a population of 61.000 persons but communities involvement in management is low.

The particular geo-political situation led the Project to choose an entry strategy through the Chinese Academy of Sciences (CAS) and its Institute of Geographic Sciences and Natural Resources Research (IGSNRR). A set of activities will be directly implemented through the Chinese Academy of Sciences (CAS). Opening a dialogue in China has proved more difficult than expected[4]; an agreement with CAS has been signed in May 2008 and activities in this area are about to start.

2.2 Purpose and Objective of the Mid-Term Review

The HKKH Project has not yet undergone a formal external evaluation. The Executing Partners, represented by its Executing Committee (EC) identified the need for an external Mid-Term Review (MTR) to assist in a self-assessment and provide advise for the remaining period of implementation.

This MTR is requested by the IUCN as IA, in the name of the Executing Partners. The donor has been consulted during the formation and implementation of the review process; it

3 Results of the Mid -Term Review

3.1 Relevance of the Project

The HKKP Partnership Project intends “to contribute to consolidation of institutional capacity for systemic planning and management at the local, national and regional levels, focusing on poverty reduction and on biodiversity conservation through policy development and implementation programs in the HKKH region in a longer-term basis”.

The goal and the specific objectives identified in the project proposal have been maintained through the development of the project. The GOP, developed during the Start Up Phase, did not propose any modification in this regard. Two specific objectives are identified, one related with the provision of tools and methodologies for natural resources planning and management and the second one with their application at local, national or transboundary level:

1. “Provide tools and instruments to facilitate the consistency of various national-level actions in area based planning and managem

women and men among stakeholder groups, capturing those elements which could hinder growth and harm development, especially considering that the ultimate Project's goal aims at reducing poverty and improving livelihood of population. The HKKH Project has made Stakeholder analyses (part of activity R.1.3): it appears that a revised version of the stakeholders analysis has been planned (DOP2) and developed. Other documents report the stakeholders' analysis (A.1.4.10,

The relevance of the initiative, in terms of management of information, is not questioned. This is supported by an approach which has developed a conceptual and innovative framework to support ecosystem management in an integrated way and which has introduced management oriented research. In addition to ensure sustainability and ownership, there has been quite an effort to make the Project more relevant at the local levels, adapting it to specific site needs. Nevertheless the

R.1.3 The management system and the decision making process in place are analysed and the entry points for improvements through systemic management are identified with key stakeholders.
R.1.4 A system to support the management of mountain areas and the related decision making process is developed and available to key stakeholders.
R.1.5 The capacities of key stakeholders/institutions required for the systemic management of mountain areas are built.
R.1.6 A monitoring scheme integrated with the DSS is set up for the target socio-ecosystem.

O.2 "Establish a process of application of the acquired capacities and DSS by individual countries in systemic planning and management of mountain areas at a local/national or transboundary level, within the framework of sustainable mountain development.

R.2.1 The conceptual framework, the GIS and the decision support tools developed are used by beneficiaries to manage selected protected areas (project level application).
R.2.2 A contribution towards the development/update of the management plans of selected protected areas sites is provided and the integration of the DSS in the planning process is promoted.
R.2.3 A process to promote and apply the conceptual framework, the GIS and the decision support tools developed for systemic mountain areas management at national and regional scale is initiated.

The MTR considers that one specific objective with no more than 4 maximum 5 results would have contributed to simplify the undertaking. The Logframe contained in the GOP has developed in detail activities and sub-activities but has overlooked the identification of indicators of effectiveness, effects and impacts at the level of the project purpose and of the results. The identification of benchmarks and indicators would have stimulated the Executing Partners to a constant reflection on the quality and effectiveness of the strategy to reach planned achievements and would have avoided shortcomings in project design. The Project Proposal identified a certain number of indicators in a general manner but they were not specifically attached to the results or to the project purpose.

Given the time dedicated during the Pilot Phase in building trust and an environment of cooperation among the Executing Partners and in testing a first software - finally discarded because of understandable technical reasons[6] – real project implementation is relatively short to allow a full appreciation of progress made and the contribution of the achievements to the project Purpose.

While proceeding to the evaluation of the Project effectiveness, the following elements should be taken into consideration:

- the initiative is quite innovative and stands between research and development: the effects of innovation are difficult to be appreciated within the time frame of a four-five years project and requires to be evaluated with different or at least additional criteria than those normally used in development. The innovative character of the Management of Knowledge can be appreciated at two levels: i) tools and methodologies are not always innovative in themselves but their combination in the same Toolbox and eventual parallel use is new and has high development potential thanks to the blending of hard and soft tools and of bottom-up approaches to the development of IT systems, ii) tools and methodologies may find individual application in other situations but are new to the institutional and environmental context;

[6] The analysis is based on the interviews with Project Management and the Report of the Pilot Phase. A more in-depth analysis would have required studying the Manual of the original DSS, a task not specifically required in the TORs and which in any case would have not changed n

- the four Partners were identified during the WSSD in Johannesburg; their expertise is recognised in the Project Proposal (2004) as the correct one to design and implement the present project; the real partnership came after and was not so much the result of a genuine interest among the Partners towards a specific objective;
- IUCN was naturally chosen as implementing agency due to the multilateral general on-going agreement between DGCS and IUCN; the other Executing Partners felt constrained by their resulting position;
- the initial design envisaged the development of a Decision Support System (DSS) through the use of a software which, once tested, was found inadequate to the issues to be faced; according to the Executing Partners, the ground situation resulted quite more complex and requested to take a bottom up approach so to answer real a

Agreement among the Executing Partners has greatly improved but, until now, the initial difficulties limited a more robust contribution to an overall reflection on the effects produced by the Project, thus assuring activities and results to be effectively geared towards the achievement of the purpose.

Shortcoming in implementation needs to be assessed considering: i) the complexity of the Project in terms of a multi-level and multi-country initiative, ii) the need to open a dialogue at country level and at local level, without bringing any immediately recognisable benefit to the community and iii) difficulties to shape a common vision among the Executing Partners. The Project has proved the capacity of being adaptive and flexible in proposing a decision support mechanism while appreciating ground realities and changing the implementation approach in the three countries according to what was possible and necessary. On the other hand, the need to maintain coherence with the initial design and the ambition to cover a broad area makes implementation difficult within the timeframe.

As already mentioned in the chapter on relevance, incomplete stakeholders' and users' needs analysis is a limiting factor in implementation. The MTR Team considers that if the aim of the Project is the development of tools to support decisions, a definition of what "decision-making" means should be given in order to limit the scenario to what it is useful in a given context instead of utilising a too large spectrum. In a knowledge-driven view as the one under evaluation, the

3.2.1 The Management of Knowledge

The management of information and knowledge is the key area of the HKKH Project and it is supposed to ambitiously take place at local, national and regional level. The Project focalises initial operations at local level (Protected Areas). The approach is not argued in itself but the lack of an initial in-depth analysis of needs, weaknesses and strengths (of institutions and users) and requirements (of the system architecture and data modelling) complicate regional upscaling unless some corrections are made during the consolidation of the System. The Management of Knowledge and information as implemented by the Project can be evaluated in terms of:

Innovation: as noted above innovation can be appreciated in the introduction of new methodologies and tools, in the combined use of these items previously looked at in isolation or in introducing them to a new context. A key positive innovative aspect is that different combined views for solving problems have boosted an encouraging process of change to move away from a technological software system (technology-driven) to a way of thinking including socio-economic aspects.

The reference document for the conceptual and methodological framework (A.1.1.1, June 2007) presents a strong commitment for integrating research with policy and people livelihood in order to ensure sustainability. The methodology proposes an integrated framework based on three mutually reinforcing approaches: the Ecosystem-Based Management, the Resilience Theory and Adaptive Management. The hope is that this methodology can be of benefit not only to the target region but eventually extends to the management of ecosystems at the global level.

A Toolbox is then proposed (A.1.4.1, July 2007), composed of a blend of soft and hard system thinking of complex socio-ecosystems across various spatial and temporal scales. Soft tools include the Scenario Planning adopted in May 2007 and the three mentioned approaches. Evidence of their utilisation during capacity building activities is limited to Scenario Planning and Resilience Analysis. Reading the documents proves difficult as their organisation is not always clear. On the other hand the flow of activities and roles are quite well depicted in A.1.2.1 and the approach to support decision-making is innovative.

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Capacity Building/Capacity Development: capacity assessments were conducted by ICIMOD during 2007, tailored to GIS and RS requirements in the three countries where the situation varies considerably in terms of lack of professional staff, equipment and software. An Overall Capacity Building Framework (A.1.5.5) was developed including all aspects of CB to be applied by each partner in their specific area of expertise. CB implementation principles are provided and key areas of activity identified at regional, national and local levels. It is a sound document but which comes late - March 2008 - when many activities have already been developed by each partner. The document also identifies challenges and constraints;

The Project needs to concentrate in improving ownership of tools and innovation but the most urgent issue concerns the identification

presented during a workshop applying the software Simile[15]: A.1.5.5, March 2008) and the Decision Analysis Module is not yet implemented.

Scenario Planning considers two alternative techniques: one falling under the “intuitive-logic school and the other under the “probabilistic modified trends school”. The first one, more flexible, has been chosen: it relies on internal expertise within the organisation and produces narrative and qualitative descriptio

finds its finalisation. The process is still on-going; it may be that a stabilised procedure could be developed in the future but at present, for some specific themes, the models developed so far do not give evidence of the innovation and the novelty and some inconsistencies between expectations and outcomes could emerge. As an example if Forestry is taken as a centric problem in most of PAs (for all possible implications at different levels and different concerns), the Forestry Model developed by the Project does not reflect the theories developed in the Project approach (Resilience, Adaptive, EBM), nor this type of modelling has a particular added-value. The same applies to other important models such as the Land Cover Dynamics. In addition the two models do not share the same type of analysis as it can be appreciated by the fact that “afforestation”, present in the Land Cover Dynamics is quite oddly absent in the Forestry Model. The subject is instead important in both cases, given its role in conservation. Possibly this is due to the fact that the two models have been developed by two different partners (EV-K2-CNR and ICIMOD), eventually with different expertise.

Modelling and scenario analysis: quantitative models

The qualitative model is coupled with the quantitative model in order to build a comprehensive system: facts or concepts expressed in the first are run and verified in the second. Simile is the software tool adopted by the Project to simulate complex dynamic systems; it is a diagram-based environment where concepts are expressed as constituent parts of a model together with their linkages, described by diagrams in a not-specialist programme language. This technique is a

IUCN-ARO (represented by the Head, Country Group II). IUCN Nepal hosts the PMU. IUCN plays also a technical role through its countries' offices in China, Nepal and Pakistan.

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Table

All partners	Regional level	Remarks
	xMake research relevant to managers and decision-makers. xLook at innovation of technological tools, with a holistic and integrated approach. xShaping a common vision and identity of the Partnership x	

communities

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- Visual appeal: a Web Portal graphic design should highlight main topics and prioritise functions and menus according to the importance and relevance of hits. The look-like interface of the Portal is flat, does not capture the attention of user toward the main topics and all the hits have almost the same dimension and importance.

As previously seen, Capacity building and t raining activities are identified for all project components and implemented by each partner, absorbing an important part of the Project's energies and time. A capacity building framework has been established only in March 2008 but activities have been implemented since the beginning. The provision of equipment is envisaged but it does not represent a very large component.

Table – Summary of Training

Training	N. of events (local, national, regional)	Type of event	N. of participants per gender	N. of participants by scale	N. of involved institutions
	24 (15-5-4)	2 long-term; 3 training on-the-job; 17 workshops	519 (, - *f*	267 local; 127 national; 125 regional.	29

Clearly the Project attaches great importance to CB activities. Information about training events can be found with details on the HKKH Web Site at present only if authorized but it is planned to be open to the public in the near future.

Training material is usually stored in CDs for dissemination and as a self-learning package which can be re-utilised and used as a reference. Additionally the material is

Project and its commitment to be there after it constitute an added value to the sustainable elaboration of the Framework Management Plan and future implementation. In China activities are starting now and there is no much to be evaluated. All considered Project implementation is not mature enough to justify a deep analysis of impact. The analysis would have been difficult in any case as: i) the Project did not even attempt to define indicators and benchmarks, ii) in some case, as in Pakistan, the presence of a large number of actors, makes the question of the attribution gap a real issue and would require an in-depth evaluation.

Nevertheless, as already seen, there are areas in which positive effects are starting to manifest such as in bridging the gap between research and management, in creating a solid Partnership identity which has chances of sustainability and in initiated processes of change that have the potentiality to become effective. This can however only happen if a process of consolidation is implemented, more time is allowed and all partners, international and local, manifest a clear will to develop the system in a sound way. To do this, it is probably necessary to go back to the start and conduct the stakeholders' and needs' analysis in a much more detailed way than it has been done.

The MTR is required to concentrate in the identification of activities which have more chances of success and on which to focalise during the last period of this phase.

3.5 Sustainability

The sustainability of the achievements of the Project is a matter of concern. It is possible that some of the tools developed survive and are applied if more time is allowed to the Project to strengthen processes initiated. The DST, and in particular the qualitative model, have great potentiality to become an "expert system" in the sense of Artificial Intelligence (AI). Some of the main topics of the AI are already implicit in the DST, namely reasoning, automatic programming, knowledge representation, patter recognition, and partially

4 Conclusions and recommendations

4.1 Conclusions

The Project develops a conceptual framework harbouring different aspects of natural resources planning and management, fully aware of geographical, political, ethnic, cultural and religious factors diversities of high mountain protected areas in the HKKH countries. It was designed as a Partnership initiative under the umbrella of the Global Mountain Partnership. Reinforcement of institutional capacities is fostered by an integrated approach comprising vertical and horizontal collaborations with a large group of institutions at different levels, consolidation of knowledge and provision of appropriate technologies such as GIS and DST for planning, management and monitoring. The Project has the ambition of consolidating the institutional context and developing tools and methodologies that can be relevant not only at regional but also at global level. A few but key design limitations affect overall implementation, in particular the lack of:

i) a thoroughly well done assessment of the institutional strengths, weaknesses and needs,
ii) a sound system of impact and effectiveness indicators to guide and orient the execution,
iii) a proper Risk Analysis accounting for institutional, technological, managerial and social risks,
iv) the development of a direct dialogue with the countries concerned during project formulation (it was indirectly assumed through ICIMOD).

The responsibility for these shortcomings is cross-cutting during the phases of the Project: certainly during formulation but also during the Pilot Phase and the elaboration of the GOP. It finally led the

harbouring socio-economic aspects. Innovation does not only concern the creation of a new object; it is innovative something which is original to the context in which it founds application. The process of integrating local perceptions with research and modelling for the management of fragile and complex mountain ecosystems is new. The Resilience Theory, Ecosystem Based Management Approach and Adaptive Management are not new approaches per se: what is new is their parallel and combined utilisation. Nevertheless there is not yet clear proof of how this applies when the DST is at stake.

The MTR Team appreciates the complexity of the undertaking and the genuine effort to make things happen. The Project deploys young, skilled people for developing activities; the advantage in terms of enthusiasm, eagerness to learn and debate, easiness in the participatory approach, a greater familiarity with the techniques and the internet community is counterbalanced by the disadvantage of not benefiting from those reasoned solutions which come from experience. An aspiration to cover a broad methodological and technical spectrum and an excessive sophistication even in the formulation of activities, sometimes shift the undertaking from complex to complicate. Documents have the structure and approach of research papers, used for disseminating views and for providing a state of the art of the scientific arena and bibliographic references to illustrate all possible alternatives. Overall this results in embarking into too many dispersed activities without a clear idea of what has more chances to survive, given the context.

The Project appears to have taken a “water fall” rather than an “incremental” or “spiral” approach for the development of the DST. Project Management claims it is “incremental” as modules are developed one after the other. The MTR Team considers incremental the approach where: i) the system is conceived in its entirety at the outset, ii) it is then developed in all its phases simultaneously for a certain percentage (i.e. 20%), iii) it is tested and fine-tuned iv) another percentage is planned and implemented and this goes up in an iterative way up to its completeness.

The approach adopted overlooked implicit risks (political, managerial, technical) and proceeds as if time was not a limiting constraint. Although this may be the reflection of the Executing Partners’ long-term commitment[21] in the countries, it is unlikely that the Project can consolidate the system and the processes initiated up to their sustainability within the next year of project implementation.

4.1.3 Development of the Decision Support Toolbox

The DST constitutes a blend of soft and hard tools and methodologies: Scenario Planning contributing to a long-term vision of the development problem, the methodological approaches of Resilience and Adaptive Management, the Knowledge Base and Spatial Analysis for easy access to information, the Qualitative Analysis for capturing and sharing a common understanding, and the Quantitative Analysis to simulate different scenarios.

The development of the different tools is still on-going. Although not completely mature, applications of the Toolbox are already in place, according to the different context in SNPBZ and CKNP in terms of scenario planning, qualitative system analysis, knowledge base, basic GIS data layers. At present, quantitative analysis is applied only in SNPBZ. The modular approach allows to flexibly respond to different needs and background capacities/data availability.

Accompanying documents for the design and implementation of the DST software are not compliant with good practice and standards, hindering the evaluation of the modules not yet completed and/or released; in addition this also hamper future maintenance and the completion of the tasks in case this can not be done within the timeframe of the HKKH Project.

[21] IUCN presence is confirmed in Pakistan even after the project life in terms of commitment to the elaboration of the CKNP Management Plan; EV-K2-CNR and CESVI leveraged additional financing in Pakistan and will be implementing new activities.

The Knowledge Base contains over 1.200 records which can be accessed and downloaded from the HKKH Web Portal. The DST is a stand-alone application, distributed on a CD which combines the knowledge base with analysis modules for the decision support mechanism. Training material has been recorded on CDs and distributed; it should be posted on the web but it has not yet been done. There is a well structured training database, accessible to Project members. A large number of articles and working papers have been published.

The hardware and software architecture of the system has not yet been properly defined. Data are stored in a file management system, in hierarchical directories indexed and accessed via metadata; they are not structured in a RDBMS, compliant with international standards. Should the Project decide to elaborate a Framework of high mountain ecosystem, the HKKH Partnership could become a standard, global reference model; this would clearly require an effort for data harmonization and cataloguing.

4.1.6 Up-scaling.

Up-scaling the process at the national and regional level is not an easy task for different reasons:

- as reported by Project Management there is no coordination between the planning and managing authorities in the HKKH countries; given geo-political, geographical and technical

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Sustainability is not assured. It is possible that some of the tools developed survive and are applied if more time is allowed to the Project to strengthen processes initiated. In order to prove the regional and global relevance of the tools and methodologies, the Project needs to start investing in promoting them through communication actions (dissemination papers, workshops…). These must be tailored to different audiences, including local communities which need to know what the project is all about[25].

Capacity building activities have been extensive in terms of the number of events organised and the subject touched but the MTR Team was not able to capture evidence of the effects upon participants. As already stated, the level of understanding has been low in many cases and the lack of the needs' analysis does not permit a firm judgement about their perceived utility in daily ecosystems management.

The sustainability of the Partnership and its identity is a regional, national and local success and has chances of surviving the Project's life. This network is becoming to have an identity under the HKKH Partnership and the effort done should not be lost. The sustainability of the implementing arrangements with the four Executing Partners is questionable beyond this phase project's life.

The sustainability of the Portal is also an open question. As long as the Project is there, all Executing Partners feed the Portal but a clear strategy for maintaining it has not been identified. Its maintenance is relevant not for the Project itself but as an element of the HKKH Partnership.

Activities started in Pakistan are likely to be sustainable considering the firm commitment of both the NAA Government and the various partners involved in PC-1 and the likely presence of all partners even beyond the Project life.

4.1.8 Planning, Management, Reporting

Project management is generally recognised as efficient by the Executing Partners. The circumstances described above obliged the PMU to strict management actions, not always appreciated by the Executing Partners. It represents an important workload for the CTA and the PMU in general. Quality may be variable but the partners performance is generally timely in delivering agreed products and efficient in managing the assigned, individual budget. Partners have been reluctant to be strictly monitored and would have preferred to enjoy an "equal partners situation". Their perception of rules and reporting being cumbersome adds friction in the relationship with IUCN in its managerial and administrative role. This is aggravated by the fact that IUCN Nepal thematic and technical role has not been fulfilled as planned up to now: although IUCN Nepal is currently catching up since it has contracted a dedicated person for the purpose, Partners felt that control over this office to deliver technical product was less strict than elsewhere.

Overall performance results efficient, considering the workload. Monitoring meetings have been held periodically through the established system, in particular through the EC and the Technical Team. The EC appears not to have played its steering role; partners manifested perplexities on its bureaucratic way of functioning and on the confusion between the technical and political roles played. The EC Minutes of the Meetings reflect that these gatherings are centred more on discussion of operational matters than on strategies and outcomes. This is among the reasons for which effectiveness is limited, at least up to the present level of implementation. The management system enables the identification of key problems and bottlenecks and foster communication among the partnership and the stakeholders but results and objectives are not measured by OVIs, resulting in a limited vision of the strategy to reach the initiative specific purpose.

[25] It has been reported that SNPBZ communities could have been more supportive of some of the Project actions if communication messages were designed in an appropriate way, considering the complexity of the system developed.

PC-1 does not include the participation of AKRSP; this is a major setback due to their key role in communities mobilization and in favouring the creation of LSOs, community organizations that should be recognised by any institution and government department wanting to work at grass-roots level. It is reported that following the May workshop, the NAA Administration has been encouraged to revise PC-1 and eventually include the AKRSP among the partners.

PC-1 seems to assume that within 2009 the HKKH Project will deliver the Management Plan and baseline data for 17 local valleys. The HKKH project made it clear in a written form that its participation will end in 2009 and the products to be delivered are limited to the Management Framework of the CKNP, environmental baseline data and socio-economic baseline data for three valleys[28] (as it concerns collection of primary data while the study on secondary data[29] will cover the entire area). This misunderstanding should be cleared.

It is important to consider that the Management Plan is a point of departure, not of arrival. The interviews with the communities showed that it already exists a great deal of awareness about people's rights to us

Some specific recommendations:

Development of a HKKH framework: the development of a HKKH framework would leverage the production/collection of data, essential for the Project, thus optimising the process by ruling out redundancy, eventual useless data and also contributing to sustainability. It is recommended to define the "domain" of the HKKH Project Core Data[30] according to prioritised areas of intervention (i.e. climate change, forestry…); within each area, conceptual and logical data model should be developed adopting either E-R (entity relationship) or UML notation. When and if a RDMBS will be adopted, also the physical model should be defined; this will allow to identify spatial and non-spatial classes, their types of data, attributes (multiplicity, property, coded values, domains, rules for splitting, logical and spatial constraints, etc.), logical, physical and attributed relationships (cardinality), parameter-list, class or feature operations.

A stepwise action to build and populate the HKKH Project framework includes: i) identify data needs by environmental (thematic) issue; ii) structure list of data needs, grouped thematically (packages); iii) prioritising needs, based on obligations, sector user value and cross-cutting needs; iv) definition of Data Project Core Data Regional Level; v) definition of Data Project Core Data National and Local Level; vi) Harmonisation of Data Project Core Data; vii) Data Project provision and infrastructure (the Project IT Centre).

Standards: The goal of HKKH Project is an open, cooperative infrastructure for accessing and distributing information products and services; most of these services are thought to be accessible on-line while others, at present, are distributed on a stand-alone CD. The adoption of the HKKH Project Framework should allow to access a distributed network of databases, linked by common standards and protocols to ensure compatibility and interoperability of data and services. In fact, by ensuring that electronic data content and services located in national and regional organisations are implemented according to common standards, they become easily accessible and can be combined seamlessly across administrative borders, thus enhancing regional relevance.

Therefore adoption of standards becomes a priority not yet efficiently tackled by the Project. Although the correct model to data harmonisation is still debated (global domain – GeoSciML - and/or jurisdictional context - INSPIRE), most data models draw from a common ISO basis. If HKKH proceeds to data modelling, it is recommended that ISO standards are adopted. This will make it compliant in any case with UNSDI directives, claimed to be referenced to by the Project. There are various reasons for which data modelling is recommended, among others:

- transboundary: edge or theme matching at regional level;
- cross-sector: the complex eco-system requires data-sets for sector-based applications;
- cross-type: raster versus vector datasets;
- overlap: different sources and processes for different datasets;
- shareness: partners' networking.

Although HKKH Portal is not currently designed for a Web Service, the adoption of international standards would also improve data sharing and eventually real-time interactions between applications. In fact if sharing is a goal, a software-independent exchange format other than the commercial ShapeFile should be adopted: the XML-based encoding format (e.g. GML Geographic Markup Language) might represent a valid option. A quite comprehensive analysis of related issues is summarised in the INSPIRE Architecture and Standards Position Paper.

Outreach: it is recommended to invest some time in identifying lessons learnt and in preparing dissemination papers and eventually publications to make the system known and raise interest at the regional level. Communication products should be tailored for different audiences.

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4.2.2 Knowledge Management Tools

Web Portal:

- the trend of managing knowledge is that of coupling metadata and data within one and the same database for the sake of synchronisation and maintainability,
- it is widely adopted for spatial data,
- it is probably the unique solution to cope with dynamic changes both spatially and temporally,
- it is a mighty tool to accommodate consistently time-series.

The choice of commercial or open-source solutions depends mainly on the strategy and criteria for sustainability.

Spatial analysis: if the intention is to perform spatial analysis, all related tools should be provided (it

- raise the profile of its intervention from the local to the national level by strengthening the involvement of the national institutions so that tools and methodologies experimented can at least be replicable in other PAs;
- ensure that the actions developed in the SNPBZ are really relevant to both the national and local level: the MTR Team has collected complaints from both the local level Park Management and informed people reporting voices from the communities. These are common objections: communities always ask for very concrete solutions to their immediate problems but evidently there is the need to at least improve communication as this indicates that either actions were