

Coordinating Traditional Values, Scientific Research and Practical Management to Enhance Conservation and Development Objectives in the Andringitra Mountains, Madagascar; Lessons Learned!

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INTRODUCTION

The Andringitra Mountains in south-central Madagascar have been a Strict Nature Reserve since 1927 because they were recognized by early explorers (Perrier de la Bathie, 1911; Humbert, 1924) as a bio-geographical convergence zone of different landscapes, ecosystems and habitats. Each had an outstanding biological diversity with an Eco-regional function as an important watershed area. Protected by legislation, relative inaccessibility and a rude climate, the Andringitra Mountains were left in "splendid isolation" for over 65 years. Eventually, a concerted effort by national and international conservation interests produced the 1st Malagasy National Environmental Action Plan in 1989. L'Association Nationale pour la Gestion des Aires Protégées (A.N.G.A.P.) is designated as the future National Park Service Organization. Among other sites, Andringitra Strict Nature Reserve became a priority for intervention during the 1st phase environment program (1991-95), assisted by various conservation NGO's.

In 1993, a tripartite convention between the Direction des Eaux et Forêts (D.E.F.), A.N.G.A.P. and the German Development Bank Kreditanstalt für Wiederaufbau (KfW), contracted World Wide Fund for Nature (WWF-International) as project executive for the creation of a National Park. The agreement included two mission statements: A) The long-term preservation of unique biological-, genetic- and aesthetic values and ecological functions of Andringitra and B) Sustainable socio-economic development through diversification and intensification of the traditional agro-silvo-pastoral farming system outside and the development of ecotourism inside the park, respecting ecological principles for local natural resources management and economic development.

The contractual agreement between the above mentioned stakeholders stipulated eight major objectives, which translated into indicators for project achievement after 5 years at the end of the orientation phase. They were: 1) The values, functions and potentials of the Andringitra mountain ecosystems are better known and understood; 2) Concepts and strategies for protected area management and use are developed; 3) Ecological approaches for economic

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development of peripheral zones are found and applied; 4) Water sources, water catchment and watershed areas are protected to assure the sustainable function of Andringitra as a quality water reservoir for agricultural and socio-economic development by local communities; 5) Destructive agricultural- and pastoral practices (swidden agriculture, uncontrolled bush fires), which lead to deforestation and soil erosion are halted and alternatives found; 6) The interconnected roles of "conservation (of natural resources) for (socio-economic) development" and "development for conservation" are understood by local communities and other stakeholders; 7) Institutional, NGO, and local capacities are developed or reinforced for self-reliance and self-governance; 8) The potentials and feasibility for Eco-tourism in the Andringitra Mountains are identified. To realize these eight objectives, the intervention was designed as an *Integrated Conservation and Development Project (ICDP)*, where protected areas interact with the surrounding landscape matrix and activities of people generating direct and indirect impacts are tolerated, obliging the project executive to define a functional intervention zone in a broader framework of space and time.

THE ANDRINGITRA INTEGRATED CONSERVATION AND DEVELOPMENT PROJECT (ICDP)

In the beginning of 1993, rapid rural appraisals (RRA) highlighted a longstanding irregularity: a situation whereby natural resources, (including particular forests and the Andringitra Strict Nature Reserve) belonging to the state agency, Direction des Eaux et Forêts (DEF) were being illicitly used by local communities according to their needs. In other words, the owner had no uses and the user had no rights. This effectively disconnected the primary objectives of the two key stakeholders, forcing their relationship into a game of cat and mouse. We believed that this question of relationship between land and its resources, owners and users was our most important challenge and decided to address it with priority.

We therefore set ourselves three operational mission statements: 1) Clarify the role of and compatibility between traditional local conventions and state legislation concerning natural resources use and management. 2) Reduce positions of conflict e.g. between use values (local communities) and existence / option values (scientists, conservationists), non-market resource uses (local communities) and market-resource uses (DEF and ANGAP) and facilitate functional and synergistic relationships of key stakeholders by narrowing the gap between extreme positions. and 3) Catalyze approaches for ecological stability and equally important, permitting social integration for economic and political viability and longer term sustainable solutions.

After a one year interdisciplinary and collaborative situation appraisal we concluded:

- a) Protection of natural resources by the strict *interdiction of access and user rights to natural resources* (e.g., the application of state legislation) is a non-sustainable approach. It depends on centralist, top-down prescribed law and order, difficult to comprehend and enforce in the remote countryside of a poor developing country. In addition, certain intangible properties like sacred sites, taboos or even certain natural resources like water, firewood, medicinal plants, bushfood, are perceived as common goods by local communities.
- b) The "paternalistic" approach towards *protection for local people* gives poor results. It creates a passive relationship between actor and beneficiary or in other words a "teacher" and his "pupil".

Same goods and services are seen out of variable beliefs, desires, perceptions, different perspectives and knowledge with unequal use, existence and option values. Subsistence or market priorities can position project executives opposite local stakeholders and logic based science opposite myth based traditional cultures, public versus private benefits, and the like.

c) Following a review of earlier experiences and guidelines for designing Integrated Conservation and Development Projects, we proceeded to develop *a collaborative approach of conservation and development together with local people*.

ADAPTIVE MANAGEMENT, LEARNING BY DOING! COORDINATING TRADITIONAL VALUES, SCIENTIFIC RESEARCH AND DEVELOPMENT (R&D) TO FOSTER CONVERGENT INTERESTS, A RELATIONSHIP OF TRUST AND MUTUAL SHARING.

During the following year of project implementation, we encountered many unexpected effects and setbacks. Scientists or project executives need public support and participation to increase credibility, reduce conflict, and become more effective. Local communities need intervention partners who are prepared to observe, listen and learn from the wealth of traditional experience and local intuition. In a *"Learning by doing" scenario, interested stakeholders develop a holistic, multi-lens vision, permitting them to observe and address details within a broader framework. It enables them to respond to and to test processes creatively and dynamically rather than statically*. Within a given cultural and economic context, such a systems approach allows a strategic interconnection of different scales of biological, social and institutional parameters within the multi-stakeholder logical frameworks of an ICDP. In other words, one interconnects specific questions simultaneously at different levels: a *wide angle lens* (the importance and meaning of cattle pasturing on altimontane prairies for cattle owners, biologists, National Park managers, tourists, the ecosystems and its biodiversity); a loupe (what logic governs local communities to develop a sophisticated rotational grazing system -- "alpage" in French -- on altimontane prairies?); and, a microscope (the impact of cattle grazing on soil erosion, biodiversity dynamics, water pollution, and the visitor experience).

Over time, a basis of mutual respect between the various stakeholders such as local communities, scientists, natural resources managers (ANGAP, DEF) developed. We all became aware of the divergent interests and priorities and these could be discussed. Compromises were identified, evolving finally towards convergent interests which could thrive in an environment of confidence and trust. For instance, interested villagers became *para-scientists*, integrating their "soft" traditional knowledge in a database from "hard" sciences (the scientist learning from long standing observation and experiences of local people). At the same time, they learned to comprehend and even apply Cartesian logic and the methodology of modern science. In another example, state legislation permitted the integration of traditional "law" as conflict resolution or different land-uses like agriculture, pastoralism, conservation, and tourism. These elements, segregated in the past, developed more and more synergy and reciprocal benefits from a matrix of *multiple land-use systems*.

Over the following three years we learned, that in the long run attitudes and actions of *resident stakeholders* (local communities, local natural resources managers, local politicians, local rural development approaches, etc.) which make or break integrated conservation and development efforts. In an evolutionary process of trial and error we developed our own

Andringitra project-specific brand of ICDP design and management evolving progressively towards *conservation by local people*. Conservation by local people is a process of awareness creation, leading to a paradigm shift for conservation scientists and academic project executives. Resident communities can become --under certain favorable conditions-- good natural resources managers.

Example: *The role of cattle and fire* on the altimontane prairies inside the protected area. Due to their location in relation to latitude (~22°10') and altitude (~2000 m al), and natural environmental dynamics (a marked seasonality between dry and wet conditions and high daily temperature oscillation) this ecosystem is unique in Madagascar and thus attracts high conservation interests. Seasonal occupation for cattle grazing and sporadic fires used as a pasture "management" caused these natural prairies to become over time a unique "sustainably disturbed" natural vegetation mosaic with enhanced esthetic, biodiversity and socio-cultural values for multiple stakeholders. Contrary to conventional conservation wisdom, traditional land uses are at least compatible with or even necessary for landscape diversity, biological diversity and functionality. We patiently worked through relationships between multiple stakeholders towards a unified vision: a synergistic co-evolution with practical applications and win-win solutions for an increased number of stakeholders.

LESSONS WE LEARNED

Learning is the result of a continual process of investigation, analysis, interpretation, trial and error and adaptation (Figure 1). It cannot produce absolute solutions and standardized approaches because in a living system, each situation, episode, question, opportunity and problem is a unique snapshot in space, time and context. Below, we share with you some important project experiences and what they meant for us project executives:

- The notion of a "pristine environment" is a myth. The landscape keeps a memory of human "footprints" and impacts. Conversely, the cultural history of people seems entwined with the natural history of the land with its specific geo-morphology, climate, flora and fauna. Land users are therefore automatically land managers. They are principally *relationship managers*, who continuously need to interpret physical, ecological, economic, social and political contexts and processes and adapt to, or manage interactions between nature and people over space and time.

Lesson we learned: *Conservation objectives can better be considered by inclusion rather than exclusion of people and by favoring a synergistic co-evolution of transformation processes.*

- "Learning by doing" is an open ended and flexible approach of "informed trial and error." This requires a holistic approach of interconnecting systems research and process research with an iterative feedback of information and scaling. It permits the recognition of heterogeneity, variability, and multiple objectives. This "perpetuum mobile" of investigation, experimentation, evaluation and adaptation helps to tailor the approach and permit rapid elimination of unsatisfactory approaches and results by favoring

adapted solutions. In order to function well it needs a decentralized, bottom-up, flexible management structure and a relationship between stakeholders of mutual trust and interactive communication.

Lesson we learned: *"Learning by doing" was a suitable approach to foster trust and with it feedback and creative interaction and co-evolution.*

- Sectorial interests, such as community objectives, are principally governed by needs, traditions, intuition and opinions. Scientific objectives are guided by curiosity, hypothetico-deductive and objective approaches to fact finding and understanding. Management objectives are driven by strategic targets, logical frameworks and expected results can be successfully addressed by democratic partnerships and collaborative management agreements (Figure 2).

Lesson we learned: *Creative interaction and co-evolution grows and strengthens among equal partners having mutual respect for each others views, perceptions, and logic.*

- Data refraction, where the same information can be seen supporting opposing viewpoints, is a major constraint to project design and management and must be given serious attention. This situation arises when one compares development objectives with conservation objectives, short-term impacts with long-term effects, or economic benefits weighed against cultural impacts. Examples: 1) short term productivity per land unit (development objective) may lead to long term land degradation (conservation objective) or contrarily, 2) devastating fire impact (short term conservation view) may lead to vegetation heterogeneity with enhanced biodiversity (long term conservation view), 3) tourism offers rural communities the opportunity to diversify local employment and economic development at the price of lost cultural identity.

Lesson we learned: *There is no simple recipe or best policy for choosing the "right" way. The way forward should be a negotiated agreement and not a top-down, imposed decision.*

- Developing and managing the Andringitra ICDP with these innovative approaches caused us to overlook the pathology of outside induced and managed projects. We were prepared for shared duties and responsibilities, but maintained intellectual, technical and financial leadership. Interactive communication, technical and financial joint ventures do not have enough meaning if the project donor or executive's relationship with other stakeholders, particularly local communities, remains one of discrete dependencies.

Lesson we learned: *Project donors and executives easily fall into the trap of continued leadership and dominance. Over time, this produces inflated leaders at the expense of deflated "beneficiaries". For a conservation and development objective to become sustainable, catalysts must learn to let go.*

PROJECT EXECUTIVES MUST LEARN TO LET GO! STAKEHOLDERS MUST BECOME SHAREHOLDERS

Responsible stakeholders must become over time accountable shareholders, sharing not only duties and responsibilities, but also rights and powers. This means finally *conservation by people and political negotiation between equal partners*, anchored within institutional and legal frameworks. This was probably the most important lesson learned from the Andringitra Integrated Conservation and Development approach over a five year period. The most durable stakeholders within the vicinity of a National Park are local communities, having their spiritual and livelihood rooted in the natural landscape. If conservation and development objectives are to become sustainable, as postulated in the mission statement, then these stakeholders turned shareholders must have institutional rights, powers and legal security. For foreign dominated project executives (eg. WWF, KfW, scientists, visiting consultants, and specialized development NGO's) or state-based public interests such as National Parks or more abstract objectives like biodiversity conservation, the transformation of this lesson into action, becomes the most crucial and most difficult part of the whole program initiative. Examples: At the project level, 1) Resident villagers around the periphery of the newly decreed Andringitra National Park volunteered as unpaid, self-help National Park Guards, each individually and collectively responsible for a section of the park boundary and the park as a whole; 2) fire is collectively managed by traditional conventions and modern legal agreements among key shareholders (DEF, ANGAP, project executive, and the community); 3) fire control is organized autonomously for each village territory. At national level, 4) the approval by parliament in 1996 of a law permitting local management of renewable natural resources outside protected areas; and 5) within the Andringitra National Park, the Government approved our jointly drafted decree for its creation in which grazing rights and the collection of natural resource products for personal domestic use (within limits of ecological sustainability jointly established and approved in the park's management plan), and existing customary traditions (passage on existing trails and access to sacred sites) are guaranteed by public legislation.

CONCLUSION

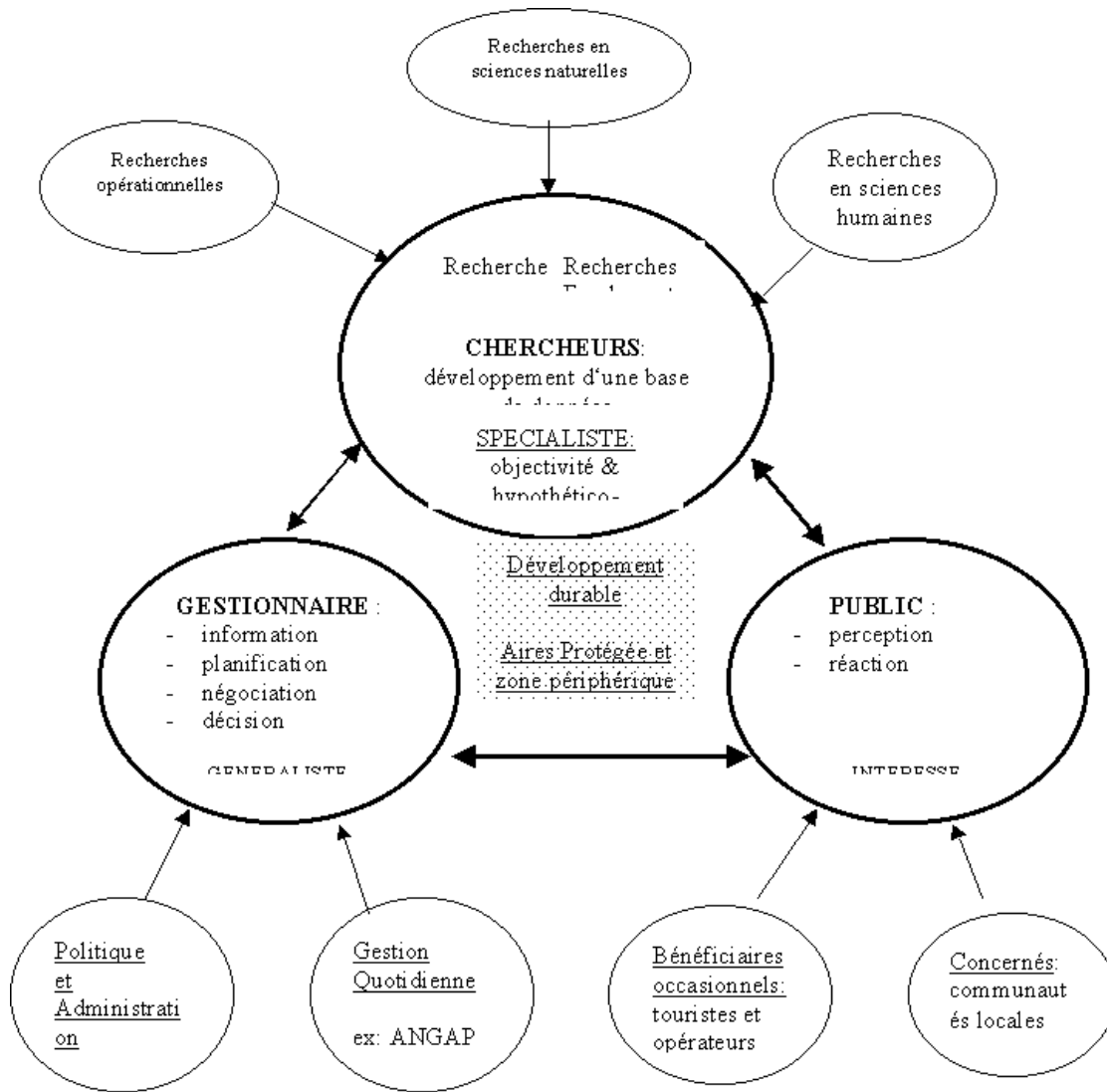
The five years of working on a joint venture to develop capacities, courage, trust and legal frameworks for local stakeholders has taught us many lessons. Local stakeholders must assume their future role as responsible and accountable shareholders. During this process of co-evolution with other partners from stakeholders towards shareholders, the Andringitra National Park ICDP has set a pioneering example. It serves as one of the foundation stones for a second phase functional systems approach to a Eco-regional Landscape Development Intervention (LDI).

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Figure 1



Mindmap: Approche systémique des groupes-clés de la conservation et du développement intégré pour un partenariat de consensus

Figure 2

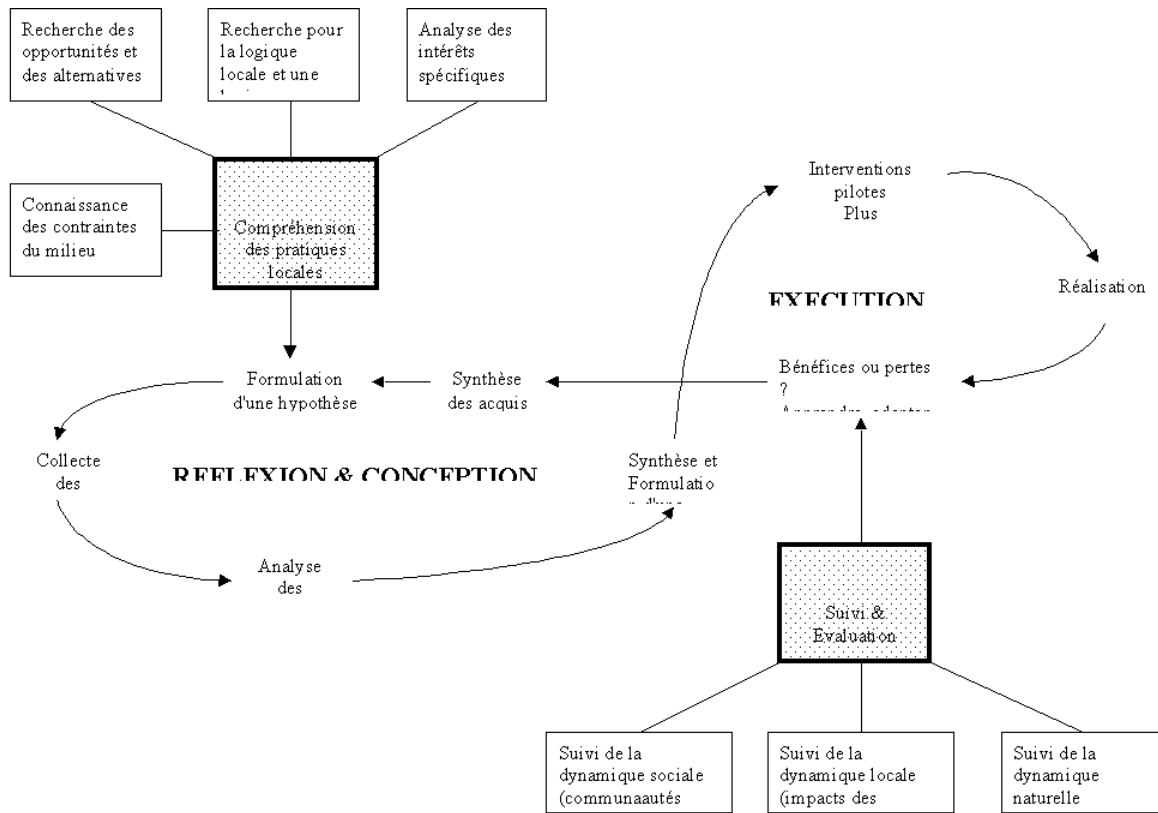


Figure 1: Approche systémique dans un cadre logique
Conception et mise en oeuvre dans le cadre d'un projet de
conservation et développement intégrés (PCDI)