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**AEA:** Association for Environmental Action

**APRD:** Action Plan for Rural Development

**AYC:** Awassa Youth Campus

**BC:** Basis Community (French COBA and VOI in Malagasy)

**BCD:** Basis Community Development

**BPAF:** Biodiversity and Protected Area Fondation (French FAPB)

**BST:** Bertelsman Stiftung Transformation

**CA:** Capability Approach

**CARE:** Cooperative Assistance Relief Everywhere

**CBD:** Convention on Biological Diversity

**CD:** Community Development

**CDA:** Community Development Approach

**CIFOR:** Center for International Forestry Research

**CO<sub>2</sub>:** Carbon Dioxide

**CMO:** Copyright Malagasy Office (French **OMDA**)

**CSR:** Corporate Social Responsibility

**EAI:** Environmental Accountability for Investments

**EAP:** Environmental Action Plan

**ECD:** Economic Community Development

**ED:** Economic Development

**EIS:** Environmental Impact Study

**EPA:** Environmental Protected Agency

**EPM:** Environmental Project Management

**FAM:** Forest Agreement Management

**FAPB:** Funding Protected Area and Biodiversity

**FDI:** Foreign Direct Investment

**FIM:** Foire Internationale de Madagascar

**FMC:** Forest Management Contracts

**FMRP:** Forestry Master Regional Plan

**FSL:** Forest System Logging

**GACA:** Green Awassa Collaborative

**GFCE:** Gross Fixed Capital Formation

**GOITC :** German Organization for International Technical and Cooperation (in German GTZ)

**HDI:** Human Development Index

**HIV/AIDS:** Human immunodeficiency virus infection and acquired immune deficiency syndrome

**ICDP:** Integrated Conservation and Development Project

**ID:** Investment Decision

**IDC:** Identity Card

**IISD:** International Institute for Sustainable Development

**IPGRI:** International Plant Genetic Resources Institute

**IPMO:** Intellectual Property Malagasy Office (French **OMAPI**)

**IUCN:** International Union for Conservation Nature

**LD:** Local Development

**LED:** Local Economic Development

**MAB:** Man And the Biosphere

**MACO:** Management Committee (French **COGE**)

**MATE:** Man And The Environment

**MIAR:** Malagasy Institute for Applied Research

**MIF:** Madagascar International Fair

**MNP:** Madagascar National Park

**MREIF:** Madagascar Rural Economic International Fair (French **FIER MADA**)

**NABSAP:** National Biodiversity Strategies and Action Plans

**NAEA:** National Association for Environmental Action (**ANAE** in French)

**NAMPA:** National Association to Manage Protected Area (**ANGAP** in French)

**NAMTH:** National Association of Madagascar Traditional Healers (**ANTM** in French)

**NEAP:** National Environmental Action Plan

**NEO:** National Environmental Office

**NGO:** Non-Governmental Organization

**NRI:** National Reserve Integrated

**NSCSD:** National Strategy for Conservation and Sustainable Development (French **SNCDD**)

**OC:** Organization Community

**PAC:** Protected Area Code

**PACA:** Participatory Appraisal for Competitive Advantage

**PES:** Payment for Ecosystem Services

**PhD:** Philosophy Doctorate

**PIC:** Prior Informed Consent

**PRA:** Participatory Rural Appraisal

**PROMIS-NT :** Poverty Alleviation and Support for Local Governance in the Nusa Tenggara Provinces

**PPP :** Public Private Partnership

**REDD:** Reduction for Emission on Deforestation and Degradation

**REDD+ :** Reduction for Emission on Deforestation and Degradation, Carbon Storage

**RFMP:** Regional Forestry Master Plan

**RSA :** Rapid Situation Analysis

**SIDA :** Swedish International Development Agency

**SLA :** Sustainable Livelihood Approach

**SLMRNR:** Secured Local Management of Renewable Natural Resources (French **GELOSE**)

**SRI :** Socially Responsible Investment

**SWOT:** Strength Weaknessess Opportunity Threats

**UNDP:** United Nations Development Program

**UNEP :** United Nations Environmental Program

**UNESCO:** United Nations Educational, Scientific and Cultural Organization

**USA:** United States of America

**USAID:** United States Agency for International Development

**USD:** United States Dollar

**VCF:** Vohimana Community Forestry

**WB:** World Bank

**WCS:** Wildlife Conservation Society

**WEF:** World Economic Forum

**WWF:** World Wide Fund for Nature

## INTRODUCTION

Introduction part gives an overview to the master thesis topic. General background and meanings about main terms such as investment, feasibility and opportunity will be provided. Hereafter problem definition, assumptions and objectives, followed by justification, relevance and limitation, research question and research methods, and closed by structure of the research.

## GENERAL BACKGROUND

The first part of the thesis establishes connection between the main terms as the title: "Investment feasibility and opportunity for the case of Vohimana Community Forestry". Since it has been a thesis, it became a reflexion to draw how to perform a new idea inside community level.

First of all, when we heard the term "*investment*" on the news, it means Foreign Direct Investment (FDI) or international or private donors. It's true but not false too. If we examine the richness and traditional knowledge of Vohimana, we can take an extended meaning of investment as proposed by International Institute for Sustainable Investments (IISD), and developed under the idea of Investment International Agreement (IIA), defined investment as every kind of asset such as claims, service and contracts, tangible and property rights, share of stock, trademark, design, production process, know-how, copyright, or business concessions for the case to exploit natural resources<sup>1</sup>.

Investment feasibility and opportunity for the case of Vohimana have huge potential of natural resources and value chain of forest activities. In more than two decades, it has been a source of life and medicine treatment for villagers and foreigners. Due to the challenges of climate change, environmental degradation and deforestation, some organizations advanced new wave of investment, the green investment which involve community in the scope of Socially Responsible Investing (SRI), and long term sustainable investment, required new standards of infrastructure and the participation of the poor to take part in decision-making and more responsible for long term vision<sup>2</sup>.

Secondly, investment requires money, time, know-how and expertise to do. Vohimana is a kind of experimental reserve, an essay project defined by some actors under the scope of conservation and community implications. Every year, some areas of forests are lost due to agricultural practice, savage exploitation of firewood and logging. Compared to Mantadia Park, Vohimana is not really

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<sup>1</sup> IISD, Mahnaz Nalik, 2009, Bulletin #1: Definition of Investment in International Investment Agreements, International Institute for Sustainable Development, Best Practices Advisory Bulletins  
[http://www.iisd.org/pdf/2009/best\\_practices\\_bulletin\\_1.pdf](http://www.iisd.org/pdf/2009/best_practices_bulletin_1.pdf)

<sup>2</sup> World Economic Forum, 2013, The Green Investment Report, the ways and means to unlock private finance for green growth ; A report of the green growth action alliance, Geneva, Switzerland, Published by WEF, committed to improving the state of the world :  
[http://www3.weforum.org/docs/WEF\\_GreenInvestment\\_Report\\_2013.pdf](http://www3.weforum.org/docs/WEF_GreenInvestment_Report_2013.pdf)

frequented by visitors across the year. This subsection tries to define inter-linkage between feasible investment and market opportunity of Vohimana natural product.

We have seen correct definition of investment, this concept lead to other concept, such as market, including the fundamental theory used in business world, designed market as physical place where buyers and sellers conclude to exchange goods, using contemporary support communication as ads, direct mail, e-mail, or messengers to the market; in return, they receive money and information about attitude and sales data<sup>3</sup>. By and large, the form of market in Madagascar is regular, almost once a week, and the form of rural market is organized inside an area or infrastructure build with advices of elite person. Specific goods are stalled and customers can buy some goods for everyday needs.

In addition the proposed investment definition by the World Economic Forum, as stated above, used the concept of Socially Responsible Investment (SRI), needs capacity building to be effective, training , research and development, in order to enable green and inclusive growth.

This meaning of investment is useful to locate what kind of investment package we need to perform in case of Vohimana place. And finally, we should take into account, rural market feasible in such a place and models from rural place in Madagascar. Rural market is a kind of commercial activity a source of income for rural households and job creation for villagers at the same time. As market opportunity, there are different products that can be sold at Vohimana, like medicinal plant, growing plant, banana, wild honey, jam, traditional clothes and handcraft products, wild mushroom, firewood and ginger. More other, medicinal and aromatic plant is very useful for pharmaceutical industry that is why investment is needed for all the processes of the thesis. Authors of medicinal plants in Africa pointed out that investment in supply and market development should be undertaken, given an assured market for indigenous medicinal products. New opportunities should be investigated and developed. Research should be carried out into the development of efficient packaging and storage plant medicines. Many plants originating from Africa have become sources of important drugs<sup>4</sup>.

## STATEMENT OF THE PROBLEM

The Second part introduces the area of the study, also the scope of the problem. Madagascar, an island located in South Indian Ocean, abounds a number of whopping natural resources, forests and water. A land that none other country doesn't have its endemic richnesses. From North to the South,

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3 Philip Kotler, 2002, Marketing Management ; Millennium Edition, Custom Edition for University of Phoenix, Printed in the USA by Pearson Custom Publishing  
[http://dl.ueb.vnu.edu.vn/bitstream/1247/2250/1/Marketing\\_Management\\_-\\_Millenium\\_Edition.pdf](http://dl.ueb.vnu.edu.vn/bitstream/1247/2250/1/Marketing_Management_-_Millenium_Edition.pdf)

4 Ernest Rukangira, Medicinal plants and traditional medicine in Africa  
[infohouse.p2ric.org/ref/40/39776.pdf](http://infohouse.p2ric.org/ref/40/39776.pdf)

there are many places that have high level of endemic richnesses such as Marojejy, Masoala Park, Zahamena, North Mananara, Andasibe, Ranomafana, Andringitra and Andohahela.

Since its Independence, Madagascar has been touched constantly by political crisis, and this situation affect the rural people, that their neighborhood forest has been severely endangered due to the practice of slash and burn practice locally called «tavy» , which reduces the forest cover almost hundred years. Repeated political crisis sink the country to disable macroeconomic performance in the world.

One of the regions that suffered of ecological degradation is the place of Vohimana an experimental natural reserve located in the 152 km from Antananarivo by the RN2 to Tamatave. The forest have been threatened almost fifty years by Betsimisaraka practices, the «tavy» Despite of organizations and researchers have been trying to teach local people, they already understand and aware the impact of tavy but facing the challenge of poverty, they practice tavy again. Forest and endemic species are suffering too much, but it will be difficult to change people's attitude. Vohimana lost 50% of forest area, reduced the natural habitat of lemurs, amphibious and medicinal plants, consequences may be disastrous.

Vohimana is the hill, crossed by travelers, train and the Ambatovy pipelines as well. Many kinds of activities may be disadvantages to preserve forest such as medical treatment, daily needs, firewood and logging. Since the NGO (Non-Governmental Organization) MATE (Man And The Environment) has built an Eco touristic lodge inside the forest, villagers have been starting many activities such as tourist guide, backpack carrier, essential oil production, honey collecting, handicraft production and few economic activities generated by value from forest to promote local economies. These are the reasons why it is important and useful to study investment feasibility and opportunity for the case of Vohimana Community Forestry. Meanwhile, neighbor people lived natural resources suffered by the degradation of their natural habitat, to find food become more difficult today than yesterday. There was an obvious reality obstacle confronting this proposition though people at Vohimana are farmers not traders, information are shared only by traditional systems, by Tangalamena to others and there is a lack of motivation, lack of participation when organizing workshop with key villagers.

## **PURPOSE, ASSUMPTIONS, AND OBJECTIVES OF THE STUDY**

To solve the problem formulated in the previous section, the thesis seeks to enrich people to improve their human well-being. Due to the thesis focused in rural place, the mentioned purpose would be achieved if we follow the suggestive assumptions:

- Local people should be allowed to become an economic agent with maintaining their own system and the positive characteristics for its functioning;
- Community should be involved to develop local market and participation each other;
- Local community should be enabled to organize themselves.

In assuming that rural people are poor that others can play a vital role to increase rural household income, the main objectives of this paper is to identify the market niche, the focal point to create business environment which have benefits or non-monetary benefits for villagers. In addition, further specific objectives include some components follows:

- To train farmers to become a professional traders;
- To create market tools with information opportunity, market infrastructure and training center;
- To create a value and supply chain of forest product and activities.

### **RELEVANCE, LIMITATION AND JUSTIFICATION OF THE RESEARCH**

Investment feasibility and opportunity for the case of Vohimana Community Forestry is an important topic for the following reasons, firstly it creates value chain of business environment and leadership behavior along community based approach and academic interactions. Some authors argued that « *powerful creator if income and employment, investment is the main driver of economic growth* » (Bernier and Simon, 2009)<sup>5</sup>. Secondly, it help designers to perform tools for sustainable conservation, economic activity in order to improve human well-being. Why study feasible investment and market opportunity because investment programs can be applied the relevance local investment and create monetary and non-monetary benefits for short or long term period. Activities can transform community level and create opportunity for job, education, knowledge and value-added activity. Thirdly, this research add knowledge and help to understand how rurals made conservation in their own perception, the community mechanisms, functioning and information sharing system. Finally, it helps to define what kind of investment packages we need to perform in case of Vohimana Community Forestry.

However, finding the concept of investment is more complex than macroeconomic concepts, it is possible to analyze local context by checking some capital components including, human, social, cultural, produced and natural. Some developing and emerging countries find their source of wealth

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5 Bernier and Simon, 2009, Initiation à la macroéconomie, Manuel, ECOSUP, Dunod, 9eme édition, pp499, Institut Français de Madagascar, Antananarivo



by investing in local place in the aim of maintaining sustainable society like Sweden, United Kingdom and the town of Sao Paulo in Brazil, and developed green growth.

The study is also limited by geographical location and our data collection depended on the availability of population to accept being interviewer, due to the numerous people made research inside the place and also, doing an interview is a waste time for others to disturb their everyday life.

## **RESEARCH QUESTION**

Research question are based on the introduction, problem statement, assumptions and objectives as mentioned above. This paragraph deals with the formulation of the central questions which gave an understanding to achieve objectives, even global or specific; some questions are identified and formulated in this section:

- What are the appropriate techniques to educate, train farmers as we know that more of them are an-alphabetic, and how to convince people about suggested process of information;
- How to create business guides, business environment, infrastructure of stalled market without imposing negative changes in the local system and take into account local needs, cultural identity and structural systems;
- How to train community workers about value of forest and derivative activities, the process of demand and supply chain in a sustainable way.

## **MATERIALS AND METHODS**

This section gives the summary of the materials and the proposed research methods to conduct the study. Different tools have used in order to answer research question.

The research design is divided into six parts beginning with random of literature, followed by different practical approach, then collecting data from library, doing a field trip with group of students, formulated results and interpret analysis, finally verify assumptions and objectives. To do so, various apparatus have been used during theoretical step such as paper reviews, books, journal articles, electronic library using internet browser, camera and voice recording used during field trip. During empirical stage, we used also books, research topic, questionnaires, case study, literature review, interviews, video camera and voice recording.

For the first part of answering the three questions are the interconnection between differences and similarities of descriptive characteristics of capacity building method. In this thesis, multidimensional methods are mixed; this can either on data collection and research design. In this case, it will consist of a literature review, theories and interview. During field research, holistic

approach has been used combined with different participatory methods and qualitative research. In addition, ways to collect data used observation method at the bottom up level, semi and unstructured interviews have applied with focus group and workshop. The knowledge that is obtained from literature is combined with expert view, best practices and interviews of focus group, key actors and researchers to define relevant issues.

The second part will consist of analyzing different interviews during different period to explore some results. The aim of the interview was to acquire information from local problem, local situation, point of view, local authorities, and problem about organizing workshop, ecotourism and economic activity, the loss of fauna and flora during an exact period.

### **FIELD RESEARCH ACTIVITIES**

Field research activities describe period of field trip, report of interview, and problems of data collection, key informants and focus group organization. It indicates also the problem meeting during realizing interview, workshop meeting with interviewers and the fulfillment method using the data survey.

### **STRUCTURE OF THE THESIS**

The thesis is organized as follows. In the Part One , Chapter 1, the reader will be introduced the theoretical and previous empirical results that are associated with historical overview of institutional schemes Chapter 2 describes materials and methodology to conduct and to perform the investigation. The second part divided into two chapters; first, the results will be presented in Chapter 3, which will then followed by discussions and recommendations in Chapter 4. Finally the summary and concluding remarks will be ending the research.

**PART 1 LITERATURE  
BACKGROUND, MATERIALS AND  
METHODOLOGIES**

## **CHAPTER 1. LITERATURE REVIEW ON FOREST CONSERVATION, HISTORY OF INSTITUTIONAL SCHEMES, COMMUNITY INVOLVEMENT, INVESTMENT FEASIBILITY AND LOCAL DEVELOPMENT**

Different literatures of forest conservation, community participation, investment proposals have been developed by numerous students around the world but, only a few can be implemented based on local context, community behavior, political systems or level of knowledge and factors in case of Vohimana Community Forestry. This section draws the fundamentals of literature background; explained by behavior research in a specific area. This section is organized as follows: starting with introduction, the institutional scheme from international level to the community application, the concept of local development as regional approach, the theory of investment in current economics thought, endogenous growth, the capability approach and theory of institution.

### **SECTION 1 INTRODUCTION**

First section, it will start with an overview of institutional schemes from international level to community application and the challenges facing the conservation today.

The second part gives a brief history of local development and its related theory. Examples are given to illustrate local development from developing countries, emerging countries and countries that are similar cases of Madagascar.

Then, basic theory of investment is provided and its implication to induce local development. Comparisons are given to draw our type of investment, value chain and institutional theory. Examples are provided from expert view, journal and scientific articles, review of publications of organization, success stories with an emphasis on natural resources conservation, medicinal plant and forest product.

After provided the basic theory of investment feasible and market opportunity, market of forest product and forest transition which answering the problem statement, assumptions and objectives. Different scenarios are given and examples are provided as a suggestion in our study.

Finally, literature background concerning endogenous growth, capability approach, medicinal plant and traditional knowledge are provided.

## **SECTION 2 THE INSTITUTIONAL SCHEME: FROM INTERNATIONAL CONVENTION TO THE CHALLENGES OF COMMUNITY APPLICATION**

This section gives an overview of legislation framework and fundamental policy to conduct local investment inside forestry community and the challenges affecting the assessment of this convention.

### **2.1 INTERNATIONAL CONVENTION TO LOCAL POLICY AGREEMENT**

The Republic of Madagascar has signed several conventions and laws, not only because of the adherence of United Nations but also, our biosphere reserve have an immense impact of climate regulatory of the south hemisphere. The objective of these conventions help to define the national strategy and plan to manage environmental area under the scheme of sustainable development , and to preserve endemic natural resources for a wise exploitation. These international instruments are in force at local, national and global levels.

Firstly, the beginning of the international policy of environmental conservation was the conceptual framework defined under international conferences is the UNESCO MAB (United Nations Scientific and Cultural Organization, Man And Biosphere). Since started in 1971, and reviewed in 1995, framework is focused into three concerns: conservation of biodiversity, genetic resources and ecosystems logistics for international network area of research. These findings have followed by the evaluative program made by IUCN (International Union for Conservation of Nature) which concluded important factors to manage Biosphere Reserves such as local community involvement, training and capacity building and information sharing and feedback benefits for locals due to conservation methods.

To have good results to manage biosphere reserves, they should involve local communities to participate in management process, they need training and capacity building and better opportunity for international communities to collect and sharing information among indigenous, and earn benefits for conservation methods<sup>6</sup>.

By the way, the MAB context was the basis of all conservation strategy for the next years such as CBD (Convention on Biological Diversity), the creation of UNEP, the Bruntlandt Report and the Durban Vision. Moreover, due to the lack and critics of this approach, some authors add something new to implement planning and management principles in spatial view of conservation land. The findings of Michel Batisse clarify the specification role of « *core area* » and the « *buffer zone*». The « *core area* »: « *should be representative of a major ecosystem of world significance, and be large*

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6 Martin F. Price, 1996, People in Biosphere Reserves : An Evolving Concept ; Journal of Society and Natural Resources, Taylor and Francis online, p9  
<http://dx.doi.org/10.1080/08941929609381002>

*enough to allow for in situ conservation of the genetic material of this ecosystem ».* And divided the «*first buffer zone* », «*around the core and would be used for education and training, as well as for manipulative research on conservation and ecosystem management*», and a «*second or outer buffer zone is recognized, which then serves as a variety of purposes, including experimentation on alternative land uses, education, training and recreation, and is managed-and possibly reclaimed for the benefit of local population while maintaining a healthy environment.* » These definitions remain the geographical network of input of managing protected area<sup>7</sup>.

Secondly, one of the international instruments and agreements that are focused in this paper is the CBD, which was born under the Rio Convention of 1992, and ratified by Madagascar on August 1995. According to the CBD, Art 15 Access to Genetic Resources stipulated on alinea 4: «*access, where granted, shall be on mutually agreed terms and subject to the provisions of this article* », and alinea 5: «*access to genetic resources shall be subject to prior informed consent of the contracting party providing such resources, unless otherwise determined by that party* <sup>8</sup>». If we understand that local elder people have traditional knowledge of the collect, processes of medicinal and aromatic plant, that some expected foreigners should inform local leader, in practice, in some ways, to inform the Ethnic Head of the village on accessing forest for the reason of exploring and collecting these medical resources.

Thirdly, after the CBD, the next binding agreements that should take into account are the Nagoya Protocol, which is a legal constraint to clarify the role of indigenous people to manage their natural resources. The Art 5 on fair and equitable benefit-sharing on the alinea 1 stipulated that «*in accordance with Article 15, paragraphs 3 and 7 of the Convention, benefits arising from the utilization of genetic resources as well as subsequent applications and commercialization shall be shared in a fair and equitable way with the Party providing such resources that is the country origin of such resources or a Party which has acquired the genetic resources in accordance with the convention. Such sharing shall be upon mutually agreed terms* », the alinea 2:«*Each Party shall take legislative , administrative or policy measures, as appropriate with the aim of ensuring that benefits arising from the utilization of genetic resources that held by indigenous and local communities , in accordance with domestic legislation regarding the established rights of these indigenous and local communities over this genetic resources , are shared in a fair and equitable way with the communities concerned, based on mutually agreed terms.*» and on alinea 4:«*benefits may include monetary and non-monetary benefits , including but not limited to those listed in the*

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7 Michel Batisse, 1987, The Biosphere Reserve : A Tool for Environmental Conservation and Management ; journal article archives [pdf.usaid.gov/pdf\\_docs/PNAAP887.pdf](http://pdf.usaid.gov/pdf_docs/PNAAP887.pdf)

8 United Nations, 1992, Convention on Biological Biodiversity, Art 15, p9-10 <http://www.cbd.int/doc/legal/cbd-en.pdf>

*Annex.*» This protocol is more specific than the CBD, which clarifies the role of local community under the scheme, that each party have « win win » situation for the utilization of genetic resources. Finally, the Vth World Parks Congress in Durban, South Africa, known as « *Durban Vision* » creating new management of protected areas systems, where government entities, public private sector, international partner organizations working in conservation and biodiversity in Madagascar.

## **2.2 THE IMPACT OF BINDING LAW AT NATIONAL POLICY FRAMEWORK**

The previous paragraph outlines the international convention which Madagascar was signed and implemented an adaptive legislation under national context. This second section discusses the national context of environmental policy framework.

### **2.2.1 Historical overview**

Even, since the kingdom period, the successive kings was tried to define legislation codes to preserve Malagasy forest (Code of 305 articles of 29 March 1881) and avoided forest destruction due to fire, coal production, drying bamboo and house constructed inside forest area. During the colonial period, forest and environmental legislation have changed, and at this time, they already tried to avoid brushfire, slash and burn practice and the massive exploitation of forest. Due to savage forest degradation, they formulated the existence of classified forest and Natural Reserve Integrated (NRI) that was the beginning of protected area by the decree of 31 December 1928. Which 10 reserves were created for more than 597.000 ha of surface, and it was managed by National Parks and Natural Resources Conservation, until the first republic. Despite the fact that, there was an awareness to preserve environmental ecosystem, the destruction of forest were very strong during the second republic of 1972 due to the adoption of the new way of « neocolonialism ». The forests were overexploited that the slash and burn practice touched the rural area, until 1982, which the State published a new model of strategy, the National Strategy of Conservation and Sustainable Development (NSCSD). This policy corresponds with the impact of international convention (UNESCO-MAB) and acknowledged the local community involvement to manage natural resources and protected area<sup>9</sup>.

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<sup>9</sup> Martin F. Price, 1996, People in Biosphere Reserves : An Evolving Concept ; Journal of Society and Natural Resources, Taylor and Francis online, p9  
<http://dx.doi.org/10.1080/08941929609381002>

### **2.2.2 Environmental and forest policy in Madagascar.**

Although our ancestors knew the value of the natural forest, almost, more than half of the forest cover was vanished last hundred years due to population growth and the practice of forest clearing. Even a fringe of indigenous people were aware about result of fire processed, they have still practiced traditional method and misuse of the forest.

Since the 1990s, after signing the CBD, and due to pressure of conservation agencies and international institution (IUCN, WWF, USAID and World Bank), the government of Madagascar elaborated the NEAP<sup>10</sup> (National Environmental Action Plan) which divided into three steps, that the first phase started on 1991 which characterized by the creation of specialized institution such as National Office of Environment (NEO) to coordinate the EAP (Environmental Action Plan), the National Association for the Management of Protected Area (NAMPA) to manage protected area and the Association for Environmental Action (AEA) which help soil management. This period also marked by the creation of a few dozen protected areas using ICDPs (Integrated Conservation and Development Project) tools to manage area. To follow implementation of this policy, the state promulgated numbers of law such as the Environmental Charter<sup>11</sup> by decree of 90-033 of 21 November 1990 (this decree was twice modified , law 97-012 of 06 December 1997 and law 2004-015 of 19 August 2004). This decree defined the environment as one of the prior policy of the State, the main objective was to conciliate population with environment inside sustainable development and specific objectives such as human resources, sustainable development with good natural resources management; restore, conserve and manage Malagasy biodiversity heritage; improve urban and rural livelihood; maintain people's growth and resources; improve environmental management tools and resolve land tenure problems. It also pointed that decentralized institution should implement this policy like Decentralized local authority, NGOs, traders and citizens. The end of this first phase revealed some problems such as difficult to apply due to inadequate to the reality of the target place, local communities did not have free access to natural resources under project, and only a few stakeholders have taken advantages of this policy.

The first phase was achieved on 1997, and the second phase began with changes and innovation, the NEAP 2 was acted between 1997 until 2003. This stage was characterized by a naturalistic and more centralized management, taking into account the involvement of locals and stakeholders to manage natural resources. They have also permitted biological inventories, planning and analyses, marketing research, geographic information systems and land tenure action at the local, regional

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10,11 USAID, 2008, Madagascar Environmental Threats and Opportunity Assessment, Update Report [transparentsea.co/images/8/88/USAID\\_Threats\\_Madagascar.pdf](http://transparentsea.co/images/8/88/USAID_Threats_Madagascar.pdf)



and national levels. Number of laws was promulgated such as MECIE<sup>12</sup> decree or EAI (Environmental Accountability for Investments), GELOSE<sup>13</sup> law or Secured Local Management of Renewable Natural Resources (law 95-025 of 30 September 1996), between authorities, basis community voluntary association<sup>14</sup> (COBA) and environmental mediator; the Forest System Logging<sup>15</sup> (law 97-017 of 16 September 1998), the Protected Areas Code<sup>16</sup> (law 2001-005 of 11 February 2003), or the simple management agreements of FAM<sup>17</sup> (Forest Agreement Management) between two parties. Concerning the legal decree of MECIE (decree 99-954 of 15 December 1999) obliges all investors to engage an environmental program, study of environmental impact, a structured national office, NEO (National Environmental Office) delivered environmental permit and imposes Environmental Project Management (EMP), and the environmental quietus to define the references terms of Environmental Impact Study (EIS). This decree also, outlines the list of civil project, including building construction, tourism accommodation and trade infrastructure. Then the GELOSE law concerns legislation plan to manage grooves, fisheries and forest resources at the top-down system. It consists of promoting and transfer the management of renewable resources to the basis community that it works like an NGO (Non-Governmental Organization). The members of the NGO have governed by internal rules called “*the Dina*”<sup>18</sup> that the management framework has elaborated by an official mediator and used as tools. The benefits are equitably sharing between members, local authority and fund providers. After that, concerning the Forest system logging, it was a decree to regulate exploitation of forest for trade purpose that the management is under the basis community (see GELOSE on Annex), eventually the contract is confirmed by the MECIE scheme with management framework delivered from the host ministry. The decree 2001-122 of 4 February 2001 stipulated the Forest Management Contracts (FMC) is subject to conform to GELOSE, national forest policy, Forestry Master Regional Plan (FMRP), the MECIE and management plan framework. Moreover, the FMC is an innovative approach to transfer management to basis community about forest surface, economic value of forest products, to protect forest and basic needs from forest (medicinal and aromatic plant, food collecting, etc.)

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12 MECIE Decree (French Word, Mise En Comptabilité des Investissements à l'Environnement or Environmental Accountability for Investments), Ministry of Environment, Ecology, Sea and Forest

13 GELOSE law (French World : Gestion Locale Sécurisée or Secured Local Management), Ministry of Environment, Ecology, Sea and Forest

14 GELOSE law (French World : Gestion Locale Sécurisée or Secured Local Management), Ministry of Environment, Ecology, Sea and Forest

15 Forest System Logging law, Ministry of Environment, Ecology, Sea and Forest

16 Protected Areas Code, Law 2001-005 of 11 February 2003, Ministry of Environment, Ecology, Sea and Forest

17 FAM (Forest Agreement Management ,French World, Gestion Contractualisée des Forêts.), Ministry of Environment Ecology, Sea and Forest

18 Gildas Andriamalala and Charlie J. Gardren, 2010, The Use of « dina » as a natural resource governance tool, lessons from Velondriake,

South West of Madagascar., Tropical Conservation Science, 3: 4, pp 447-472, Mongabay.com, Open Access Journal  
<http://journals.sagepub.com/>

To end this section, it will be necessary to outline the Protected Area Codes, this law defined protected area as « *delimited terrestrial, coastal, marine (open seas, and brackish and continental waters) or aquatic territory, whose features represent a particular value, especially one that has biological, natural, aesthetic, morphologic, historic, archaeological or cultural importance, and that because of this value and the interest of all, necessitates preservation against all natural degradation and against all anthropogenic intervention that risk alteration of the ecological features, composition and evolution.*» Protected area can be classified into three categories: strict nature reserve, national parks and special reserve. The first is a kind of area which a representative of a natural ecosystem with the goal of protecting the fauna and flora within a certain perimeter, the second is an area with a goal of protecting and conserving the natural or cultural heritage, while at the same time presenting educational and recreational opportunities, and the third categories differed as an area created primarily with the goal of protecting an ecosystem or a specific site, or a particular plant or an animal species. Besides, other categories could be created among these characteristics and specifications. Moreover, a protected area is belonging to the State that the management can be held with an autonomous organism with respecting National Policy of Environment. The objectives of creating protected areas are the nature conservation, research, emphasizes natural and cultural heritage, education and playtime for people, to promote ecological tourism, economic and sustainable development. These protected areas are divided into two zones, the first zone called strict conservation zone where the accesses are strictly regulated and a buffer zone which human activities are restricted to assure a better protection of this area. Yet, the second phase met problems due to difficult application to local realities. In addition, numerous management contracts were signed with little real mediations and secure land tenure, concluded little success to promote local participation. This phase was financed by international donor's relatively short timescales. The staff respect procedures and managerial aspects but did not observe the local systems and their impact that did not respond sustainable development schemes.

Before entering the third phase, this paragraph show brief summary of the case of Vohimana. As experimental reserve, it is a kind of protected area that the management was taken by NGO, the Man And The Environment, an agreement signed within the authority of Toamasina and Ministry of Environment, Ecology and Forests. Since 2002, the MATE take the responsibility to undertake a development project with the local indigenous the management of 1600 ha of the forest like conservation of protected zone, building an ecological accommodation, create economic activities like collecting essential oil, production handicraft clothes with local women, implement sets of agricultural activities, health center, education. The aim of the project is to save the forest surface and promote people wellbeing in the sustainable way. The NGO developed also a specific program

with students and researchers to study the behavior of community and the richness of biological diversity. Around this protected area, the peripheral zone have lost their surfaces due to wood cut, lemurs hunting, firewood, illegal exploitation of wood and medicinal and aromatic plant. Actually, the passage of Ambatovy's pipeline destroyed 10% of the forest area (MATE, Antsakaviro).

Despite of the government have developed tools and policy, our forest surface continue to diminish when there are numbers of protected area recorded as a sensible zone to be observed. The third phase of NEAP 3 (2003-2008) was intended to strengthen the environmental agenda and expand the protected area network. The third phase follow the objectives of two phases and focused to expand policy of NEAP 1, a strong strategies have adopted and based on participatory based approach with coherent program and real collaboration between actors, respect local context of the rural area, and invite gender activity and empowerment. The objectives of NEAP are to sustain natural resources and the management will be undertaken indigenous people in specific zone. This people must fully understand the value of renewable resources and biodiversity management skills. In case of forest conservation, NEAP 3 pointed out to stop forest degradation by implementing conservation sites and support farmers association to avoid bush-fire and slash and burn control, management transfer of the forest location, increase forest cover and create reforestation reserves, monitory and valuation of forest activities and capacity building of key actors. Also, NEAP work closely with over tools like APRD (Action Plan to Rural Development), and other institutional programs like Madagascar National Parks (MNP), Environmental Protected Agency (EPA) , National Office of Environment (NOE), Biodiversity and Protected Area Foundation (BPAF), sustainable management of natural resources by the involvement of local community (Tany Meva Foundation) and the department of forest observatory.

Actually, since 2009 until now, environmental policy have focused on PES (Payment for Ecosystem Services) and REDD+ (Reduction Emission from Deforestation and Degradation, carbon storage) systems, to more sustainable management and such tools involve communities to practice business on forest value. PES have been developed by international actors and market based instruments must be benefits at international, national and local level through specific projects to support biodiversity, carbon market and watershed. In case of Madagascar, forest provides ecosystem services to locals such as forest products, regulates climate and maintain quality of soil. The five targeted field were redefined to some exclusive area to stop deforestation and degradation, and to contribute on carbon storage such as Eastern Region, Makira Park and the Corridor Ankeniheny Zahamena, the Corridor Fandriana-Vondrozo. As well as managed by conservation agencies, this project take part also in REDD+ program. REDD+ is a second form of PES where carbon is stored and sold in a specified market. In Madagascar, carbon PES have been

developed by IC (International Conservation), WWF and WCS (Wildlife Conservation Society), the multinational companies (DELL, Mitsubishi and Air France), consist of these entities to compensate their CO2 emissions by funding the protection of Malagasy forests on the voluntary carbon markets.

### **2.3 INVESTMENT LAW**

The previous paragraph outlines legislation aspect of environmental activities inside the Malagasy territory and the institution to undertake each scale. A part from law of environment, investment must be overview to set up activities in some specific cases. According to the Investment Law of Madagascar<sup>19</sup>: «*Investment means a set of financial resources including, inter alia, capital assets, advance on current account and loans allocated to carry out an economic project, whether it is infrastructural, commercial, handcrafted, service oriented, agricultural, tourist or industrial, as well as products carried out by investing these resources and allocated to accomplish an economic project.* » Without distinction of nationality, this law stipulated that even it is an adult person (21 and more) or a legal entity, is free to invest and settle down on national theory, in accordance with the laws regulation in force, subject to provisions applicable to some activity sectors like banking, insurance, mining, oil and gas, telecommunication, medical, paramedical and pharmaceutical activities. Moreover, the EDBM (Economic Development Board of Madagascar) is the public institution in charge of promoting, facilitating and speeding up the approval of processes and delivers document to set up a business. Also, it will be the technician mediator to take in charge disputes between competitors or between stakeholders.

### **2.4 THE COMMUNITY OF VOHIMANA: INFORMATION AND ORGANIZATION PROCESS**

After debating national legislation and international framework, we should take into consideration the local policy of Vohimana. This kind of Betsimisaraka grouping is governed by a dualism of organization. On the one hand there is a head of village who represents the administration, for this case, we call this person « *the president of fokontany* », who occupies all the administration documents like certified papers for location, work, or behavior. He will also inform and organize meeting inside community about news from Antananarivo Administration Center, Alaotra Mangoro Region or Toamasina District. And on the other hand, there is a Tangalamena, a descendant of king linages, who takes an important hierarchical statutes inside the village. The process of information or to share information inside the place should be done step by step, every time and many time than

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19 Investment Law, Decree n° 2007-521 of 11 June 2007, EDBM (Economic Development Board of Madagascar)

others, the first step of information sharing the foreigner did is to meet the Tangalamena to talk about something like to do a survey, local workshop or interviews after that they can inform the population about news, interview or workshop. Even for the surrounding villages, the people would not wish to hear you if we didn't have a consent from Tangalamena and also from the Elder of the village.

As it is a form of traditional Malagasy society, this community is governed by traditional rules, the « *dina* » which statutes conflicts, norms and agreements between the «*fokonolona*» and also national regulation like law, decree and contracts. The « *dina*<sup>20</sup> » regulates also, the basis local assembly like front over association, cooperatives and organization. According to some authors, traditionally, « *dina* » is a social norm or code of conduct which regulate human interactions inside community. It is a voluntary rule, applies and performs individuals inside community, by the form of oral customs. This *dina* is not a formal law but has effect at local level because it is from local people, and respected by members

## 2.5 CHALLENGES

The previous paragraph outlines the legislation scheme to perform our subject; nevertheless there are some constraints that would need reflexion.

When we thought the subject into reality, the first reflexion we thought are human motivation, because everything which happens in our nature is caused by human, short or long term, with numerous reasons and complications. According to motivation theory<sup>21</sup>, our decision is influenced primarily by some hierarchical needs that the first is the physiological needs (breathing, food, water), the second is that human need to be safe (security of body, employment, resources, morality, family, health, property; the third human needs is human need love and to be loved, the fourth is that sometimes we need esteem, confidence, achievement, respect each other's and self-actualization on problem solving, morality, creativity or spontaneity. The two human needs must be deepening because; we thought it influenced all human decision, taking and reaction. People at Vohimana are human and their needs must be searching food for their family every day, find some cure when someone had sick, they are rural also. When we say rural in opposite of urban, there is a lack concerning their basic infrastructure like drinking water, safe, employment and resources. Malagasy people are concentrated at rural region, poverty is extreme and population is suffering so

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20 Gildas Andriamalala and Charlie J.Gardren, 2010, The Use of « *dina* » as a natural resource governance tool, lessons from Velondriake, South-West of Madagascar; Tropical Conservation Science, 3:4,447-472, Mongabay.com, Open Access Journal, [http://tropicalconservationscience.mongabay.com/content/v3/10-12-20\\_447-472\\_Andriamalala\\_&\\_Gardner.pdf](http://tropicalconservationscience.mongabay.com/content/v3/10-12-20_447-472_Andriamalala_&_Gardner.pdf)

21 Em Griffin, Chapter 10: Hierarchy of Needs; A first look at communication theory, <http://www.afirstlook.com/docs/hierarchy.pdf>

much due to the socio-economic and political crisis for the last four years. A fringe of forest community is struggling to overcome these chronic cases. Madagascar is one of the poorest countries in the world, our GDP per capita reaches US\$ 421 (World Bank, 2010), 76,5% of households live under the poverty. But this poverty causes damages to our natural environment, forest degradation are caused by human activities. We can see that they use forest like source of everything: arable land, medicinal treatment, raw materials on handicraft, raw materials of essential oil, source of income like ecotouristic activities. When production of harvesting are bad, they came back to forest to practice «*tavy*», a kind of Betsimisaraka traditional culture which cultivate cereals by slash a bit surface then burnt it. After the cultivation, the soil is exhausted and the production declines from year to year.

The Challenges we face today are the forest degradation, the poverty of rural household, market failure, food insecurity, education, medical treatment, loss of genetic resources, etc. The loss of forest surface affects human activity, fauna and flora. By human activity, basic needs produced by forest surface decreased (rice culture, cassava culture, ginger, etc.). By fauna, ecosystems of animal are threatened, the mechanism of Mother Nature trained to vanish after years. By flora, endemic medicinal plants useful for cure are vanished. At the community level, the impact may be soft but there is a change on climate regulation, water cycle, and oxygen cycle and so on. At national level, rainfall decreased annually, there is a trouble on the cultivation. Eventually, at international level, there are regional impacts of cyclones from Indian Ocean, causing dramatically damage especially the islands around Madagascar.

### **SECTION 3 THE CONCEPT OF LOCAL DEVELOPMENT**

The previous section drawn the institutional scheme signed by Madagascar with different parties over international convention and the tools to apply at community level. The next part of the section defines various concepts that affects local environment, to begin with it will be useful to provide background of local development, and then we propose various concept to define other form of development as follows, local economic development and basis community development.

#### **3.1 THE LOCAL DEVELOPMENT THEORIES**

Local Development was known since industrial revolution in Europe that the concept was developed by the success stories of Silicon Valley Authority about informatics activities in California in the 1980s. When in late 1990, economists, researchers or planning developers were integrated local development as a new way to alleviate poverty and induce economic activity.

There is a variety of different concept to approach local development in the literature that we can take some relevance. Theories of local development identify the factors to influence costs and prices or production processes lower than they are elsewhere. Then factors may be exogenous to the local context or endogenous which arose and developed inside the area and enable to initiate a process of self-propelling development. Exogenous factors may be the presence of Foreigner Company or external authorities while Endogenous factors might be entrepreneurial ability and local resources of production (labor and capital), the decision-making capacity of local economic and social actors to adapt with change and innovative production process and also earned knowledge and information<sup>22</sup>.

### **Example 1: the implementation of Local Development in Montreal**<sup>23</sup>

One of the most successful stories of local development was the strategy plan amplified by researchers and universities in Quebec and adjusted for the town of Montreal. Practically developing countries like Canada and USA used their specified terms as Economic Community Development (ECD). This ECD touched economic dimension to promote industrial production, selling goods and services; local concentration which implied the value of local resources, combining partnership approach within the community. ECD is a public policy tool to insert development with marginalized group of people, and involve community in the basis of activity. The objectives of local development is to improve living space of community to get benefit from nice and healthy environment and, secondly to offer social and cultural opportunity inside the place where live and also, to find a way to increase standard of living in order that each members of community could work and earn income to take advantages with job creation and wealth sharing. This plan also, pointed out that the best way to implement local development depends on a prior stages regrouping in three: the existence of local community, partnership among them and favorable environment to take part in the task.

### **Example 2: Management of protected area: a tool to engage basis community by conservation agreement**

To implement realities, constraints or to realize management and sustainable planning for policy conservation, an agreement was signed between International Conservation and the Basis Community (COBA) of Corridor Ankeniheny-Zahamena and Ambositra-Vondrozo. The aim of this

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22 Roberta Capello, 2011, Location, Regional Growth and Local Development Theories ; Firenze University Press, Aestimum 58, pp1-25  
<http://www.fupress.net/>

23 Roger Cadieux, 2002, Local Development, workshop of the Montreal Summit  
[ville.montreal.qc.ca/pls/portal/docs/.../Developpement\\_local.pdf](http://ville.montreal.qc.ca/pls/portal/docs/.../Developpement_local.pdf)

agreement is to preserve and protect natural resources, with benefit sharing among communities. To involve villagers is one of the requirements to assign management planning into biodiversity conservation. This agreement help to manage a unit of protected area and it gives opportunity on technical, organizational and institutional capacity building among participants. This project have begun in 2007 with 10 groups of Maroseranana location, now, there are 35 groups and NGO partnership to manage protected zone. Their long term vision can be benefit for locality to earn income from REDD policy action<sup>24</sup>.

### 3.2 THE LOCAL ECONOMIC DEVELOPMENT

As started before, this part of the section describes another theoretical background used similarly to define specific local development. This part of the work, comments other terms used to clarify methodological approach inside regional clusters. A various developing countries and institutional organization apply this method to conduct project management or capacity building to local leaders. According to some findings, Local Economic Development (LED) is an approach into local or regional development. It develops idea of partnership, management of existing resources; develop new institutions and local systems. It also stimulates growth, encouraging competition, create jobs opportunities. LED is a process where local government, public and private sectors, community based groups, civil society, NGO partners work and collaborate together to manage local resources by creating new employment and business opportunities to achieve sustainable growth and development, that the results can be a better welfare<sup>25</sup>.

At global level, the World Bank argued that LED<sup>26</sup> offers local government, the private and non-profit sectors, and local communities the opportunity to work together to improve the local economy. It focuses on enhancing competitiveness, increasing sustainable growth, employment generation and ensuring that growth is inclusive. Local Economic Development (LED) encompasses a range of disciplines including physical planning, economics and marketing. It also incorporates many local government and private sector functions including environment planning, business development, infrastructure provision, real estate development and finance. This proposal seemed no difference to Local Development because they involve community at bottom up approach and by introducing economic background, it became a government policy framework

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24 Ando Rambeloso and Bruno Rajaspera, July-September 2011, Pactes de Conservation, un outil pour la responsabilisation des communautés locales ; Conservation International, Songadina n°10, Trimester Newsletter, French  
<http://www.conservation.org/global/madagascar/Documents/Songadina/Songadinal0.pdf>

25 Takalami Ramakumba, 2014, Participatory Appraisal of Competitive Advantage (PACA), Approach in Local Economic Development ; Development Practice, 24:7, pp 10, Taylor and Francis Online,  
<http://dx.doi.org/10.1080/09614524.2014.953036>

26 World Bank  
<http://www.worldbank.org/urban/led>



defined at national level and implemented at local level, and used step by step as a project management; This definition is nearer than our topic because it stress a strong partnership of working together both the package of local authority , Public Private Partnership (PPP), civil society without leaving the gender. And decision making is started among collective approach by each cluster. Local Economic Development (LED) is more sustainable it encompasses a range of disciplines including business, environment, investment, marketing and infrastructure. Community participation should belong to an institutional organization and used a publication tools to refer activity.

### **Example 3: Local Economic Development experiences in Nusa Tenggara<sup>27</sup>, Indonesia**

In Nusa Tenggara, the eastern part of Lesser Sunda Islands, located in eastern Indonesia. This place is administratively divided into two provinces, in the west Lombok, and in the east, Sumbawa. Indonesian Department of Home Affair, the German Organization for International Technical and Cooperation (GTZ), in cooperation with regional government, local actors and private sector launched a program called « *Poverty Alleviation and Support for Local Governance in the Nusa Tenggara Provinces (PROMIS-NT)* ». The stakeholders work to build the capacity of local government, local parliaments, and NGOs to carry out poverty alleviation tasks in an autonomous and effective way. Due to the challenges of poverty and the use of traditional method on fishing activities, poor soil fertility , low precipitation and natural disease, poor people and micro and small medium enterprises have limited access to capital , productive land, physical and social infrastructure. To achieve the goals of regional autonomy, the program consists of supporting the local economy with coherent strategy and active participation of poor people. The PROMIS-NT, is aim to alleviate poverty of two projects, «*self-help group oriented poverty alleviation*» and «*support for local government*».

Local Economic Development became a cross sector issue in the activities of local stakeholders at district level. Since 2002, they have identified economic potentials and started dialogue between public and private sector, members of each economy sector. One of the major components of this strategy is to create healthy investment and business climate through creating incentive condition to attracting domestic and foreign investment to generate economic growth and improve the welfare of the local inhabitants. Some of the policies used to stimulate investor interests (business climate) are listed bellows:

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27 Astia Dendi et al., December 2004, Alleviating Poverty through Local Economic Development : lessons from Nusa Tenggara, GTZ, Jakarta <http://www.bdsknowledge.org/>

- Cost factor includes the transparent and efficient system of licensing and taxation, efficient and adequate infrastructure (transport, telecommunications, energy and water), competitive local labor, and image and perception of the culture of good governance;
- Economic dynamic factor where investors will be able to see economic basis potentials and the regional experience in the primary and secondary sector;
- Risk factors including macroeconomic stability and predictability, effective institution providing guarantee of property rights and contracts;
- Developing human capital through the availability of workers with qualification that match market needs.

The partnership between local government and private sector support measures including the development of human capital by providing affordable education for general public and the poor people, providing training services to job seekers and give coupons (vouchers) to poor families, job seekers and actors to receive training that meets demands of the job market.

### 3.3. THE BASIS COMMUNITY DEVELOPMENT

Since ancient period, communities play a vital role to organize an area, or to preserve natural resources like forest, land, coastal or marine. Traditionally, during the kingdom period, the monarchy has award the value of forest, they use community and neighborhood people living near the forest to protect their territory. In Malagasy term, they use *«fokonolona»* to describe group of people *«Basis Community»* (BC, COBA or VOI) which are a direct lineage of collective ancestors or ethnics, living in one place. Inside this structure, they respect the hierarchical systems of elders that the direct descendants of the king, who still alive, *«Tangalamena»*, organize assembly and decision making under social cohesion.

Various definitions have been used around the world to place community in the center point to implement effective local development and sustainable use of forest. By and large, community is defined as a group of people sharing a common purpose, who are interdependent for the fulfillment of certain needs, which live in close proximity and interact on a regular basis. There are shared expectations for all members of the group. In a community, there is a sense of cooperation, commitment of the group welfare, willingness to communicate openly and responsibility to help each other. The leaders strive to influence and take responsibility for their actions<sup>28</sup>. Similarly, this

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28 Maimunah Ismail, 2009, Corporate Social Responsibility and its role in Community Development : An International Perspectives ; Taylor And Francis Online, The Journal of International Research, 2: 9, p11  
[www.sosyalarastirmalar.com/cilt2/savi9pdf/ismail\\_maimunah.pdf](http://www.sosyalarastirmalar.com/cilt2/savi9pdf/ismail_maimunah.pdf)

definition can be extended with the development components which change the purpose of community task. Even omit the term «*basis*», Community Development (CD) refers to initiatives undertaken by community with partnership, an external organization and corporation to empower individuals and groups of people by providing these groups with the skills they need to effect change in their own communities. Moreover, it expresses values of fairness, equality, accountability, opportunity, choice, participation, mutuality, reciprocity and continuous learning. Internationally, United Nations Educational Scientific Organization defined Community Development<sup>29</sup> to describe processes by which local communities can raise their own standards of living. These processes include the organization of establishment of services, example for social welfare, health protection, education, improvement of agriculture, development of small-scale industries.

As regarding the previous chapter, to be effectiveness, development theorists argued that local participation in project development is a key element of any successful Community Development project<sup>30</sup>. In Madagascar, Basis Community Development (BCD) can be called by COBA or VOI; it describes the same process of basis which indicates geographical location where villagers are belonging.

#### **Example 4: Case study of the management transfer of urban municipality of Arivonimamo II**

Municipality of Arivonimamo is located at forty km in the RN1 direction of the west of Antananarivo. The zone was covered by 312km<sup>2</sup> of tapia forest (about 2500 ha). Tapia is an endemic tree in the Highlands of Madagascar. This is the preferred plant to develop savage silk and produce best quality of shroud. The economic activity turn around product from tapia forest about silk and also collecting mushroom. Before implementing management transfer, forest was threatened by savage use of firewood, bush-fire and silk cocoons. Due to the impact of deforestation and siltation of rice, Basis Community took in charge management of the forest. To begin, they mobilize and organize themselves. Now, 18 groups had followed the initiatives. Actually, there are 19 COBA which defined objectives and planning to strengthen relationships and cohesion under the union. Decision are taken among members and convinced technical and financial partner. The NGO SAHA<sup>31</sup> takes the opportunity to support technically and financially the project by accompany the transfer process, educate members by capacity building on marketing and trade negotiation and

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29 UNESCO, June 1956, The Definition of Community Development; Working Paper UNESCO/3, Paris  
<http://unesdoc.unesco.org/images/0017/001797/179726eb.pdf>

30 Alex Conley and Ann Moote, February 2001, Collaborative Conservation in Theory and Practice: A Literature Review; Udall Center Publications, University of Arizona, p34  
[http://udallcenter.arizona.edu/publications/epp/pdfs/2001\\_conley.moote\\_collaborative\\_conservation.pdf](http://udallcenter.arizona.edu/publications/epp/pdfs/2001_conley.moote_collaborative_conservation.pdf)

31 Randrianarisoa A. et al., April 2008, Des Effets de la Gestion Forestière par les Communautés Locales de Base à Madagascar : cas d'Arivonimamo et de Merikanjaka sur les Hautes Terres de Madagascar ; CIFOR, SAHA and Madagascar Intercooperation, Workshop on Forest Governance and Decentralization in Africa in Durban South Africa, French  
[http://www.cifor.org/publications/pdf\\_files/events/documentations/durban/papers/Paper18Randrianarisoaetal.pdf](http://www.cifor.org/publications/pdf_files/events/documentations/durban/papers/Paper18Randrianarisoaetal.pdf)

finally, implement infrastructure system by building water sanitation supply, dam, planting potato and green pea.

There is a growing recognition that successful long term development remains on local as a geographical dimension and imply active participation of villagers. This participation integrated and mobilizing even gender and also public authority to rearrange local institutional organization under belonging on a cooperative, handicraft association, public private partnership or social enterprise.

## **SECTION 4 THE THEORY OF INVESTMENT**

Although the previous section has elaborated on the various concept of local development, the next part explores the concept of investment. It is important to examine some of major background including theoretical investigation of investment and its related concept of human and natural environment.

This section introduces investment as the topic, the main reflection of this term used in modern economy and the context of forest resources and community development.

To do so, I will explore theory of investment behavior, choice of investing regarding the opportunity, the way of investing on human, social and natural capital, the background of monetary and non-monetary benefits.

### **4.1 INVESTMENT: DEFINITION AND THEORETICAL BACKGROUND**

Generally speaking, investment is closely to reflect wealth of the firm, interest's rates, cash flow and net present value. To define, investment (Gross Fixed Capital Formation) includes all tangible and intangible assets used in a production process.

Investment meanings are clarified on previous chapter, but it is necessary to refer the aspect of Keynesian theory of investment<sup>32</sup> which focused on the lender's risk and borrower's risk. This theory stated that lenders became less motivated due to the less importance use of interests. Yet, the cost of investment includes some external finance expenses that need to be compensated. Consequently, a firm should possess an elastic supply of external finance to avoid problem of expense. These suggest total independence between investment and finance and can be efficient when information is not asymmetric. Investment can be realized with the quality of project and borrower. In case of credit market, it will be profitable only to the one who possesses sufficient information. In other side, borrower's risk is due to the doubt for their financial situation to get loan

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32 Randrianarisoa A. et al., April 2008, Des Effets de la Gestion Forestière par les Communautés Locales de Base à Madagascar : cas d'Arivonimamo et de Merikanjaka sur les Hautes Terres de Madagascar ; CIFOR, SAHA and Madagascar Intercooperation, Workshop on Forest Governance and Decentralization in Africa in Durban South Africa, French  
[http://www.cifor.org/publications/pdf\\_files/events/documentations/durban/papers/Paper18Randrianarisoaetal.pdf](http://www.cifor.org/publications/pdf_files/events/documentations/durban/papers/Paper18Randrianarisoaetal.pdf)

and borrowers risk increase according to the quantity of fixed capital they have. This part of the section explores the impact of investing on the concept of monetary benefits and non-monetary benefits.

## **4.2 AROUND THE MEANING OF MONETARY BENEFITS AND NON-MONETARY BENEFITS**

Exploring monetary benefits and non-monetary benefits gives an overview of short term and long term of investment. These two major terms investigates the type of investment regarding time and value of money

### **4.2.1 The monetary benefits**

Monetary benefits<sup>33</sup> lies where you receive benefits as money, an advantage, a good, a special allowances or commissions as member of a nonprofit group (club, society) or as a target of benefits of a public benefit nonprofit (IPGRI,2001). Monetary benefits include capacity building to insert skills and knowledge on human capital, agreements, genetic resources, mutually agreed terms, raw materials, local trade, subsistence use, commercial goods.

### **4.2.2 The non-monetary benefits**

Non-monetary benefits are something you receive that doesn't involve money (IPGRI, 2001). They occur at the global, national and local level. They include information sharing, association, community, cooperative as a volunteer association, decentralization, social benefits like quality of life, food security, lower food costs, increased productivity, expanded market opportunities, environmental benefits, access to genetic resources, technologies and computer science, livelihood and non-market goods, expectation, Public Private Partnership and value chains.

## **4.3 THE SOCIAL CAPITAL**

To define it, according to literature, social capital<sup>34</sup> is to fill the «*missing-link*» in the development, and focus for policy and practice. It creates social values such as norms, social relations, and help to achieve outcomes. The application of this concept in development policy is abundant as: central to

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33 Ruth Raymond and Cary Fowler, September 2001, Sharing the non-monetary benefits of agricultural biodiversity; IPGRI, Issues in Genetic Resources n°5, Italy

34 Samantha Jones, 2005, Community Based Ecotourism, The significance of social capital, Annals of tourism, Vol 32:2, pp303-324; Elsevier, Great Britain  
<http://www.elsevier.com/>

democracy, economic growth, development, poverty reduction and environmental sustainability. In case of environment field, social capital embedded in participatory groups in rural communities, and has been equitable and sustainable solution to local development problems.

Investing in social capital is one of the powerful elements to conduct local development, because, findings describe this feature to create social organization such as network, norms and trust to facilitate coordination and cooperation for mutual benefits. It also simplify relationship between individuals, trust strengthen human value and the access of information. The norms and rules regulate the internal organization and give responsibility as a voluntary member of a kind group<sup>35</sup>. Finally, investing in social capital help to perform social institution.

#### 4.4 INVESTING IN NATURAL CAPITAL

In general, capital is considered as a stock of materials or information which exists at a point of time. Each form of capital stock provides broad range of services which may be used to transform materials and to improve human welfare. One of the forms of natural capital we should take into consideration is forest which provide tangible and intangible. At community level, forests are a vital role for dependent communities to provide timber, medicines and fuel wood and access to formal markets. At regional level, forest ecosystem services provides instrument for water regulation, soil fertility, flood mitigation and air quality. At global level, it contributes to economic development, biodiversity conservation and climate regulation. By and large, forests provide natural habitat for species, pharmaceutical raw materials, and large amount of carbon sequestration to climate change<sup>36</sup>.

In addition, forest products contribute to local economies and livelihoods, medicinal and aromatic plant are necessary to product drugs for laboratories around the world, and sustain the habitat of the half of terrestrial species, protect watersheds and regulating climate as shown on various studies<sup>37</sup>.

Similarly, in our context, forest assets are important at many levels and in many sectors. Forests constitute the source of significant benefits to people, by providing subsistence needs for rural household. At the local level, communities depend on forest for having access to materials such as timbre, herbal medicines and firewood. Furthermore, forests provide products to access formal market. It play a vital role both human, plants and animals, provides habitat for many wildlife

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35 Thanakvaro Thyl Lopez, 2005, Resource Degradation, Property Rights, Social Capital and Community Forestry in Cambodia; Cambodian Research for Center for Development (CRCD), Kingdom of Cambodia.

<http://www.camdev.org/publications.html>

36 Richard Munang et al., 2011, Sustaining Forests : Investing in our common future ; UNEP Policy Series, Issue 5, p18

[http://www.unep.org/ecosystemmanagement/Portals/7/Documents/unep\\_policy\\_series/5thUNEPPolicySeries.pdf](http://www.unep.org/ecosystemmanagement/Portals/7/Documents/unep_policy_series/5thUNEPPolicySeries.pdf)

37 Maryanne Grieg-Gran and Steve Bass, 2011, Towards a Green Economy : a pathways to sustainable development and poverty reduction, Part I : Chapter 4 : Forests : Investing in Natural Capital ; UNEP, p35,

<http://www.unep.org/>

species and the basis for economic industry such as ecotourism, it is a source of employment to manage forest cover and controlling activities among depending community.

Investing in Natural Capital targeted to lower income individuals, the marginalized poor people especially youth and women to share benefits by giving them a responsibility to take part social activity and preserve their natural habitat.

### **Example 5: Case study of investing human, natural and social capital<sup>38</sup> of Awassa Ethiopia.**

Ethiopia is one the poor countries of the world with GDP per capita under USD100 per year, ranking place 170 of 177 on the Human Development Index (HDI). Without reasonable food, water and energy, also they suffered from deforestation and degradation of forest cover. The Farmers and pastorals were suffering so much, with high rate of illiteracy, unemployment and unstable political situation.

One of the regions touched to extreme poverty and natural resources degradation was Awassa. Groups of academic student have conducted a local workshop, financed by the Fund from Sustainable Futures, hold on the Awassa children's center, with the local NGO last June 2006.

The «*Green Awassa Atelier*» was organized locally, with 40 participants, after that they take part in the field visit inside region, to tackle the local problem, and shared vision of sustainable manner and future development projects with local partners.

To share expertise, they invited communities on training program. After that, they implemented the «*Green Awassa*» program focused on reforestation, food security, economic sustainability and environmental education, as reported from the workshop:

- Reforestation program include on the :

First Phase: planting 1 million seeds of exotic fruit and fast growing indigenous species of wood, as known success at Nigeria, Burkina Faso and so on;

Second Phase: Reforestation for 15000 ha of surface area surrounding the lake Awassa

- Activities on Public Awareness: education campaign focused on environmental education and leisure activities for youngsters
- Coordinating committee.

The creation of the Green Awassa Collaborative Alliance (GACA) is a coalition of stakeholders, NGO and business communities and academic members to supervise the program and report to Government Institution.

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38 Travis W. Reynolds, Joshua Farley and Candice Huber, 2010, Investing in Human and Natural Capital: an Alternative Paradigm for Sustainable Development in Awassa Ethiopia ; Elsevier, Ecological Economics 69, pp 2140-2150  
[http://www.uvm.edu/giee/pubpdfs/Reynolds\\_2010\\_Ecological\\_Economics.pdf](http://www.uvm.edu/giee/pubpdfs/Reynolds_2010_Ecological_Economics.pdf)

All of these programs are made with participatory team spirit.

## **SECTION 5 ENDOGENOUS GROWTHS AND LOCAL DEVELOPMENT**

After presenting topography of investment in the second chapter, the next section of analysis will focus on the endogenous growth theory that affects the Vohimana Community Forestry and poverty. Literature will be reviewed only for statements on the adaptive endogenous theory on forest management.

Theories of endogenous growth clarify some factors to explain the local development. As local, space is precise in local place. In economic feature, space<sup>39</sup> play various components such as, in a whole, influences the way in economic system work, it can be a sources of economic advantages such as income, land, raw materials or the distance proximity to reduce transaction cost. That's to say, space play growth in specified territory, space became forces inside territory. This pattern conducts to formulate endogenous growth theory in our topic. As stated by scholars, endogenous growth emerged when something appeared in localized space. One of the statements of this theory is the importance of Capital models to generate positive externalities. When investment capital stock generates phenomena called «*learning by doing*» and «*spillovers*» of knowledge and technology. Such as investment in physical capital equipment affect growth or investing in human capital influence technological process due to result of education and research. In regional context, the case of Vohimana, adapting endogenous development explain some factors like competitive advantage of industrial cluster, or specialization factors to boost local economy, and the role of human capital to provide assets for education and institution package, influence the takeoff of local industry by providing skills, technical process, or sharing experiences between universities, or localized skills to help innovate regional externalities. Traditional knowledge of medicinal plants process helps to perform drugs and to preserve natural habitats.

Nevertheless, as stated before, development process should touched grassroots people to alleviate poverty and people welfare.

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39 Roberta Capello, 2011, Location, Regional Growth and Local Development Theories ; Firenze University Press, Aestimum 58, pp1-25  
<http://www.fupress.net/>



## SECTION 6 THEORETICAL LITERATURE OF INSTITUTION

Studies of the relation between local development and institution have a long tradition in economics with problem of updated information and adaptive legislation for rural areas. This section gives an overview of possible interaction with institution inside specified area.

One of the pioneers of institution was Douglas North<sup>40</sup> who defines institution<sup>41</sup> as the rules of the game or the humanly devised constraints that structure human interaction. It can be formal rules (statute law, common law, regulations), informal constraints (convention, norms of behavior or code of conduct), and the enforcement characteristics of both, these rules conducted to a good economic performance.

When digging this definition into our context we can see that there are existed norms in Vohimana such as «*the dina*», traditional convention and formal regulations, also there is an agreement between local communities and NGO which operates activity in that place. Research findings revealed relation between institution and NGO<sup>42</sup> where this organization can be view as a pure civil society institution to negotiate market and state agents to ensure sustainability, to increase positive certainty of livelihoods for the most vulnerable, can reduce transaction cost, while institution established formal procedures. In addition, NGO help villagers to increase skills by capacity building, training for technical agriculture or breeding at grassroots level, or supervise rules among locals.

### 6.1 MARKET OPPORTUNITY AND FEASIBILITY

Implementing efficient market should study the economic system and institutional framework of a specified place. This section studies the linkage between market analysis and institution framework or possible institution that can be adapted to the topic.

Traditionally, a «*market*<sup>43</sup>» is a physical place where buyers and sellers exchange goods. But modern market has changed to various forms (ads, direct mail, e-mail, and sales data) and various intangible services are paid to conclude a business. Conversely, market combined different systems,

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40 Douglas C. North, Washington University in St. Louis, USA. Dr North was awarded the 1993 Nobel Prize in Economics

41 Douglas C. North, The New Institutional Economics and Development; Washington University, St Louis, [www.econ.iastate.edu/tesfatsi/NewInstE.North.pdf](http://www.econ.iastate.edu/tesfatsi/NewInstE.North.pdf)

42 John Cameron, 2000, Development Economics, The New Institutional Economics and NGOs ; Taylor and Francis Online, Third World Quarterly, 21: 4, pp 627-635  
<http://dx.doi.org/10.1080/713701070>

43 Philip Kotler, 2002, Marketing Management, Chapter One: Marketing in the twenty-first century; Millennium Edition, Custom Edition for University of Phoenix, Printed in the USA by Pearson Custom Publish  
<http://www.perspectiva.md/>

institutions, procedures, social relations and infrastructures whereby physical elements targeted to exchange goods and services, forming a part of national economy.

Based on this knowledge, a developer will identify an opportunity and create a concept for taking advantage of that opportunity. The market analysis helps the developer answer series of question. Opportunity is a market niche which appears spontaneously due to the evolution of market, union policy, convention or innovation and policy application. Due to the choice and investment decision making, other costs emerge, opportunity cost which is a measure of the loss of benefits that could otherwise be gained from managing the area in an alternative way.

To find a market niche, we need to analyze the opportunity<sup>44</sup> in the region; preliminary study will be a prior. For the case in our topic, numerous studies will be clear as cited below:

- geographical location: physical relief, rainfall, weather;
- socioeconomic studies: population, demography, ethnicity, health center, reproductive health services, accessibility of education;
- infrastructure: access to transport (rail, road), communication and electricity;
- economic activities: honey collecting, seasonal livestock, forest products, herbal, aromatic and medicinal plant, mushroom collect, ginger culture, handicraft activities, and firewood activities;
- Agricultural and ecological resources which describe the main agricultural uses of the buffer zone and the special-use-of forest. It should include: main crops types, seasonal patterns, land tenure, shifting cultivation systems and the food security status of the area;
- livestock assets: domestic farm of cattle, buffaloes, pigs, poultry and goats;
- forest resources: tenure and access rights, forest product and uses, forest services, social and agroforestry activities and the dependence of local communities on natural resources;
- ecotourism activities: tourism and genetic resources, threats of the conservation;
- institutional evaluation: local institution, traditional rules, norms, convention and legislation;
- Financial evaluation: micro finance activities.

After realizing requirements feasibility study of market, it will be useful to study the international structure of the region. Exactly, at the period of there are potential business, need to be developed,

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44 Birdlife international, European Union, FIP1, December 2000, Guidelines for feasibility studies and investment plans for the designation of special-use-forests; Conservation report n°19, Hanoi  
[thienhiviet.org.vn/sourcebook/report\\_pdf/report19.pdf](http://thienhiviet.org.vn/sourcebook/report_pdf/report19.pdf)

institution play roles in strengthening markets for commodities produced, bought, and sold by smallholders: reducing transaction costs, managing risks, building social capital, enabling collective action, and redressing missing markets.

For example, when production is healthy, a smallholder's business farmer can deal an agreement to supply specific goods to external collector by contract farming. Contract Farming is a collaborative business and may be tools for Private Public Partnership (PPP), or collaborative business models properly negotiated with small-scale producers through joint ventures (shared equity) with legally recognized community organization (locally association) to supply specific goods.

Doing a business engage risk and this risks are not defined properly, sometimes it depends on climate (natural disaster: cyclone, environmental degradation) price fluctuation, competitive market, something appears unexpectedly, in this context, financial services contribute significantly to poverty reduction.

Meanwhile, without external finance<sup>45</sup>, poor households would not have the means to realize their economic potential. Feasible investment project can be agribusiness practices, processing packaging, marketing or many other farm and non-farm rural economic activities. A kind of financial services facilitate investment and intermediate flows of funds between parties, finance is also a tool, if managed correctly to a wealth creation and poverty reduction. Rural poverty reduction requires investment in all aspects of rural development, agricultural and non-agricultural; to create conditions and capacity needed to improve farm and non-farm income and assets, including financial services and market development, human capital and policy development. The place of the local authority should increase business activity to make it feasible by building better infrastructure like roads, electrical lines, and improve schools and services; all of them can improve the competitiveness of agricultural production.

An example of financial services that play a vital role for local community is the implementation of micro-finance<sup>46</sup> services. Micro-finance investments can attract institutional and individual investors due to their bottom line. A kind of social investors may include foundations, NGO's, individual investors, professional institutional investors (pension funds, insurance companies, universities and religious institutions)

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45 FAO, Rural Finance Learning Center, CABFIN Partnership, Rural finance and poverty reduction;

[http://www.ruralfinance.org/fileadmin/templates/rflc/documents/7\\_rural\\_finance\\_and\\_poverty\\_red\\_web.pdf](http://www.ruralfinance.org/fileadmin/templates/rflc/documents/7_rural_finance_and_poverty_red_web.pdf)

46 Raimar Dieckmann, D.2007, Microfinance :an emerging investment opportunity : Uniting social investment and financial returns, Deutsch Bank Research

<https://www.dbresearch.com/>

## 6.2 CONCEPT OF VALUE CHAIN

Value chain<sup>47</sup> belongs to the package studies of investment, market opportunity and existential institution. Each product in chain link requires quality and need to be analyzed to limit the cost of transaction. A value chain links the steps a product from farmer to the consumer. It includes research and development, input suppliers and finance. The farmer combines these resources with land, labor and capital to produce commodities. Without value chain studies, farmer pushed their products directly to the marketplace or using an intermediate traders. This old systems isolated the farmers to the end-consumer and have little control over input costs or of the funds received their goods. With adding value chain in marketing system, farmers are linked to consumers' needs, working closely with suppliers and processors to produce specific goods consumers demand. Similarly, through flows of information and products, consumers are linked to the needs of farmers. Under this approach, and through continuous innovation, the returns to farmers can be increased and livelihoods enhanced

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47 Kaplinsky and Morris, 2002, The value chain approach to Economic Development and Poverty Reduction : a handbook for value ; Institute of Development Studies, Chain Research  
[www.researchintouse.com/nrk/RIUinfo/valuechain/Value-Chain-Approach.pdf](http://www.researchintouse.com/nrk/RIUinfo/valuechain/Value-Chain-Approach.pdf)

## **CHAPTER 2 MATERIALS AND METHODOLOGY**

This chapter describes how the research was carried out, it includes the various apparatus used, the scientific methods applied, the techniques used during collecting the data, participants and respondents. It also reviews field research on different period, the objectives, purpose, local participation, limitations and challenges.

### **SECTION 1 MATERIAL**

The study was conducted in the local place of Vohimana Community Forestry, township of Ambatovola, Moramanga District and Alaotra Mangoro Region. To perform this topic, instruments used during theoretical part are books, journal articles, electronic library using Internet browser, other sources of books and the terms and definitions on the website also, as well as to find other appropriate sources of the research. During empirical part, instruments to collect data are also books, research topic, questionnaires, case study, literature review, interviews, video camera and voice recording.

Next part of the section details methodology applied during field research.

#### **1.1 PHYSICAL DESCRIPTION OF LOCATION AREA**

Location of Vohimana have chosen because, until know, instead of various project are operated in Alaotra Mangoro, some places remained negative impact of rural poverty, deforestation and degradation of natural resources, feeling of local development may be missed, and this locality recorded as higher rate in this region. Despite of having natural richness, we do not know why local organization has never been taken to preserve this local area. Various programs have operated inside Vohimana such as MATE program to promote ecotourism and essential oil, since 2002, and teach people to avoid tavy. Actually, the most vulnerable such as young, women, old remained in dramatic situation.

This section describes the area of study, climate, population, social structure and economic activity.

### **1.1.1 Geographical location**

Vohimana<sup>48</sup> is a rural place located in the East zone of Madagascar, belongs to the Alaotra Mangoro Region, which is bordered in the North by Sofia Region, Atsinanana in East, Analanjirofo in Northeast, Vakinankaratra in Southwest, Analamanga in the West and Betsiboka in Northwest. Taking the NR2, these places are about 150km from Antananarivo, after Moramanga district, with an area of 1635ha. The forest cover contains 600 ha of primary forest and mosaic planted forest with relatively human access. Vohimana is an experimental reserve bordered in the East by the special reserve of Analamazotra, in the North by National Park of Mantadia and in the South by the Maromiza forest.

### **1.1.2 Administrative location**

Vohimana belongs to the province of Toamasina land and MATE has an agreement to manage the site for 25 years. There are two fokontany inside Vohimana: Fanovana and Anevoka and two communes composed by Andasibe (Andasifahadimy, Ambohimanolaka, Anevoka, Soarano Amalonabe, Mahasoia and Ambatosenagaly) and Ambatovola Commune.

The protected area is placed on the hill inside of the forest, taking the path that leads from Ambavaniasy to Vohimana, crossed by two rivers and railroad.

### **1.1.3 Topography**

The site is a hilly terrain or uneven in places with presence of steep sloper (often superior to 20° or 30°). The few available benches are a strong constraint for development. The narrow and the V-shape valleys is noted among the general characteristics of the place despite some exception, around the forest complex varies from 600m on average in valleys floor to the peaks at 1000m will a point at 1044m culmination.

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48 Glen Buron, 2004, « Document Cadre Exécutif de Gestion, site de Développement et de Conservation de Vohimana, côte orientale de Madagascar ; Mémoire de Stage en vue de l'obtention du titre d'Ingénieur maître en Aménagement et Développement du Territoire, mention ENVAR, Institution Universitaire Professionnaliser, IAU Lille 1 Cité Scientifique Bat SH3, p128, MATE Antsakaviro, Reference Number R47

#### **1.1.4 Soil composition**

This region is based on magmatic granitic rocks interspersed with some bands of graphite in the Northeastern part of the soils encountered Vohimana, and are characteristics of the majority of soils in the humid tropics. They are represented by ferralsols or lateritic soils, highly oxidized red or yellow, they represent an important leaching. The lateritic soils are fertile as composed mostly of clay (kaolinite) and have a low cation exchange capacity and form an obstacle of agricultural development.

#### **1.1.5 Climate**

The region is subject of a tropical climatic humid temperate. The average annual rainfall is 1700mm. The year can be schematically divided into two moderate seasons precipitation from April to November followed by a heavy rain season, spanning four months from December to March. The relatively stable temperature throughout the year with an average of 17,7° in the morning and 22,7°C in the afternoon. Note the lack of dry season is the true sense, the relationship between temperature and precipitation lead to water condition for agriculture but three points is observed as threatened by cyclonic risk and erosion due to heavy rains, the risks short periods of drought from September to November and the difficulty of working through local time with frequent thunderstorms and often muddy terrain.

#### **1.1.6 Forest description**

Forest at Vohimana is type of rain-forest altitude. This ecosystem is home for 12 species of lemurs, including 4 endangered 47 species of amphibians which Mantella and endemic 25 species of reptiles.

The repetition of clearing no longer allows the fallow reaching the stage savoka even after several years due to population pressure and traditional agricultural practiced. This reduction of fallow led to the depletion of soil organic matter and combined with the effects of fire and erosion, resulting in the disappearance of forest species seeds leading to irreversible depletion of forest.

## 1.2 SOCIAL STRUCTURE OF BETSIMISARAKA COMMUNITY

The Betsimisaraka of Vohimana comes from commune patriarchal type of Betsimisaraka Zafimisandy<sup>49</sup>, who is the first family that occupied the place of Fanovana, after they spread to other villages.

### 1.2.1 Social organizations

Social structure is represented by the mother town involving a large control over individuals and also a trend towards individualistic, which is expressed by the spatial dispersion of the habitat. This trend is reinforced by tavy in the region. Indeed, all of the members of the family home after sowing the plot of the tavy, build one or more new boxes near the whopping area and live there during the whole crops cycle duration.

At Vohimana, mother's villages are real center of social and cultural activities. The presence of schools, grocery stores, places of meetings and their direct proximity to the areas of communication are privileged places of the various trade transiting. They compensate all descendants of the founding ancestors or immigrants. They are looked to a well-defined village, have exclusive access to natural resources to their relative kinship relation the first inhabitant (tombs and sacred sites). The soil is thus to be considered as not only the location of economic activities, but also a spiritual anchor for families is claiming. It thus provides the real socio-political space unit in which the action to support the population must be considered.

In the different villages gather the different lineages of the founding ancestor. They are all male and female descendants from a common ancestor and traced through the male line. Lineages represent basic socio-political unit the extended family includes all male and female descendants of Ray AmandReny (the elders), living in the village, and consists of several household who give and live in the same-box, social housekeeping is not considered an independent social unit and is instead integrated into an extended family. Village elders dominate Betsimisaraka function in socially, and they are considered the true holders of power. At the lineage, they are involved in all business and Tangalamena cannot make decisions in the terms of the transmission of tradition, respect for ancestors and monitoring of customs descendants. When someone died, members were buried in the same tomb upon the sacred hill called the Vohidrazana.

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49 Rakoto Arsène, a Traditional Healer told a brief story of the type of Betsimisaraka who live in the region



### 1.2.2 Traditional method of agricultural practice: the tavy

Slash and burn practice, locally called tavy to the east region or «*hetsake*» to the southwest region exist since the Neolithic<sup>50</sup>. The country loss almost 44000 forest surface every year threatened endemic species. Slash and burn practice is the most cases to degrade forest due to the main reason of rural poverty and gap in agricultural investment. Poorest people who lived near the protected area were most depending from forest product that was the difficult of conservation in Madagascar. Small holder agriculture stayed the main reason to increase tavy even since the king period and colonization era, it has been always prohibited.

There are two forms of planting rice in Madagascar, rice agriculture on bottom lands and tavy agriculture uplands on forest and it will be associated with numbers of crops. Slash and burn agriculture maximize productivity and burning wood biomass restores soil fertility and earn soil availability. Tavy begins in April and September by clearing the land, selected according the age of fallow and land tenure rights. Tavy is performed by men with big knife. After have dry the cut vegetation, this one is burned at the beginning of November, preferably before the heavy rains. Sowing with a stick immediately follows the slash and burn and mobilizes a workforce available. Two weedings are made; the first comes in first month and the second two months after the semi. Soon after, the semi and before harvest, it is necessary to make a special gardening against various birds and rats. Harvesting begins in March and extends until May, next growth cycle of harvest species. During harvest, the ears are cut with a small knife. As the planting and weeding, harvesting request all available labor, but unlike the other activities on the tavy, harvesting of rainfall rice is not banned. Otherwise this practice increases climate vulnerability. Consequently, soil is exhausted after three cropping cycles conducting farmers to slash again another forest land. This cycle decrease with population growth as it is the case of Eastern region.

One the one hand, tavy has considered a social practice, tavy reinforce social relations and internal cohesion, enforce hierarchy and authority. Doing traditional method of tavy express farmers belonging to a community also honored God and the ancestors through ritual practice. In addition, practiced of tavy is a kind of protestation against French colonization and 1947 resurrection. Finally, tavy identify Betsimisaraka ethnic as their symbol of way of life.

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50 Desbureaux Sébastien, 2014, Between Economic loss and social identify : the multi-dimensional cost of avoiding deforestation in Eastern Madagascar; World Development, 27:4, 31, Elsevier  
<http://www.jma2014.fr/fichiers2014/255/Desbureaux-JMA2014.pdf>

### 1.2.3 The traditional Betsimisaraka head of village: the Tangalamena

The Tangalamena represents all the members of community in a specified area. This type of leader exists since the origin of Betsimisaraka tribute.

The process of this hierarchical leader consist of all concerned population elect a leader, the Tangalamena, the layout is often passed from father to son and whose duties are both religious and secular. When two or three lineages consist in the same village, there are often several Tangalamena, with adding a subclass of the large group can appoint its own leader so that their number is still rising. Each Tangalamena is assisted by an elected and appointed floor door, the Vavanjaka which welcome the visitors, is the lineage outside and replaces Tangalamena in case of absence in zebu sacrifice or during rituals. But the real holders of power are the elders, who watch over the respect of the tradition rules in all areas of life. It is they who settle family disputes after listening opposing parties, as well as the opinion of Tangalamena that they can try to organize all the family groups within the lineage<sup>51</sup>.

As stated by one Tangalamena in Vohimana: “Tangalamena is the Ray AmandReny of the village. So whatever happens in the village, the Tangalamena should be informed and people must consult with the Tangalamena before deciding or doing something. It is the same case of foreigners who would like to do some activity around and inside the forest of Vohimana (Régis<sup>52</sup>, 2010).

And the process of sharing information converged from the Tangalamena into local community; this system remained until now the main process of sharing information working with information among local authority.

## 1.3 POPULATION CHARACTERISTICS

Actually, More than 1600<sup>53</sup> people live in the Vohimana area. The demographic growth rate is average of 3% per year. This population has double ten years ago. The population is composed by young people and represents almost the whole population. Life expectancy is average between

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51 Nambena Jutta, 2004, Analyse de la subsistance paysanne dans un système de production en crise et identification participative de stratégie durables. Cas de Beforona, versant orientale de Madagascar ; Ruprecht-Karls Universität, Heidelberg, Germany, p290, French MATE, Antsakaviro, Reference number R28

52 Régis is among first ecotourism guide of MATE and a Vavanjaka who explained the task of Tangalamena during interview made by some student group on February 2010 (this speech was translated from original speech in local dialect)

53 This number was given by the Local Project Manager of MATE on February 2010

55years old for male and 58 years for women. More than 90% of the villagers depend on forest resources.

This table represents the spatial repartition of population in the area place of Vohimana.

**Tab 1: Spatial repartition of population**

	Ambavaniasy	Anevoka	Sandranady	Fanovana	Sandrasoa	An'ala	Soarano
Family members	43	11	16		12		
<b>Total</b>	<b>143</b>	<b>48</b>	<b>83</b>	<b>300</b>	<b>80</b>	<b>25</b>	<b>70</b>
	Ambatosenegaly	Ambatomandaha	Vohibe	Amalonabe	Mahasoa	Andasifahadimy	
Family members	30	5	8	9	12	19	
<b>Total</b>	<b>107</b>	<b>32</b>	<b>39</b>	<b>39</b>	<b>56</b>	<b>69</b>	

(Source: population census conducted by MATE in 2004)

## 1.4 THE ECONOMIC ACTIVITY AND LOCAL SITUATION

The main activities are focused on agricultural, farming, handicraft and collecting forest product.

### 1.4.1 History of economic activity

During colonial period, this hill was known by French colonization to produce coffee and banana. Local production help farmers to have some cash to pay taxes to colonial administration, the other are spent in agricultural materials and during customary needs such as zebu for rituals.

The introduction of market economy was observed during the first republic.

Actually, due to strong dispersion of the habitat, it decreases social control of organization, and decline the solidarity between families. The influence of modernity and the emergence of generation conflict cause weakness of traditional authority. The forbidden of tavy strengthen this situation, the actual production did not ensure self-sufficient food security for farming and families.

### 1.4.2 The agricultural activity

Most of area of Vohimana is dominated by a hilly terrain and corollary. The activities were largely diversified. The place of Sandrasoa, represent the main resource of Agricultural due to this proximity to river flows. Agricultural production is organized on cassava, rice, sweet potatoes and some crops.

## **1.5 BRIEF REVIEW OF MATE ACTIVITIES<sup>54</sup>**

MATE is an NGO founded by the French naturalist Olivier Behra, which objective was to sustain management of the forest area and to value the medicinal plant.

### **1.5.1 Introduction**

The ONG starting their activities since 2001, an agreement were signed between the Toamasina Province authority and head of the NGO for 25 years renewable management. There are eleven villages in Vohimana: Fanovana, Sandranady, Sandrasoa, Sandrandahy, Ambavaniasy, Andasifahadimy, Ambohimanolaka, Anevoka, Soarano Amalonabe, Ambatosenegaly and Mahaso. The main activities are concentrated to Ambavaniasy and Vohimana. We do some activities in Andasifahadimy and Ambohimanolaka, Sandranady and Sandrasoa.

The objectives of MATE were to abolish slash and burn crops, to organize local activity, to provide technical support, to manage forest area and surrounding surface. At the beginning we have educated local people to stop tavy, rules and legislation were informed to villagers who accomplish tavy again. This measure causes reactions and resistance among communities that 47 hectares of forest near Vohimana were burnt voluntarily and reinforced social cohesion of some village lands.

Before, most of people did tavy, because it was easier to practice compared to rice-growing. The output from tavy is 90kg per hectare and the output from rice-growing is 1, 5 tonne per hectare. But the cost of doing tavy is less than doing rice-growing.

### **1.5.2 The activities to provide household income**

All the main activities which provide household income is to produce essential oil, from household collecting to be transformed into the alembic, ecotourism accommodation and sightseeing, and related activities concerning education, health center and training. The main customer for essential oil product is Aroma Forest and some foreigner client. To improve quality of our product, our

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54 This statement was provided by the Local Project Manager of MATE on February 2010 and translated from original recording

intervention is focused to provide technical support to locals, management of internal organization and training program for the whole members.

The ecotourism activity provide funds for health center and education

## **SECTION 2 METHODOLOGIES**

The second section details scientific method applied during research. Literature background detailed in the first chapter verifies the accuracy of the topic in order to perform suggestions on the part of discussions.

Methodology applied during the field research used the holistic approach combined with multi-method analysis, participatory method and qualitative research.

The objective of field research was made to verify some information's in a specified area, the level of local involvement to be part in a development program, their motivation to preserve natural resources, the assessment of the integrated program, in order to improve relevance of local household. Critics among study may help to indicate the weaknesses of program.

### **2.1 STUDY AREA**

Data has been collected between 2010 and 2013 by Masters and PhD students from Economic Department, Anthropology Department and Natural Science Department at the University of Antananarivo. The area were to collect data have taken place in the 11 villages operated by MATE programs. These villages are Ambavaniasy, Vohimana, Sandrasoa, Sandranady, Anevoka, Ambatosenegaly, and Andasifahadimy. But the main activities are focused between Ambavaniasy and Vohimana, some villages are located on the pathway to Vohimana, three locations are far from the center as Anevoka (5km from Ambavaniasy), Ambatosenegaly (3km) and Andasifahadimy (5km from Vohimana).

Informations collected help also to evaluate impact of local involvement, perception, expectations and behavior of Betsimisaraka community forestry.

Since 2001, an NGO MATE (Man And The Environment) have conducted various integrated program in the region, an agreement signed between the Former Autonomy Province of Toamasina, Forest Department and local authority to manage the protected area, for 25 years. Various programs such as conservation program, essential oil, ecotourism activity, environmental education and

related activities to generate incomes for local villagers. Their activities are focused to Ambavaniasy and Vohimana. Each stages of their management have conducted to create some social services that affect daily life of locals such as building health center, primary school, management committee named COGE (French word: Comité de Gestion or Management Committee), the local institution to manage local association. These associations were implemented in order to involve locals in different topic of activity. It can be a Women Center for gender participation, group of Leave Collectors, to collect raw materials for essential oil, Arina Association for charcoal production, Merci Vohimana for ecotourism activity, carriers grouping, Health Committee with formal medicine and traditional healers, Eucalyptus Association, Fanantenana Tsaravoatra to take care of beekeepers, Manara-penitra for medicinal plant and so on. Other complementary activities are to teach villagers to become independent in their decision-making and management.

## **2.2 SELECTION OF GROUP PARTICIPANTS**

Participants to realize data collecting were chosen voluntarily, conducted by one professor from Economic Department. Some criteria has been observed also such as having willingness to share experiences between each members, ability to speak foreign languages and local dialect of Betsimisaraka, physical ability to take long hour trekking, ability to work in rainy region, characteristics of East season. Finally, each participant must be transcript interviews divided according to the numbers of group student.

## **2.3 SELECTION OF RESPONDENTS**

Interviews are conducted to understand local reality and the impact of NGO activities in the VCF. Respondents to the interview were chosen to the focus group method. Identification criteria are interviewees are key informants to the participatory involvement, and to be recognizing as acting a great task in the core zone such as Head of Fokontany, local project coordinator, leader or member of association, responsible of health center, midwife, and traditional healers and so on. It includes members for association cited before; it includes also simple villagers who did not take part to local activity, staff of the NGO. Their answer may differ due to their perception. Meanwhile, the objectives of field researchers explore local trend. Interviews also are made to a specified topic for particular information such as health care procedures, comparison between modern medicine and

traditional medicine, traditional knowledge, advantages and disadvantages of local participation, attitude behavior, challenges, perception, opinions, and source of household income, economic activity, ecotourism and numbers of information.

Interviews are ranged in aged 18 to 70s or more in the duration of 15mn to 3 hours lasting and no compensation was provided during the processes

## **2.4 WAYS TO COLLECT DATA**

To collect data, some methodologies have been used during each part of field trip. Qualitative method is used at the bottom up to explore the understanding of individuals or groups, to describe social or individual's problem. Original answers shows their own perception and to learn local situation. It also includes participatory observation; semi and unstructured interviews, focus group and workshop are also made locally. The qualitative information compiled from texts and local dialect based on conservation techniques, using voice recording and photography camera. It will be noted that at the beginning, the interviews were tried to structured interviews but due to the availability of respondents, duration and time, semi-structured interviews was explored for specified topic and ongoing interview to clarify some information's.

Some qualitative information affects each period of interview, the importance of cultural identity and the place of traditional institution in the region. Observation methodology as used to study individual reaction and experiences from a particular phenomenon, individual perception using scientific interpretation on investigation. And finally, during field research, students become native and familiar in the local place.

## **2.5 METHODS TO PERFORM QUESTIONNAIRE**

Questionnaire was performed by each student group before each interview and compiled in one systematic form. It defined and prepared during a briefing, questionnaires are mastered by heart; the respondents should not show the questions, but each group students must follow the logic of interview.

Meanwhile, technical tools were applied to perform questionnaires such as unstructured and semi-structured at grassroots level (men, women and young). Model of questionnaires can be shown on appendix.

## **2.6 METHODS TO INTERPRET DATA COLLECTION**

Data collected was interpreted concerning level of local participation, involvement of conservation, role of gender, place of elders, traditional leaders and local authority. Each data collected were translated into English by individuals, members of research group, to show various findings and knowledge of good hearing and real interpretation, monetary benefits and non-monetary benefits, value and supply chain, local procedures and management, rules enforcement, process of sharing information and so on.

## **2.7 ETHICAL CONSIDERATION**

Using data collection to verify assumptions of this research receive authorization between members who's performing field research. Meanwhile, only members of the group have access to original data. All information collected remained confidential and belonged to the students group. Consenting was needed for some persons who willing to use part or full of data during oral presentation. Sometimes, anonymity has been to keep respondents confidential.

Most of the times, respondents may not know that interviewers used voice recording to record information, to avoid biased information and bad ease to the interviewees.

## **2.8 LIMITATIONS AND CONSTRAINTS**

Doing this research, limitations and constraints have encountered during field trip. Considering that each topic required long term study, some information's might not be collected for the reason that doing interview in local situation required funding (expenses), time constrains, availability of the respondents. Vohimana is a kind of rural place were each respondent, time is very crucial in their period of working, to find foods for their families, and reply depend upon consenting of respondents, their availability, and their voluntary participation to share information. They could be met on road, in their home, or they're place to work. Rainy weather is also a local constraints, cultural consideration and taboos. But until now, students met difficulty to do field research that some respondents were annoyed to ask sets of questions, we spend their time to work and we have not given a little compensation. In case of doing local workshop, participants may be different each time. Most of the key informants can be met on lunchtime, at the end of the daily work (4 to 5pm), people who did housework can be met at home. Finally, some respondents did not answer clearly and wish not to take part in local participation.



# **PART 2 RESULTS, FINDINGS AND DISCUSSIONS**

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## CHAPTER 3 RESULTS

This chapter details relevant information during field research activity. All of the interviews are collected from their original data and transcript to be more comprehensive and useful to continue research topic.

### SECTION 1 RESULT

During course period between 2010 and 2013, 74 people have been interviewed, some information is obtained by focus group for specified topic, and most of them were unstructured and semi-structured interviews. This research is made to 9 villages as Ambavaniasy, Vohimana, Sandrasoa, Sandranady, Fanovana, Andasifahadimy, Anevoka, and Ambatosenegaly.

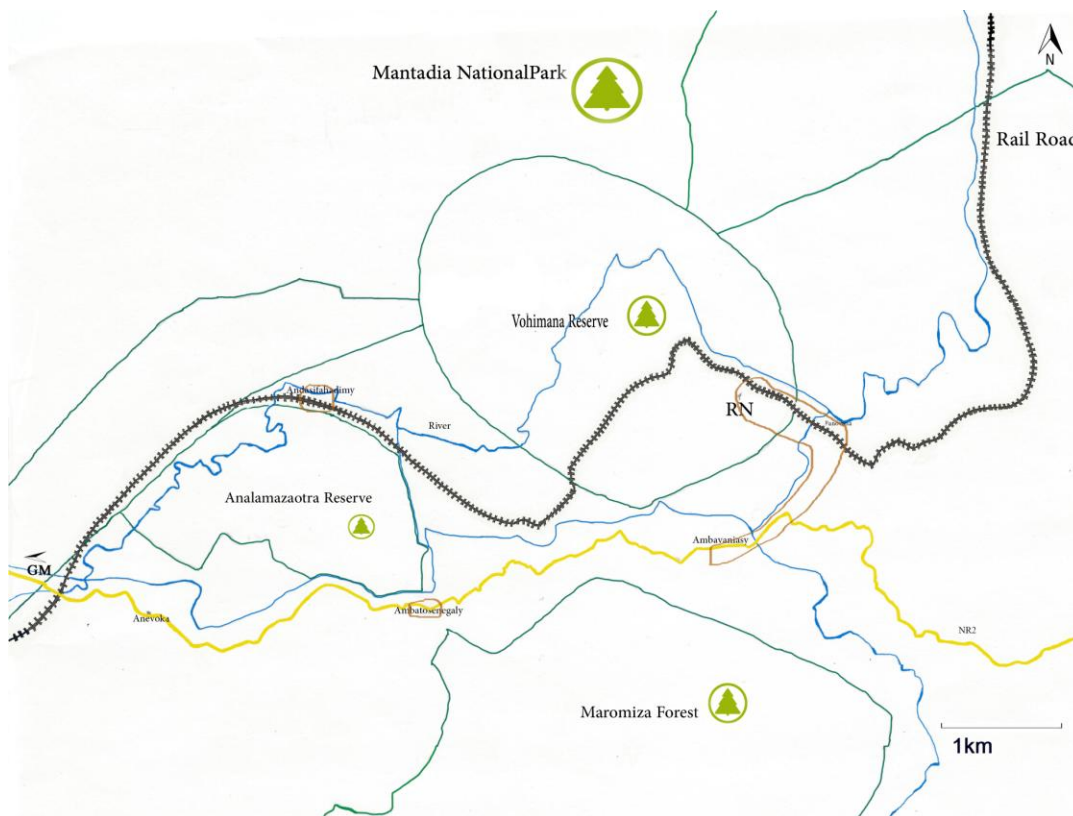
**Figure 1: Geographical location of the study area**








(Source: Google Earth)

Vohimana is located near Ambavaniasy Fokontany, on the National Road 2 between Moramanga and Brickaville.

**Figure 2: Map Location of the study area**



(Source: Adapted from Google Earth)







-  : Forest cover
-  : National Road Second Going to Toamasina, (Atsinanana Region)
-  : The place the field research where taken place
-  : River crossing
- GM: Going to Moramanga District
-  : Rail Road
- RN: Relais du naturaliste, Ecotourisme Accommodation inside Vohimana Reserve

On the figure 2, Vohimana Community Forestry is located between natural forest cover and river crossing, and near the National Road from Moramanga to Toamasina. On the figure 3, the slash and burn practice are located near the road and most of rice field are located on the Sandrasoa Location because it's near the river crossing. Most of villages are scattered around the reserve, that is a kind of Betsimisaraka tribute location, and the mother village is at Fanovana, where there is the “mother house” of rituals and customs events.

**Figure 3: Detailed map of Vohimana Community Forestry**



(Source: adapted from google earth)

-  : Forest cover
-  : National Road Second Going to Toamasina, (Atsinanana Region)
-  : The place the field research where taken place
-  : River crossing
- GM: Going to Moramanga District
-  : Rail Road
- RN: Relais du naturaliste, Ecotourisme Accommodation inside Vohimana Reserve
- WC: Women Center Office at Ambavaniasy
-  : Zone affected by slash and burn agriculture

### 1.1. GENERAL DESCRIPTION

At the first impression of 74 people accepted to be interviewed, both genders are fairly representative in the survey (44,29 % male and 55,71 % female). Taking into account the proportion of specific role inside community, each members group have their respondents, they are members of participatory involvement (23%), simple villagers (11,43%), Tangalamena (10%), Traditional Healers (26%), Elders (10%), Local Authority (1,43%), Local Project Coordinator (4,23%), staff of NGO (6%), Foreigner (1%), COGE or Management Committee (7%). The majority of people were native (84%). More than a half have little or ended school at primary level, only a few proportions ended until secondary level (6%), the others stayed low level, just knowing writing and reading. Only a few have not knowledge of use of plant or traditional medicine (10%), but most of them use plant in their daily life, to see traditional healers and did not wish to share their knowledge without consenting, only for sick purposes. Actually, most of people involve to participatory activities to generate household income (70%) and do it as main source of income. Most of them practice agriculture, farming activity, handicraft, a half does this task to satisfy their daily needs of food, and others find another way to fill this gap. Only a few do complementary activities but it depends upon their ability and habit. Until now, the major part of population (90%) prefer traditional method of agriculture (slash and burn practice or tavy), and do not agree with MATE decision, always complain to the discontinuity of tasks and the restricted access to protected area. Dramatically, local institution is weakness to enforce rules. The majority of people don't know the forest value, benefits and positive externalities to preserve forest area. Their perception stayed at their level of knowledge. Finally, most of them (85%) find difficulties to find daily food when MATE stops some activities.

**Tab 2: Indicators of income per activity and employment inside study area**

<b>Employment</b>	<b>Marital Statues</b>	<b>Gender</b>	<b>Salary/month</b>	<b>Type of work contract</b>	<b>Complementary activities</b>
<b>Midwife</b>	Married	Female	100000	Permanent	Farming
<b>Members of Women Center</b>	Married	Female	77000	Seasonal	Agriculture
<b>Cooking at School Canteen</b>	Widow	Female	75000	Permanent	Agriculture, Selling hot food
<b>Ecotourism Guide</b>	Married	Male	max : 250000 min : 32000	Seasonal	Collect plant from forest
<b>Leaders of Women Center</b>	Married	Female	150000	Seasonal	Grocery, Farming, Handcrafting
<b>Elders, Leave Collectors</b>	Divorced	Female	120000	Temporary	Agriculture, Fishing,

					Farming
<b>Responsible of seeds</b>	Married	Male	120000	Permanent	Agriculture
<b>Graduate nurse</b>	Married	Female	250000	Permanent	Farming
<b>Nurseryman</b>	Married	Male	140000	Permanent	Doing massage, traditional medicine
<b>Leave Collectors</b>	Widow	Female	150000	Temporary	Agriculture, Farming
<b>Luggage Carriers</b>	Married	Male	max : 200000 min:30000	Seasonal	Agriculture, Farming

(Source: Results analysis from the field trip, 2010-2013)

This table indicates distribution of income for each employment. Most of them do complementary activity to compensate their daily needs. They use their income to spend food, education, health care, agricultural and farming products. Sometimes, they sell their farming products when there are urgent financial needs. The majority of women produce handicraft both for trade activity and for interior decoration.

**Tab 3: Estimation of Agricultural production by one household**

	Annual Production	Ricefield area	Period of planting	Period of Harvesting	Price of selling (Money: Ariary)	Price of seeds (Money: Ariary)
<b>Rice</b>	1000 kg	1 ha	Oct-Nov	May	1200 /kg	
<b>Cassava</b>			Aug-Nov	December		
<b>Ginger</b>	500 kg	1,5ha	Aug-Oct	Sept-Dec		2000/kg
<b>Banana</b>	4000 kg		January	August	HS: 800 /kg LS:4000-5000 150/kg	

(Source: Results analysis from the field trip, 2010-2013)

Agricultural production is very low and most of farmers do traditional method. Most of them earn land by ancestor’s inheritance. Only the Tangalamena is the local authority to certify the land proprietorship. Until now, production is used for food subsistence. Some of them sell their products when there are urgent financial needs.

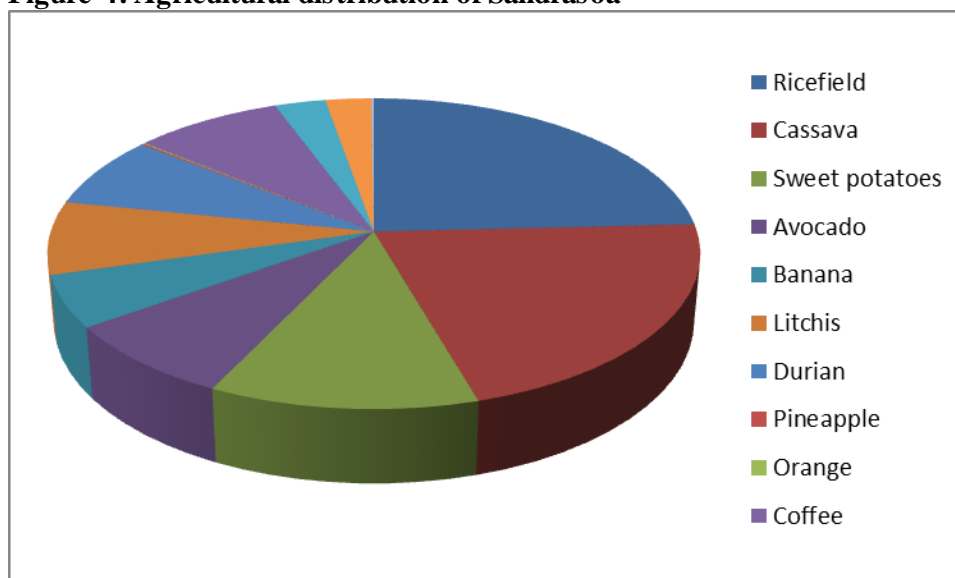
Next data show the nearly assessment of agricultural products for village of Sandrasoa.

**Tab 4: Estimation of agricultural, planting surface of Sandrasoa**

Type of Agriculture	Surface/ hectare	Percentage (%)
Ginger	7	2,6
Cassava	57,40	21,25
Sweet potatoes	31,56	11,7
Sugar Cane	7,832	3
Banana	14,56	5,4
Coffee	22,79	8,44
Avocado	21,63	8
Litchis	20,52	7,6
Durian	20,25	7,6
Ricefield	65,45	24,24
Peanut	0,405	0,15
Pineapple	0,41	0,15
Herbs	0,009	0,003
Orange	0,243	0,09

(Source: Alonso Garia Guillermo, 2007-2012)

**Figure 4: Agricultural distribution of Sandrasoa**



(Source: Adapted from Alonso Garia Guillermo, 2007-2012)

Sandrasoa is the main place where most of villagers practice agriculture due to this proximity to river crossing. This table reveals the agricultural activity inside intervention area. We can see that subsistence farming (rice, cassava, sweet potatoes) dominates the agricultural area (57,18%) followed by fruit trees (28,84%), other products are used to fulfill the gap of food and occasional financial need.

Only a few villages practice animal farming (hen, pig) to satisfy protein needs and, it can help to save money or to prevent lean periods.

**Tab 5: Handicraft activity**

<b>Handicraft product</b>	<b>Time Spending</b>	<b>Price when selling</b>	<b>Raw materials</b>	<b>Place to find raw materials</b>
<b>Traditional clothes</b>	2weeks	30000	Herana,	Riverside
<b>Tsihy</b>	1 week	1000	Harefo, voakoana	Forest
<b>Bag, hat, basket</b>	Half to 1 day	200 to 800	Katso (used to colors articles)	Market place

(Source: Results analysis from the field trip, 2010-2013)

Practically, women do handicraft, they know this knowledge since at early age (12-14 years) from their parents. Most of products are used to decorate home or selling at the women association. In addition, when joining this group, members scheduled training to improve quality of articles. Doing this practice increase capability and certify cultural identity of Betsimisaraka products.

**Tab 6: Knowledge of medicinal plantation**

	<b>Common name</b>	<b>Medicinal use</b>
<b>Dingadingana</b>	Iary	Syphillis, belly ache
<b>Sakarivondambo</b>	Ginger	Cough
<b>Radriaka</b>	Lantana	Malaria, fluctutation
<b>Ravintsara</b>	Lauracea	Cancer
<b>Longoza</b>		Stomache
<b>Sopatra</b>		STD (Sexually Transmitted Deseases)
<b>Aferontany</b>		Belly ache
<b>Tsiandrova</b>		Strong malaria, stomache
<b>Arongana</b>		Anti-hemorraghe for women to give birth
<b>Famatotr'akanga</b>		Tired
<b>Tanatrandraka</b>		Tired
<b>Mazambody</b>		To stop blood pressure

(Source: Results analysis from the field trip, 2010-2013)



Most of elders have huge background of medicinal plant, where to collect and how to use it. Actually, numbers of foreigner researchers used their knowledge to sell abroad, and they do not receive direct impact, they became aware not to share to the visitors. Almost medicinal plants are collecting to the forest area, and indigenous people know this method since ancient time.

**Tab 7: Comparison of health care services**

Place	Type	Distance from Ambavaniasy	Transportation cost	Services	Consultation cost
Ambavaniasy	Health Center			Give birth, little medicine	500-10.000 Ar
Beforona	CHD II*	10km	1200Ar	General medicine	10.000 Ar to 50.000 Ar
Andasibe	CHD II	15 km	2500 Ar	General medicine	10.000 Ar to 50.000 Ar
Moramanga	CHD II	37km	5000 Ar	General medicine	10.000 Ar to 50.000 Ar

(Source: Results analysis from the field trip, 2010-2013)

\*: Hospital Center for the District, Second Level

Before, there is no health center at Ambavaniasy, people used to go to Beforona, Andasibe or Moramanga. When traditional healers can treat case, they stay at home, when it is special case, they go to around area to find cure. Actually, services are high cost for locals.

Concerning health center of Ambavaniasy, there are traditional nurse (midwife), graduate nurse and one doctor (3 employers). Normally, they work 6 hours a day, but when there is a special case (birth, long sick) they work every time even on night. Their services are very limited, look after pregnant, advice family planning, little medicine and collaborate with traditional healers to exchange services. The presence of midwife is one step to convince rurals to join health center, avoid giving birth everywhere. For recent future, they would expect to create pharmaceutical laboratory such as MIAR (Malagasy Institute for Applied Research) but it did not until now due to the long formal procedures. Also, it is difficult to record birth or death because, local still practice old medicine, health center is far from another place. Meanwhile, they treat 15 to 20 pregnant per month, where other health centers are located to Beforona, Andasibe or Moramanga.

Concerning children education, there is one primary school at Vohimana build by MATE. The advantage is that they provide food for kids. When children achieved first stage, whether their

parents have financial resources, they do not send their children to study to Beforona, Andasibe or Moramanga, nor do the children help their parents to do farming activity.

**Tab 8: Transportation cost and constraints to teach children (Money: Ariary)**

Place of Secondary School	Distance from Ambavaniasy	Transportation cost	House renting
Beforona	10 km	1200	6500
Andasibe	15 km	2500	10000
Moramanga	37 km	5000	15000

(Source: Results analysis from the field trip, 2010-2013)

Educate children in such spend amount for rurals. At Ambavaniasy, parents spend 1600 Ar per month for school fees, if they wish to follow their study; they should pay numbers of duties such as inscription fees (6000Ar), overhead (24000Ar), and installation fees. Most of parents rent house to minimize expenses and to avoid paying transportation cost, round trip Ambavaniasy-Andasibe cost 5000 Ar. These expenses increase when family have more children (4 to 8).

**Tab 9: Comparison of health care expenses**

Placed	Type	Distance from Ambavaniasy	Transportation Cost	Health services
<b>Health Center of Ambavaniasy</b>	Little Health Center	0		Give birth, pregnant massage, little medicine
<b>Beforona</b>	CHD II	10km	1200	General medicine
<b>Andasibe</b>		15km	2500	
<b>Moramanga</b>		37km	5000	

(Source: Results analysis from the field trip, 2010-2013)

Before the intervention of MATE, there was no health center, people used to go to Beforona, Andasibe or Moramanga. When traditional healers can treat locally, they stay at home, if it is a special case, they go to health center to fin medicine. Actually, health services stay at high cost for locals.

## 1.2 RESULTS OF PARTICIPATORY ACTIVITY

This paragraph summarizes participatory activity operated in the region.

**Tab 10: Comparison of different participatory program**

Type of Grouping	Head	Activity	Date Started	Gender Representatives	Members Recorded
<b>Management Committee (COGE)</b>	Mahandry T: Rakotomalala	-Sensitize people -Manage local association -Target: to become a cooperative	End of 2010	Men and Women	11
<b>Health Committee</b>	Davidson Rakotoarimanana	-Advice traditional healer to become formal -Sharing experiences -Organize training		Men and Women	20
<b>Women Center</b>	Rasoanirina Clarisse	-Selling local products -Call women to join association -Provide training for members	2008	Women	300
<b>Arina Association</b>		Charcoal production		Men and Women	
<b>Manarapenitra Association (former name APIPAM)</b>	André	Collecting medicinal plant	2006	Female, Youngster and Elders	100 (divided to 40 for each subgroup)
<b>Fanantenana Tsaravoatra</b>		Gather beekeepers	2003	Men and Women	
<b>Merci Vohimana: -Tourist Guide</b>	2011: Rakoto	Ecotourism Guide	2008	Men	4
<b>-Carriers Luggage</b>	-Ambavaniasy: Manda -Sandrasoa: Ndrasana -Vohimana: Tody	To bring tourist luggage or visitors Organize carrier turn	2008	Men and Women	Amb: 6 Sand:8 Voh: 14
<b>Vita tanana</b>		Handcraft		Men and Women	
<b>Eucalyptus Association</b>		Reforestation using eucalyptus wood			
<b>Vohimana Salama</b>	Rakoto Mamelona			Men and Women	

(Source: Results analysis from the field trip, 2010-2013)

For each activity, women always take part in order to satisfy daily needs. Some elders take part too to the same purpose.

Management Committee or COGE is a legal entity, a local institution to manage associations, organize meeting, local workshop and sometimes enforce rules. Similarly, the MATE transfer full or partial management of conservation to communities.

Health Committee is a group with particular purpose, sharing and collaborate to traditional practitioner of medicine (healer and midwives), it convince these people to become formal. Most of villagers practice traditional medicine. Health Committee and Management Committee are not really an association but a professional grouping for specific interests. Each village has their own

traditional healers. When exploring gender participation, women center remain the reserved activity for women and can be taken into consideration in development activity.

**Tab 11: Women Center Activity in Vohimana**

	Office	Members	Activity	Use of money	Problems encountered
<b>Women Center</b>	Ambavaniasy	300	-Handicraft, weaving, sewing; -Selling local products: handcrafts articles, essential oil, jam, wild honey	-investing in materials -Bringing motivation for some members	-Market channels -Quality -Motivation of some members to respect order -Seasonal activity

(Source: Results analysis from the field trip, 2010-2013)

Activity of women center helps members to fulfill the gap of financial and daily needs. Interestingly, this association has opportunities as they are nearly at the side of NR2; they get benefit from training program from MATE and technical support. During season of tourist, they earn many kinds of benefits (monetary and non-monetary). Unlikely, the lack of market chain, the quality of articles and the attitude of some members disable the run of the association.

The same problem occurs to other association where most of members complain the discontinuity of employment. Collecting leaves is difficult to practice due to the distance to find raw materials and services are little paid.

**Tab 12: Activity of collecting plant**

Type of leaves	Weight/person	Time Spend during collect	Salary since 2010	Place to find plant
Radriaka	20 kg	1 Hour	2000 to 4000 Ar per day	Primary or Secondary Forest,  Growing field
Dingadingana	20 kg	1 Hour		
Longoza	30 kg	1 Hour		
Sakarivondambo	30 kg	1 Hour		
Ravintsara	50 kg	30 mn		

(Source: Results analysis from the field trip, 2010-2013)

There is an alembic to produce essential oil at Vohimana. Since 2002, the salary to collect leaves was 25Ar/kg per person. On 2006, it was 100 to 114 kg per person. Actually, the parts of one person decrease to 40 kg because there are more collectors now (100 members). Collecting longoza and

sakarivondambo spend one hour, it's easier to find while radriaka contains span that difficult to cut. Also, dingadingana and radriaka are distant on location (3km); transporting 90kg spend 8 hours and 3 times to bring. Collecting task may spend 2 days and these leaves are difficult to store. When leaves change color, it loses their therapeutic characteristics. The salary depends on weight delivery to the alembic and this activity stay at temporary. The process of order is the leader of each group receive letter from the responsible of the alembic.

Concerning activity of Merci Vohimana, they concentrate their effort on ecotourism services and derivatives. Tourism guide already start their activity since 2000 when some visitors explore forest to find orchid, to see lemurs. The native have unlimited background for their forest area. Since it was formal activity, wide range of products have created such as forest trekking, swimming on the waterfalls, visiting botanical gardens, rustic accommodation and little adventure inside forest. The guide helps also foreigners and researchers to explore endemic richness. Carriers group look after to bring tourist luggage. Some foreigners meet difficult to access Vohimana protected area because, there is no road to join the site, trekking spend 45mn with 2 rivers crossing and heavy walking on slippery path and railway. Women take part on carrying luggage to earn their part.

These two activities meet problem because tourism is a seasonal period, which they earn amount of wages from May to September.

Talking the management of local association, they use the same procedures. When they organize meeting between members, the staff send letter of invitation 3 days before to the target person, the delegate of each villages then spread the information, for each members. They should do this process because some members have particular role inside society and letter follow some hierarchy procedures in case of inviting Tangalamena, Elders or Chief of Fokontany. The requirements to join association committee, is having ID card, must be a landowner. They do the same method when they inform other members about attending a meeting or a workshop or to recruit some collaborative colleagues. But if they need only one person, they call the Tangalamena to choose the right person. They elect members by voting system. And their internal rules should be respected by each member.

Despite members are quite satisfy of their salary, most of them earn some form of benefits, and positive externalities such as employment, market, health center and education, while a fringe of people always complain due to local procedures and attitude of participatory involvement.

**Tab 13: Indicators of Price of daily needs (money:Ariary)**

Type of food	Weight	Local Price	Price at Beforona	Transportation cost	Observation
<b>Rice</b>	1kpk 1 kg	300 1200	900	50kg: 2000	Daily needs
<b>Salt</b>	1 kpk	500			Daily needs
<b>Dry fish</b>	1 pack	250 – 500			
<b>Sugar</b>	1kpk	900			
<b>Coffee</b>	1kpk	900			
<b>Ginger</b>	1 kg	800			For selling
<b>Seeds of ginger</b>	1 kg	2000			
<b>Black Mushrooms</b>	1 kg	6000			
<b>Green Banana</b>	1 kg	400			For food and for selling
<b>Hens</b>	1 piece	10000 – 12000			Eat meat for special occasion (29 March, 26 June), or selling for urgent financial needs
<b>Pig</b>	40 – 50 kg	200000- 300000			
<b>Porc</b>	1 kg	6000			
<b>Charcoal</b>	1 bag	5000			2010:2000 Ar

(Source: Results analysis from the field trip, 2010-2013)

The spent of family depend on the size, for example 3 members may spend 3000Ar per day, 5 members 5000Ar. Production of rice are not sufficient for food, sometimes the grocery buy goods around and increase the price at Vohimana. Villagers consume dry fish to compensate their need for animal protein. In case of Vohimana, there are more than family members in the same house, with adding expenses to the education, school fees and healthcare, they should complementary activity to compensate this gap.

**Tab 14: Estimation of household still practice tavy**

Period	Household
2010	10
2012	20
2013	30

(Source: Results analysis from the field trip, 2010-2013)

Tavy is the one the only cropping techniques mastered by villagers. They know this practice from their parents. When NGO have begun to educate people to stop tavy, access of forest area have limited. Most of them are frustrated. For ten years activity, despite of they know that tavy is a bad method, some families still doing this, and it has increased during the transition period, 2010 to 2013.

### 1.3 RESULTS OF MATE ORGANIZATION

At the beginning when MATE started their activity, their framework concern three components: conservation, environment, and integrate development. When they started activities such as ecotourism, they limit access to forest and most of people lose their land in favor to the protected area. Then The NGO promise traditional landowner to get compensation. They started various program to generate incomes and grouping people in each knowhow such as reforestation program, forest control, seed nursery, social program, health and education, economic program, agricultural and production of essential oil. These activities aim to change the habit, and to find another source of income. After few years, they delegate other management to locals.

When association are created, NGO provide fund until they became independent, they transfer management into local population. Meanwhile their decision-making process generates positive and negative view to villagers:

As positive view:

- ✓ Building primary school and health center;
- ✓ Involves local to join association and development program: women center, merci Vohimana;
- ✓ Provide household income;
- ✓ Create job;
- ✓ Provide food for children by building school canteen;
- ✓ Provide technical support for local industry: health, handcraft, farming, agriculture.

As negative view:

- ✓ Process of hiring people always generate local conflict;
- ✓ Employment they offer are temporary, it depend on order (handicraft, collecting plant), seasonal period (handicraft, ecotourism, carrier luggage);
- ✓ Procedures of giving seeds;
- ✓ They did not realize their promise to compensate who have lost land;
- ✓ Information are not shared uniformly;
- ✓ They never enforce rules, and when local conflict occurs, the staff representatives go back directly to Antananarivo.

#### **1.4 BARRIERS TO PARTICIPATION**

When observing local reality, there are a range of people who never join association, or stopping their participation. This case may due to several factors. Approximately, 85% of all respondents have reported some form of barriers that can be summarizing below:

- ✓ Some people were disappointed of internal organization and prefer doing task individually;
- ✓ Technical support take a week and people prefer stay at home to provide food for their families;
- ✓ Activity stayed temporary, others prefer follow their actual job: case of grocers, sellers;
- ✓ Some villagers do not know anything of local activity due to their distant location, despite of belonging to MATE intervention: case of Andasifahadimy;
- ✓ Characteristics of behavior of Betsimisaraka tribute: most of them are reticent, not loyal and hypocritical towards each other and outsiders. When there is something new, most of them are waiting until it generates positive results: case of convincing people to practice family planning, seeds program;
- ✓ Rich people always critics the poor when they are doing local activity.

#### **1.5 PERCEPTION AND OPINIONS AMONG VILLAGERS**

Perception and opinions depend on level of knowledge acquire by someone during their life, it also depends on experiences of whose taking responsibility and have taken part at the starting activity. It can be summarized below:

i) Perception about conservation:

When knowledge of people have at least secondary level (4%):

- forest can be preserved by law enforcement;
- the creation of institution to survey tavy practices;

ii) Perception of local involvement:

- Choose only the persons who wish really to cultivate, after the results can see by outsiders, and convince them to apply this method;

iii) Perception of management decision:

- NGO should leave some management to locals: educate people, sharing seeds;



- NGO should hire only for those who lose their lands inside the protected area, and if they did not apply, they can call others;
  - Employment should be permanent to avoid people to stop tavy
  - The NGO should educate members about different marketing chain.
- iv) Expectation about change:
- The Management Committee may become a cooperative if it's really works;
- v) Expectation for forest conservation:
- When doing education campaign it should be done village by village, at the time where they finish work (around 3 or 4pm);
  - Doing task inside community required the respect of traditional procedures: inform the Tangalamena, Elders and local authority, and using them to convince villagers for example too stop tavy, to involve participation, to start new activity.

## **1.6 LIMITATIONS AND CONSTRAINTS**

To realize field research is a difficult stage to verify scientific method and literature findings. When doing data collection, it meets numerous constraints and limitations. Doing this task required funding, students become native and adapt to local situation, rainy weather, less comfortable. The main barriers to collect information are:

- Most villagers are annoyed when students come to ask them to answer the questions; they waste time for working, searching foods for their family. Only their leaders complain that we should compensate them when doing interview;
- Most of respondents were women and elders or those who take care little children due to there is no day that they stop working, even on Saturday or Sunday;
- Some leaders of family have been caught on the road to go to work, at the place where they work, or at lunchtime;
- Some people did not wish to participate in the interview, those are simple villagers;
- Now, it is difficult to interview traditional healers due to some foreigners have exploited their knowledge to perform drug for medicine that there is no compensation for their knowledge.

## CHAPTER 4 DISCUSSIONS AND RECOMMENDATIONS

This chapter debates findings with expert view and academic patterns apply by some scientists around the world. Discussions are focused to analyze different dimension: spatial approach, conservation approach, participatory approach, etc.

### SECTION 1 SPATIAL CONSIDERATION

This section gives an understanding of spatial advantages of the study area.

When observing the geographical location (see the map on figure1), Vohimana is located between cluster of significant competitive advantages, their neighborhood are frequented by visitors most of the time. The North, Andasibe-Mantadia Park are frequented by foreign tourist along the year and tourist operator added this place in their tourism package. The East side, the township of Beforona, is most frequented by transport operators to collect local products, to supply the big township of Moramanga or Toamasina. Meanwhile, some authors argued that space play a better role in regional growth; it allows further economic activities to create distinct polarities that enable a new process of development which is based on the interdependence of local resources, location and economic structure. Consequently, endogenous and exogenous elements are both given similar importance. Endogenous elements concern all local resources and products whereas exogenous elements are infrastructures installed in particular location<sup>55</sup>. In addition, space is one of the factors to boost local development as exposed on endogenous growth theory; it can be a source of economic advantages such as income, land, raw materials, and distance proximity to reduce transaction cost. Here the concepts of space become the forces to driven local development. This location concept have used by some developing countries to develop their region, their strategies stress the promotion of local industry, the value of local resources by inviting members of community to take advantages with employment opportunity and wealth sharing.

In Vohimana, economic activity are very limited on primary sector (agricultural, farming, handicraft, and sylviculture), secondary sector are limited on production of essential oil, a very few proportion of jam production. Despite of medicinal plant can be raw materials for pharmaceutical and fragrance industry. Their third sector is at embryonic stage and some efforts are needed to train farmers to become an economic agent.

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55 Roger Cadieux, 2002, Local Development, workshop of the Montreal Summit [ville.montreal.qc.ca/pls/portal/docs/Developpement\\_local.pdf](http://ville.montreal.qc.ca/pls/portal/docs/Developpement_local.pdf)

Space play a role to improve local development, meanwhile strong efforts are needed to reorganize local process and members of community to take advantages the monetary and non-monetary benefits.

## **SECTION 2 CONSERVATION AT THE CENTER POINT OF DISCUSSION**

Location of Vohimana have huge particular richness, advantages to exploit these resources are local, regional, national and global level. When observing the fact, communities are extremely dependent on their daily needs, source of alternative medicine, food, land, both improve their livelihood and their economic activity, it depend also on forest as source of income, income for ecotourism services, raw materials for handicraft. It can be also a cultural identity; some traditional rituals need specific leaves. At national and global level, forest conservation help to regulate climate, preserve ecosystems and endangered species.

Yet, most of program of forest conservation have demonstrate how much this value<sup>56</sup>contribute enormously to rural livelihoods. In many areas in Latin America, Costa Rica, Brazil, Peru, access or some products or agriculture play a vital role for household and locals to cover their basic needs (nutrition, construction, fodder, tools, fuel and medicine) and income. Meanwhile, agricultural practice stay the main causes to damage forest by the practice of slash and burn .The main causes of deforestation at Vohimana are this old practice where, most of indigenous underlined (90%) the used of tavy. Obviously, it is linked to cultural identity, a kind of way to communicate to their ancestors, and most of them get land by inheritance, that's sound informal but recognized by traditional authority. Until now, due to factors of rural poverty, employment discontinuity, political instability, a fringe of families still apply tavy and never been enforce by rules. Consequently, it becomes a barrier to develop some activities and threats of the core of local economic development, and raw materials for some sectors. When MATE started their activities, their first objectives are conservation of forest. 10 years past, the forest loses their surface for an unsustainable way.

Their program concern environmental educations, development of income generated activities by involve locals to work in different areas, grouping inside association and practice collaborative

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56 Carlos Cornejo et al., 2010, Opportunities and Challenges for Community Forestry : Lessons from Tropical America Forest and Society –Responding to Global Drivers of Change, IUFRO, Vienna, Austria, 16 [http://www.iufro.org/download/file/5903/4668/299-314\\_pdf/](http://www.iufro.org/download/file/5903/4668/299-314_pdf/)

management. Different associations are managed by COGE and initially funded by MATE. There is an idea of collaborative management<sup>57</sup>.

Actually, recent findings stress the place of community forestry to manage their area. The concept of community in conservation is a very complex package where they can be the key actors to promote their area, local managers. Most of development agencies apply the concept of Community on successful conservation because it plays roles on geographical advantage, strengthens social structure (social capital) and collaborative works help to share norms, increase common interests, affect conservation behavior to respond to internal or external threats and enforce rules. In practice, implementing collaborative actions at community level<sup>58</sup>, the process should be:

**First Step:** Identify multiple interests' actors: when dividing communities into subgroups with goals and preferences, one subgroup can be effective to manage natural resources;

**Second step:** local level actions under negotiation, agreements and conflict resolution. This stage is at the policy applied by local authority and NGO to involve communities in management processes;

**Third Step:** Institutional arrangements: institution helps to enforce rules, conservation and resources management. To address it, the managers should:

- Identify the ability of locals to create and enforce rules;
- Identify internal rules of each association even formal and informal;
- Identify actors to define specific rules as traditional knowledge, property rights and forest resources;
- Finally, these prerequisites cannot be effective without collaborative management with local authority a decentralized administration to resolve local conflict under community representatives.

Information campaign of this program always began with a workshop organized locally, in order to define target beneficiaries and technical assistance and training provided by conservation NGO.

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57 Alex Conley and Ann Moote, 2001, Collaborative Conservation in Theory and Practice :A Literature review, Udall Center Publications, the University of Arizona, 34  
[http://udallcenter.arizona.edu/publications/epp/pdfs/2001\\_conley.moote\\_collaborative.conservation.pdf](http://udallcenter.arizona.edu/publications/epp/pdfs/2001_conley.moote_collaborative.conservation.pdf)

58 Arun Agarwal, 1999, Enchantment and Disenchantment : the Role of Community in Natural Resources Conservation; World Development, 27 :4, 629-649, Elsevier  
<http://www.elsevier.com/>

## 2.1 TOURISM DEVELOPMENT APPROACH

Tourism development is one way to conserve forest area by using specific products, the value of natural resources.

On tourism development approach, there is idea of conservation, leisure activities and human resources are provided by indigenous, live near the protected area. Numbers of international institution and development agencies have argued that a good management of environmental resources can help reduce poverty rate because most people rely on natural resources to fulfill their daily needs, such as food, water supply, medicine, and air and soil quality. There is idea of ecological tourism, local management and poverty reduction. These principles can be meet at Vohimana Community Forestry, there is a value of ecological tourism, genetics and biodiversity conservation can be transform as a tourism package (Babakoto circuit to explore richness to primary forest), water quality, climate, soil quality and medicinal plant. Ecotourism activity in high season provide income directly for actors engaged in each chain of organizational matters (luggage carriers, tourist guide, accommodation services) and indirectly for derivative activities (handicraft, small-scale grocery, small shops, plants and souvenir articles). Meanwhile, without adequate framework, economic forces of ecotourism can stayed at the stage of poverty.

However academic findings reveal relationship between tourism<sup>59</sup> and economic growth, tourism may be an effective tool for economic development, a specific variables and factors: availability of skills, labor market, outsiders to share skills and competence. Outcomes can be the impact perceived directly or indirectly by indigenous to improve income and contributes to economic growth. Labor market is provided by the communities. At the center plays of tourism development, community is the basis actors to play and engaged in various components. Involving locals help to organize themselves, collaborate with authority, identify potential product and leisure's, behavior responsible, participate in decision-making processes, ensure positive benefits and work closely with NGO within integrated projects.

Tourism development<sup>60</sup> can meet success if it follows this approach:

- Self-help approach to community development in Tourism Development by taking advantages of resources within community;

59 Marcelino Sanchez-Rivero and Pablo Juan Cardenas-Garcia, 2014, Economies of Tourism Destinations : Population characteristics and the impact of tourism on economic development, *Journal of Tourism Geographies*, 16:4, 615-635, Taylor and Francis Online <http://dx.doi.org/10.1080/14616688.2014.889207>

60 Fariborz Aref et., 2010, Tourism Development in Local Communities: as a Community Development Approach, *Journal of American Science*, 6, [http://www.jofamericanscience.org/journals/am-sci/am0602/26\\_1215\\_Communities\\_am0602.pdf](http://www.jofamericanscience.org/journals/am-sci/am0602/26_1215_Communities_am0602.pdf)

- Technical assistance approach based on technical information and expertise for improving tourism on local communities;
- Conflict approach: to get people together to change community, it can be equal distribution of resources, and focused on limited power.

### **2.1.1 The Case of Payment for Ecosystem Services, issues to preserve forest:**

Payment for Ecosystem Services and REDD+ initiative (Reduction Emissions from Deforestation and Forest Degradation and Carbon Storage) are an innovative framework to promote forest conservation. And the application of REDD+ should compensate all level of stakeholders. This initiative is advocated by many indigenous communities from pioneered countries to claim their rights to get opportunity from forest assets otherwise they may lose their Prior Informed Consent of land tenure<sup>61</sup>.

In Vohimana, traditional landowner, traditional healer and Tangalamena have always claimed their rights to compensate their land in favor of protected area. Dramatically, their basic needs may change but they lose their traditional knowledge while outsiders take benefits from their natural area (exploitation of essential oil, trade of endangered species) that there is no direct impact perceived by them.

Actually, REDD+ initiative is a program implemented for forest area around the world (Brazil, Indonesia, Vietnam, Nigeria, Cameroon, Tanzania and Sri Lanka) to reform policy conservation by define the stakeholders, their responsibilities, the role of local authority, the role of local institution to manage local conflict, forest tenure, business exploitation, PIC and transparency to manage fund from donator.

In Madagascar, implementation of REDD+ program<sup>62</sup> are operated in the region of Makira Park (Eastern Region) and the Corridor Ankeniheny-Zahamena, protected area managed by International Conservation.

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61 Anne M.Larson et al., 2013, Land tenure and REDD+: The good, the bad and the ugly, Global Environmental Change, 23:3, 678 – 689, Elsevier,

<http://www.elsevier.com/>

62 Desbureaux Sébastien and Brimont Laura, 2014, *Between Economic loss and social equity: the multi-dimensional cost of avoiding deforestation in Madagascar*; World Development, 27:4,31, Elsevier  
<http://www.jma2014.fr/fichiers2014/255/Desbureaux-JMA2014.pdf>

Tourism development is an alternative to boost local development as it belong to the major economic sector of Vohimana.

### **SECTION 3 ROLE OF COMMUNITY ON LOCAL ECONOMIC DEVELOPMENT**

The previous section stresses the role of community on conservation and stress the position of Management Committee to control forest area.

This section explores the role of community under the concept of Local Economic Development (LED) and the approach of participatory method.

Local Economic Development is a framework to conduct a project management, sharing experiences among local leaders. At this point, to integrate development, community must collaborate in various forms, public private partnership (PPP), Collaborative Management (COMA), institution and local systems, civil society and NGO, encouraging competition and create job.

Community is at the center of human resources development. When combining development scheme into community, community development is described as the processes by which local communities can raise their own standards of living. It includes the organization or establishment of services such as social welfare, health protection, education, improvement of agriculture, development of small-scale industries (UNESCO, 1956).

At this stage of framework, LED is applied by number countries in Sub-Saharan Africa, south-East Asia and Latin America. It is also a holistic approach, combined with multi method analysis. Collaborative in various form are conducting to explore the concept of participatory, in the scheme of natural resources conservation.

#### **3.1 – THE PARTICIPATORY APPROACH**

When debating that community is at the center of human resources development, this section discusses the level of participatory involvement at Vohimana, followed by participatory method that meet success from some countries.

Since outsiders held management of local area of Vohimana, they are changing the main sources of household income to various sections. Communities are inviting to join this section with target and objectives.

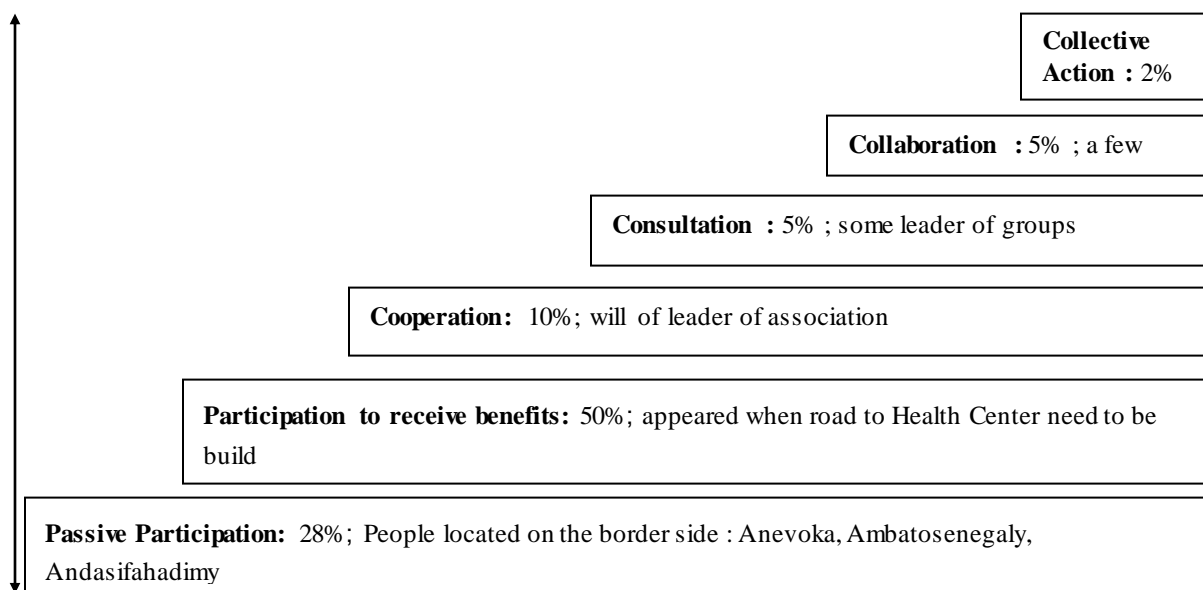
At Vohimana, there are many participatory processes grouping under association: women center, merci Vohimana, and son.

And each gender, women, men, elders take part in activity.

Meanwhile, when joining association, people are not very enthusiastic, there is a lack of motivation because most of the task are temporary, contribute a little to income and most of them were complaining about procedure of recruitment that they should hire a person who lose their land in favor of Protected Area. Other groups decided not to join local association and work individually due to the NGO never realized compensation promises and they do a lot of program with bad results, and there is a lack of sharing information inside township.

When observing level of participation at Vohimana, Betsimisaraka tribute is reticent, not loyal and hypocrites towards outsiders to start integrated project, most of them wait the first result. If it is positive then, others follow the method. This level of participation can be described into two steps: passive participation and participation to receive benefits. Passive participation is an attitude where people “participate by being told what is going to happen or what has already happened and there is no information sharing between people and external factors. The second level is participation to receive benefits; in this case, people participate as long as there are material benefits to be realized. Once the benefits run out, they stop to prolong activities.

This figure draws ladder of participation at Vohimana and estimation of people in each level of participation:



(Source, adapted by Pimber and Pretty, 1995)

**Figure 5: the ladder of participation at Vohimana**



This ladder of participation is a real barrier to lead local community at Vohimana.

As a framework of LED, there are many participatory methods that we can apply at Vohimana: Sustainable Livelihood Approach (SLA), Participatory Rural Appraisal (PRA), Participatory Appraisal of Competitive Advantage (PACA), and Rapid Situation Analysis (RSA).

This participatory name depends on the founder of the concept. Almost of this method have been applied in case of regional context. As participatory, it must involve local community as observed in various form such as passive participation, the participation to receive benefits, the cooperation, the consultation, the collaboration and the collective action.

### **3.1.1 Sustainable Livelihood Approach**

Sustainable Livelihood Approach<sup>63</sup> is a tool applied by development agencies to assess the level of livelihood for categories of group as household, extended family, social group or community. It insert idea of sustainability to explore different assets of livelihood such as tangible (food stocks, stores of value such as gold, jewelry or cash savings), and resources (land, water, trees, livestock and farm equipment) and also intangible assets (demands and appeals), and access to use resources; obtain information, material, technology, employment, food or income.

After then this assets are grouped into four categories of capital:

- Natural capital: natural resources (stocks of soil, water, air, genetic resources) and environmental services (hydrological cycle, pollution sinks);
- Economic or financial capital: cash, credit, savings;
- Human capital: skills, knowledge, ability to labor, good health and physical capability;
- Social capital: networks, social claims, social relations, affiliation and association.

SLA is more complex than other method because it explores range of dimension of economic activity, level of poverty, factors to affect human well-being and the people's involvement. Briefly, it produces holistic view by mixing different resources including the four categories of capital.

To apply SLA as based on development agencies framework, it follows these steps:

- a participatory assessment;
- analysis of the micro, macro and sectorial policies;

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63 Lasse Krantz, 2001, The Sustainable Livelihood Approach to Poverty Reduction: an introduction ; SIDA, Division for policy and socio-economic analysis, p44  
<http://www.sida.se/>

- an assessment and determination of the impact of science and technology, to indigenous knowledge;
- an identification of the social and economic investment mechanisms (micro-finance, health and education);
- An assurance that the first 4 stages are integrated in real time.

However, as framework, this tool stay at the stage of tool for consultancy and doing this strategy on field research may spend more time and some components may not meet the objective of the developer.

### 3.1.2 Participatory Rural Appraisal

The Participatory Rural Appraisal<sup>64</sup> (PRA) is used by much underdeveloped organization in target countries in Africa, South Asia in the mid-1990s. Moreover; state organization used it on national program in Kenya, India, Indonesia, Sri Lanka and Vietnam. The success story of this method was in Kenya.

It is a participatory method to explore local people, their life and level of knowledge. The research can be focused for one topic of investigation or mixing causal effects, that the advantages of this approach is to invite villagers to express their point of view, to make decision and become aware to improve their own situation.

The most characteristics application of PRA has been the involvement of the poor in process of development.

There are 5 key principles:

- It includes local participation, community involvement to work as a team to share experience and analyzing information;
- it uses the combination of techniques but depend on local context such as the size and skill mix of the PRA team, the time and resources available and the topic and location of the work;
- PRA is conducted by a local team who's speaking the local dialect, with a few outsiders, women workforce and a mix of sector specialists and social scientists but depend also on the context;

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64 Robert Chambers, 1994, The Origins of Practice of Participatory Rural Appraisal ; Pergamon, WorldDevelopment, 22: 7, 953-969  
[https://entwicklungspolitik.uni-hohenheim.de/uploads/media/Day\\_4\\_-\\_Reading\\_text\\_8\\_02.pdf](https://entwicklungspolitik.uni-hohenheim.de/uploads/media/Day_4_-_Reading_text_8_02.pdf)

- PRA works in terms of time and money available, information reported should demonstrate recommendations and decisions.

These approaches have been used to explore case on natural resources management, agricultural sector, and poverty dimension and health and food security.

Actually, this concept meets different innovations but they keep original idea and stress the utility of participatory method to collect original point of view of grassroots level.

### **3.1.3 The Participatory Appraisal of Competitive Advantage (PACA)**

This method has been developed by consultancy groups over 16 countries over the world and has been successful in Brazil and Sri Lanka. And this countries present different case of Community Forestry, at this stage they are pioneer on natural resource management.

The PACA<sup>65</sup> is a set of tools to analyze the competitive advantages and disadvantages to induce local development on the regional economy. It focused to involve local stakeholders, public and private sector, civil society and ownership in order to improve their local economy.

To implement this method, it follows different steps as:

- Formation of PACA team chosen during a workshop in the targeted beneficiaries. There numbers are 3 to 6, composed by external consultants, local members from local authority, business chambers, business association, local university and other local organization;
- Organize a workshop at least 3 Hours
- Organize 5 steps mini workshops or PACA fieldwork (1 or 2 weeks), to collect information about specific sectors of the local economy and made interviews to get local information;
- Result of the workshop (1 day) that is discussed only by the PACA team members for quick wins, or medium and long term projects;
- PACA presentation event (3 hours): the PACA team present the prior project to the key actors invited during the first workshop, get feedback and suggestions, and justify the project chosen;
- Select champions to lead the projects during a voting system;
- Monitoring and evaluation will be doing after the first month by the PACA specialist assisted by the local community invited to a workshop.

Meanwhile this method has strengths and weaknesses to induce good result.

There are strengths to be outlined under this process as listed below:

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65 Takalami Ramakumba, 2014, Participatory Appraisal of Competitive Advantage (PACA) Approach in Local Economic Development ; Taylor and Francis Online, Development in Practice, 24:7, p10  
<http://dx.doi.org/10.1080/09614524.2014.953036>

- quick process do not waste time and money;
- active local participation, the key actors suggest, give opinions and propose projects;
- collaboration and sharing experience between key actors and foreigner experts;
- Empower local stakeholders.

While the weaknesses are:

- the key actors selected not really represent the poor people;
- limited on local case and projects are made in short time;
- limited members of PACA team and foreigner experts are paid from consultancy company while local members are unpaid that's to say they are not to be compensate to waste their opportunity cost;
- invited people might not represent ideas to boost local economy and chosen projects on their own interests;
- interviews are done only with short selected individuals, that did not represent different spheres of local economy;
- selected champions may attach personal interests in the objectives of the project;
- Quick process to identify project may biased indicators and tangible benefits.

### 3.1.4 The Rapid Situation Analysis (RSA)

This approach appeared when poverty still expands the gap between individuals inside society. The Rapid Situation Analysis (RSA)<sup>66</sup> is a hybrid, participatory bottom up research approach applied in the first time in the town of Elmina and Cape Coast of Ghana, in the scheme of sustainable tourism development.

The Rapid Situation Analysis (RSA) is a hybrid, participatory bottom up research approach which allows local people to participate, to give local realities, to find issues on sustainable tourism and to give insights for researchers about local knowledge. The aim of this method is to reduce gap at local level. It combines qualitative and interpretative approach about local activities and local knowledge, the social organization and help to understand local realities.

It combined method with Rapid Rural Appraisal<sup>67</sup> (RRA) and Participatory Rural Appraisal (PRA) and other additional elements.

To apply this method spends 5 months, and it follows these steps:

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66 Christina Koutra, 2010, Rapid Situation Analysis: a hybrid, multi-methods, qualitative, participatory approach and researching tourism development phenomena; Taylor and Francis Group online, Journal of Sustainable Tourism, 18:8, p18  
<http://dx.doi.org/10.1080/09669582.2010.497221>

67 Rapid Rural Appraisal is the method appeared in the late 1970s, it is a qualitative survey methodology or semi structured activity to find information, formulate hypothesis and combined local and scientific skills. On 1980s, it became subject of academic papers

- Evaluate relationship between local stakeholders, government organization, institutions and business operators touched to the tourism sector;
- identify any local participation;
- to evaluate their role on sustainable tourism program;
- Study the relevant case study in order to overcome poverty.

### **Practical Process**

(1) First contact and recruitment of a research assistant:

- meeting with local academic experts on tourism sector such as geographers and tourism developers;
- This group of people called «*research assistant*» identify population sample (key actors or focus group) from grassroots level, done local interview and made translation. This group can be assisted by a local assistant to increase relevance of the research and one tourism consultant who's briefed about the locality, history, people and tourism;

(2) Observation which consist to explore people's actions and behavior, events and local interactions. Here the researcher decide to go «*native*», use the method of «*being-in approach*» and spent one month to live among communities, wandering around the towns, questions among people and participate in different social activities such as anthropological works, gender occupation, involvement of communities, the presence of infrastructure and superstructure in the area.

At the end they evaluate the poverty level of community, opinions and suggestions and to plan framework to respond local issues. They used also, rapid report writing technique, technology tools such as video camera, photography and dicta-phone to capture some useful information.

(3) identify key local actors using snowball sampling technique: this third step consist of identify key informants, create a list of expected people to generate data and asking people from different spheres to collect opinions of this area, the background, their experience in local industry, and data selection was used to generate theory.

(4) Made interview among communities using technical tools such as semi-structured interviews, unstructured and structured. Structured interviews consist of questions around certain topics, and interviews were formulated based on skilled people. Unstructured interviews held at grassroots level which are selected during a focus group, to verify certain information about sensitive issues, and formulated according to literacy level of interviewees. And Semi-structured interviews consist of questioning many people belonged to a specified sector with particular background of the topic. Meanwhile, recordings must be transcribed after the interviews.

(5) Feeding the data back to the communities. After completing the collected information, the data is shared into locals with set of meetings, using native language and allow them to participate in the discussion.

(6) Solutions are proposed due to the result of the findings from the observation work, and proposed solutions are made at each level of categorized population:

- Solutions for grassroots level and vulnerable people;
- Solutions for the whole community;
- Solutions for academics, tourism operators and other key actors

Finally, all the proposals should feed back to the target place.

**Tab 15: Comparison of different participatory method**

	<b>Sustainable Livelihood Approach</b>	<b>Participatory Rural Appraisal</b>	<b>Participatory Appraisal of Competitive Advantage</b>	<b>Rapid Situation Analysis</b>
<b>Period of major development</b>	Early 1990	Late 1980s, 1990s	Mid 2000s	Mid 1990s
<b>Majors innovators</b>	Universities	NGOs	Consultancy Group	Universities
<b>based in Main users at first</b>	Development Agencies	NGOs, Government, field organization	Local authority	NGOs, Government, field organization
<b>Main innovations</b>	Methods slightly differ from the organization,	Behavior, Experiential training	PRA method focused on spatial assessment	Idea of quick research Combined RRA and PRA
<b>Objectives</b>	insert idea of sustainable Study the source of well-being using the concept of sustainable livelihood	To gather authentic information from local area	Study local economy	Transform local opinions and send the feedback to the local practitioners
<b>Methods</b>	Using multimethod as participatory assessment	Qualitative and quantitative, using interview techniques(semi-structured and key informants),livelihood analysis, Estimation and quantification, Analysis of difference(gender, social group, wealth/poverty, occupation and age)	Quick Appraisal, quick decision, quick diagnosis, quick implementation projects, monitoring and evaluation at the first stage of the project	Conduct by multidisciplinary team, observation method, gather information from the poor, using recording and photographs, both apply the strengths of RRA and PRA
<b>Area of research</b>	Local level, the	Natural resource	Municipal area	Tourism sector

	poor people	management, agriculture, poverty and social program		
<b>Advantages</b>	Holistic view, show poverty causes, more realistic framework	Teamwork, holistic approach, involve local actors, sharing experiences, indicative of the situation area	Quick process, active local participation, idea of collaboration and sharing experiences and empower local stakeholders	Involve local people at different stage: skilled and unskilled, educated, semi-literate and illiterate, holistic approach
<b>Disadvantages</b>	Limited information of the poor, gender relation; stayed at donor and consultancy work, livelihood opportunities are influenced by informal constraints	Simple method, participatory involved literate groups of people and elite groups not really the poor, women are excluded, may increase differences in culture and power	Selected people may not represent the poor people, project are made in short time, restricted team members, ideas may referred to personal interests	May meet certain level of inaccuracy, information may limited on local context,

All of this approach may be used to conduct participatory involvement in case of Vohimana Community Forestry, as holistic approach; it combined various methods to gather information from field research.

### 3.2 – DISCUSSION OF HOUSEHOLD INCOME AND THE APPLICATION OF CAPABILITY APPROACH AS POWER OF LED

This paragraph discusses the manner how household spend their income and to conduct this study to the capability approach as a practice of Local Economic Development.

Idea of Capability Approach<sup>68</sup> is a more individualistic view that we can drive to influence household expenses.

There are a range of sources of income at Vohimana, take part in employment association, work individually or become a grocery to supply daily needs. Income salary are unbalanced, temporary seasonal activity reinforce the gap of income distribution. Yet, complementary activity (agriculture, farming, handicraft and medicinal plant) fill the gap of daily needs. Most of labor spend amount for

68 Alexandre Apsan Fredian, 2010, Sen's Capability Approach as a Framework to the Practice of Development; Development in Practice, 20:2, 16, Taylor and Francis online, <http://dx.doi.org/10.1080/09614520903564181>



education and health care. Each actor has struggled to participate in social activity, top have a better life.

Despite of earning different salary, each person has expectations, willingness when they consult their families after work. And some of them have advanced various opinions such as saving money, doing efforts to produce more farm product, information of market (e.g. market of medicinal plant, handicraft or essential oil).

When linking this particular situation into capability approach, each people have choice to use their income for valuable things to improve their welfare. Each people have different capability to connect their resources to valuable achievements due to personal choice, external factors and social arrangements. This approach can be applied on gender situation. When women join association, they wish to contribute using their handicraft knowhow to improve their well-being. Introducing this idea are underpinning by space forces, conversion factors and functioning to achieve. Spatial aspect is a force of location advantages; conversion factors may affect personal, social and environmental characteristics.

In practice, handicraft knowhow revealed different possibilities such as personal wellbeing, and handicraft knowhow contribute to achieve individual income by perform valuable articles, local advantages, physical ability to generate income and supply set of materials to satisfy order.

**SECTION 4 ANALYZING DIFFERENT ECONOMIC ACTIVITIES USING SWOT MATRIX**

The SWOT Matrix can reveal some factors that can improve basic information in order to perform a proposed investment project.

This paragraph analyses different sector using SWOT (Strength, Weaknesses, Opportunities and Threats) Matrix in the whole topic as Vohimana Community Forestry, the COGE and case study of economic sector as conservation, ecotourism, medicinal plant and handicraft.

**4.1 SWOT of Vohimana Community Forestry**

<b>STRENGTH</b>	-Potentiality of genetic and biodiversity richness -Medicinal plant to treat medicine at local, regional, national and global level	-lack of educational system -lack of school integration and involvement -lack of management system -lack of information sharing -rules of enforcement	<b>WEAKNESSES</b>
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<b>OPPRUNTUNITIES</b>	<ul style="list-style-type: none"> <li>-Environmental policy</li> <li>-Institutional systems</li> <li>-Implementation of capacity building program: training, technical support</li> </ul>	<ul style="list-style-type: none"> <li>-local behavior</li> <li>-loss of natural resources</li> </ul>	<b>THREATS</b>
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#### 4.2 SWOT of Management Committee (COGE)

<b>STRENGTH</b>	<ul style="list-style-type: none"> <li>-Availability of local skills, labor market</li> <li>-Education as primary school</li> <li>-health center</li> </ul>	<ul style="list-style-type: none"> <li>-participatory motivation</li> <li>-lack of infrastructure</li> <li>-human resource management</li> <li>-rules enforcement</li> <li>-lack of information campaign</li> <li>-management are unsustainable</li> </ul>	<b>WEAKNESSES</b>
<b>OPPRUNTUNITIES</b>	<ul style="list-style-type: none"> <li>-Various outsiders to share experience (graduate student, foreign experts, staff of NGO)</li> <li>-generate source of household income</li> <li>-Provide job</li> <li>-Technical support, training, capacity building</li> <li>-Activity for gender, young</li> </ul>	<ul style="list-style-type: none"> <li>-Bad attitude towards outsiders</li> <li>-Some fringe people change mentality of villagers</li> <li>-People maintain traditional method</li> </ul>	<b>THREATS</b>

#### 4.3 SWOT of Natural Resources Conservation

<b>STRENGTH</b>	<ul style="list-style-type: none"> <li>-Availability of labor resources</li> <li>-Genetic diversity and biodiversity, ecological leisure</li> <li>-Only one location stop tavy as a model</li> </ul>	<ul style="list-style-type: none"> <li>-low environmental skills, low education, low level of literacy</li> <li>-Irrespective of norms and rules</li> <li>-low rate of participation</li> </ul>	<b>WEAKNESSES</b>
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<b>OPPRORTUNITIES</b>	<ul style="list-style-type: none"> <li>-Environmental policy</li> <li>-joining local participation help to preserve forest</li> <li>-reforestation program</li> </ul>	<ul style="list-style-type: none"> <li>-slash and burn agriculture</li> <li>-traffic of animals, plant, amphibians</li> <li>-charcoal activity</li> <li>-rural poverty</li> </ul>	<b>THREATS</b>
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#### 4.4 SWOT of Ecotourism activity

<b>STRENGTH</b>	<ul style="list-style-type: none"> <li>-Availability of labor market</li> <li>-Biodiversity richness</li> </ul>	<ul style="list-style-type: none"> <li>-seasonal activity</li> <li>-low remuneration for locals</li> <li>-lack of skills, technical support</li> <li>-lack of financial funds</li> <li>-lack of advertisement campaign</li> <li>-quality of accommodation</li> </ul>	<b>WEAKNESSES</b>
<b>OPPRORTUNITIES</b>	<ul style="list-style-type: none"> <li>-Tourism destination, tourism package</li> <li>-Building new infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>-Loss of forest area: decrease tourism package</li> <li>-deforestation and degradation</li> </ul>	<b>THREATS</b>

#### 4.5 SWOT of medicinal plant

<b>STRENGTH</b>	<ul style="list-style-type: none"> <li>-Availability of labor market</li> <li>-Treat many diseases, medicines</li> <li>-Raw materials for pharmaceutical firm at national and global level</li> </ul>	<ul style="list-style-type: none"> <li>-Unclear management process</li> <li>-Problem of storage</li> <li>-transparency</li> </ul>	<b>WEAKNESSE</b>
<b>OPPRORTUNITIES</b>	<ul style="list-style-type: none"> <li>-Marketing channels</li> <li>-New system management and policy</li> <li>-Institution system</li> </ul>	<ul style="list-style-type: none"> <li>-loss of forest area: deforestation and degradation</li> <li>-traditional method of agriculture</li> <li>-market policy and governance failure</li> </ul>	<b>THREATS</b>

#### 4.6 SWOT of handicraft activity

<b>STRENGTH</b>	<ul style="list-style-type: none"> <li>-Natural product</li> <li>-original product from traditional knowledge</li> </ul>	<ul style="list-style-type: none"> <li>-level of education, skills, knowledge</li> <li>-lack of market channels</li> <li>-respect of quality, norms of market</li> <li>-lack of members to achieve order</li> </ul>	<b>WEAKNESSE</b>
<b>OPPRTUNITIES</b>	<ul style="list-style-type: none"> <li>-Institutional systems</li> <li>-Business opportunities: trade show like FIER MADA, Tourism Fair, FIM</li> <li>-Participate in regional showcase of Alaotra Mangoro</li> </ul>	<ul style="list-style-type: none"> <li>-Difficulty to find raw materials due deforestation and degradation</li> <li>-information asymmetric</li> <li>-transportation cost</li> </ul>	<b>THREATS</b>

### SECTION 5 ISSUES OF INVESTING

Previously, we have debated local development linkage using the role of space, the value of conservation approach using tourism method, role of community to manage Local Economic Development, using various trend of participatory approach, the capability approach as power of economic development, and the different SWOT matrix to show different issues of economic sector, and advantages of key activities.

This section explore issues on way of investing in green forest sector, who is the leader and the followers using the concept of leadership and the socially responsible investment, the discussions around investment issues and case study. A subsection explores the marketing chain of medicinal plant, handicraft and banana that are an example of marketing forces after ecotourism and handicraft packages.

Findings from data collection, field research and observation study and SWOT matrix have permitted various fact that Vohimana Community Forestry suffer from the lacks, barrier to Local Economic Development. Lack of human, social, natural, cultural, product and physical capital as cited below:

- Lack of human capital:
  - ✓ People have low level of literacy, education is finished at primary school;
  - ✓ Traditional knowledge are restrictive to spread, more conservationist and scared for foreigners;
  - ✓ Community suffer for low level of skills and knowhow;

- ✓ Lack of health services, health care services, sometimes travel more than 7km to find medicine;
- ✓ Lack of labor skills to have a better management.
- Lack of social capital:
  - ✓ Lack of trust between actors;
  - ✓ Lack of behavior standards;
  - ✓ Lack of social network: target beneficiaries are elitist;
  - ✓ Lack of mutual interest;
  - ✓ Lack of leadership;
  - ✓ Lack of kin and ethnic networks;
  - ✓ Lack of social organization.
- Lack of product capital:
  - ✓ Lack of financial institutions: credit loan and saving banks;
  - ✓ Lack of agriculture implements;
  - ✓ Lack of infrastructure: education for secondary and third school, health care services, agricultural and farming storage systems, ecotourism accommodation, training center, power infrastructure, system of market center (stalled market), lack of information technology for information sharing;
  - ✓ Lack of household assets.
- Lack of natural capital:
  - ✓ Water resources;
  - ✓ Forest loss;
  - ✓ Soil fertility;
  - ✓ Land availability;
  - ✓ Grazing resources.

This entire gap affects human well-being. In addition, it gives better understanding of community forestry living around protected area in Madagascar. And the facts observed on previous section stressed other parameters that it should take into consideration.

These combined problems affect issues of investing, where in case of Vohimana Community forestry; investment can be defined as every kind of asset in particular: claims to money used to create economic value or claims to any performance having an economic value, intellectual property rights, patents, utility model patents, industrial designs, trademarks, trade names, business

secrets and technical processes. Traditional knowledge is a kind of intellectual property rights; handicraft design, traditional medicinal treatment needs to be protected. Forest value can be an economic value to generate activities. Forest<sup>69</sup> can be forces to boost green economy, provide greater opportunities for innovative solution to sustain forest. It is also a source of livelihood, natural insurance, employment and health insurance. At local level forest provide timber, medicines, firewood; at regional level, water regulation, soil fertility and air quality. At global level, it provides economic development, biodiversity and climate regulation. At local level also, forest provide natural habitat for biodiversity richness, pharmaceutical raw materials and carbon sequestration to climate change.

This value need to be protected, need systems funding to define investment<sup>70</sup> projects.

This community need loud investment program on:

- Conservation components: reforestation, planted forest, agroforestry, program PES (Payment for Ecosystem Services);
- Skills: education for children, education for adult (andragogy) to train business, professional training, organization management and quality management;
- Institution: to regulate local market, to enforce rules, to manage traditional knowledge, harmonization of local participation and information sharing process;
- Infrastructure: ecotourism accommodation, market center and stalled market, agricultural infrastructure, storage system for agrifood product, power supply.
- To be effective, forest governance, hierarchy of Criteria and Indicators standards, participatory involvement (grassroots level, the poor, young and gender), transparent and accessible databases, accountability, mechanisms, fiscal instruments, positive externalities from PES and technical support are accompanying measures.

## **5.1 The Concept of Corporate Social Responsibility as a way of investing in community development approach**

The Corporate Social Responsibility<sup>71</sup> (CSR) emphasizes the relation between social relations and business activities to the interest of society that the outcomes affect actors and individuals or players inside their environment. It is like a business target which involved communities. Firm

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69 Richard Munang et al., 2011, Sustaining in forest, investing in our common future; UNEP Policy Series, Ecosystem Management Issue 5, p18 <http://www.unep.org/>

70 Maryanne Grieg-Gran and Steve Bass, 2011, Towards a Green Economy: a pathways to sustainable development and poverty reduction, Part I Chapter 4: Forests: Investing in Natural Capital; UNEP, p35, <http://www.unep.org/>

71 Maimunah Ismail, 2009, Corporate Social Responsibility and its role in Community Development :An International Perspective; Journal of International Research, 2 :9, 199-209 [www.sosyalarastirmalar.com/cilt2/sayi9pdf/ismail\\_maimunah.pdf](http://www.sosyalarastirmalar.com/cilt2/sayi9pdf/ismail_maimunah.pdf)

activities can be shown on partnership with local communities, socially sensitive investment, and developing relationships with employers, customer and families, activities touched environmental conservation and sustainability. As investment in local community is a long term processes, it can provide availability of resources for livelihood. As human being, decision of investing can be influenced by human behavior, a reasoned action affect intention and perception to subjective norms, where people are prudent to make decision according to cost-benefit analysis, and intention with moral norms can predict personal attitudes to behavior investment. Moral norms affect intention, attitude, subjective norms and perception to predict socially responsible<sup>72</sup> investor's decision making behavior. In addition, CSR can be efficient when driving by good leader. The concept of leadership<sup>73</sup> is at the core of effective management. Integrative participation and local projects have encountered malfunction of management systems, the choice of bad decision may generates local conflict, breaking rules and loss of trust. Management process encountered various local problem observing on recruitment process, human resource management or sharing information system. A good manager should be a good leader, fully respected by followers. Each success depends on a good relational contact between the leader and its follower. To be effective, in such cases, a good leader must have skills that can contribute to the human well-being of the community. And the followers hold an important role in an effective leadership, which are good communication and collaboration leaders and members (risk of poor leadership), decision-making and role model to the entire community, and followers have responsibility to choose a good leader, have tools and the willingness to change.

In fact, Corporate Social Responsibility engage social performance, involvement of political theories, social institution to generates social power and public responsibilities under law and public policy process.

Taking the model of the «*Green Awassa Ethiopia*<sup>74</sup>», their process of starting activity is cited follows:

First step: a group of student and experts organized a workshop with local stakeholders and choose 40 participants;

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72 Ainul Azreen Adam, Elvia R. Shauki, 2014, Socially responsible investment in Malaysia : behavioral framework in evaluating investors' decision making process ; Journal of Cleaner Production, 80,pp224-240, Elsevier, <http://dx.doi.org/10.1016/j.jclepro.2014.05.075>

73 Andrew Beer and Terry Clower, 2014, Mobilizing leadership in cities and regions ; Journal of Regional Studies, Regional Science, 1 :1,5-20 ; Taylor and Francis <http://dx.doi.org/10.1080/21681376.2013.869428>

74 Travis W. Reynolds, Joshua Farley and Candice Huber, 2010, Investing in Human and Natural Capital: an Alternative Paradigm for Sustainable Development in Awassa Ethiopia ; Elsevier, Ecological Economics 69, pp 2140-2150 [http://www.uvm.edu/giee/pubpdfs/Reynolds\\_2010\\_Ecological\\_Economics.pdf](http://www.uvm.edu/giee/pubpdfs/Reynolds_2010_Ecological_Economics.pdf)

Second step: the 40 participants made field visits. The objectives of this trip are identifying local problem, develop shared vision of sustainable and desirable future development project for local partners;

Third step: realization is to train participants in grant writing skills;

Fourth step: results of workshop are advocated to local stakeholder as NGO, government, academic, business sector, villagers, farmers, local regional developers, traditional leaders, women and youth.

Final Step: Proposed investment projects focused on human natural and social capital; such as reforestation program, to restore ecosystem, the target beneficiaries are the poor farmer and women. And other program on food security, public awareness and coordinating committee.

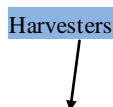
## 5.2 – MARKET OPPORTUNITY: A WAY OF INVESTING TO IMPROVE RURAL FARMERS

Market opportunity offers a target where to sell the final products, where to find final customers, lead market. These sections study the marketing chain of the second source of income after ecotourism such as market of medicinal plant, handicraft and green banana.

### 5.2.1 – Market of medicinal plant

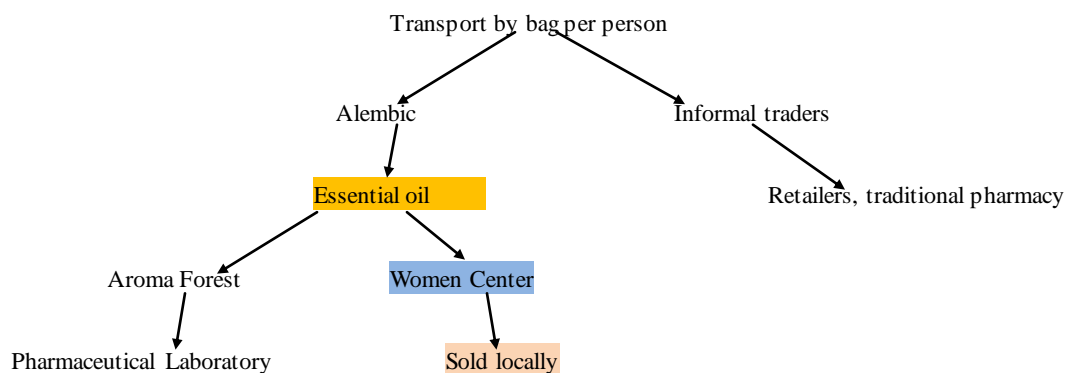
Comparing to modern medicine, it uses biochemical and formulas to perform drugs, medicinal plant uses the part body of plant to trend medicine. Actually, the use of medicinal plant is the best alternative to treat medicine at global level, at local level, stakeholders contribute to treat urgent case and linking activity with medicinal plant, usually medicinal<sup>75</sup> and aromatic plant contribute also on conservation and poverty alleviation if managed carefully. Some findings revealed that traditional medicine is the most treatment used by indigenous people in many places of Madagascar, and local people are extremely dependent on forest. To have a better understanding of “win-win” situation, it is useful to explore the value chain of medicinal plant.

**Figure 6: Marketing chain of medicinal plant at Vohimana**



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75 Wiersum et al., 2006, Chapter 2: Cultivation of medicinal plants as a tool for Biodiversity Conservation and Poverty Alleviation in the Amatola Region, South Africa; Medicinal and Aromatic Plant, Springer <http://www.springer.com/>

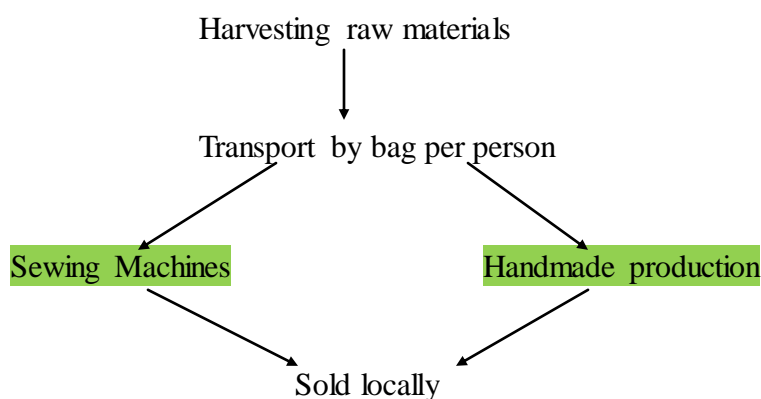


The Harvesters and retailers in women center suffer of information asymmetric and market imperfection. While semi-finished products of Essential Oil suffer from the storage systems. Storage is useful to conserve product to honor order and keep therapeutic proprieties of plant. Local market is seasonal and left to the regional channels of essential oil. Consequently, these types of stakeholders suffer from low income distribution, and do this task as complementary activity or subsistence activity. Lack of knowledge and inefficient management limit access to information, where to find buyers and sellers, just waiting order and finished it. They need capacity building to train farmers to become professional traders.

### 5.2.2 Market of handicraft

Handicraft sector is a source of income for rural.

**Figure 7: Marketing channels of handicraft**



Women center at Ambavaniasy sell products on local market where target customer are outsiders and foreigners. Unlikely, their products suffer for quality, and there is a lack of training and skills, and production processes remained traditional.

To enrich their activity, they need:

- ✚ Training program: information of marketing systems of handicraft at all levels, technical skills, support and quality management;



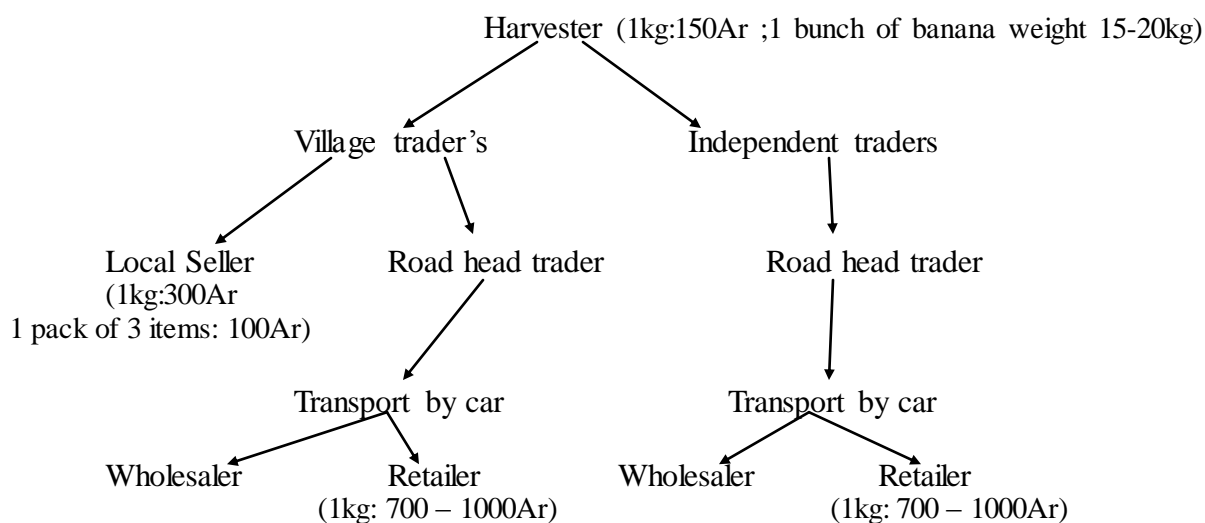
- ✚ Funds to run association;
- ✚ Market infrastructure to sell product on market center, and attract potential customer;
- ✚ Participate in a trade show: MREIF (Madagascar Rural Economic International Fair), MIF (Madagascar International Fair), Tourism fair and regional showcase.

The participation in a trade show promote both local and cultural value but also, knowhow of women villagers, it is also a way to find business partner in order to sign a type of contract farming<sup>76</sup>. This agreement is a vertical integration where local goods productions by primary producers are delivery, with time and quantity, quality, price to a known buyer under advanced contract. This agreement helps local producers to fill the gap of seasonal activity and various contract farming help producers to learn competition, reduce transaction cost and increase skills.

### 5.2.3 – Market of green banana

Banana is one of the market forces of Eastern region, and stayed benefit for the supplier for the great township.

**Figure 8: marketing channels of green banana**



The similar problem occurs on market of green banana, there are much kind of middle businessmen and the final customer support the cost. Sometimes, this sector is affected by informal traders and increases the cost-benefit analysis. Village trader suffers for lack of information (asymmetric information) and storage systems. The production systems still follow traditional marketing chain,



76 Sukhpal Singh, Understanding Practice of Contract Farming in India : A small producer perspective [http://www.ncap.res.in/contract %20farming/Resources/4.1%20SukhpalSingh.pdf](http://www.ncap.res.in/contract_%20farming/Resources/4.1%20SukhpalSingh.pdf)

and the harvester is the main loser of this business. They also need capacity building to train business channels.

### 5.3 – INTRODUCING FINANCIAL SYSTEM

Actually, results of field research shows that at the moment to realize last field trip on 2013, there are no financial institution operated in the region. Meanwhile corporate social responsible investment needs microfinance<sup>77</sup> structure, to attract supervisor and individual investors to start up economic activity at the bottom level.

Likewise, financial system<sup>78</sup> is a way to alleviate poverty. By lending or borrow money, stakeholders are faced to range of opportunities that may improve their welfare, such as education, emergencies, housing, irrigation systems, participating in trade show, or other productive infrastructure. Without external finance, poor household would not have the means to realize their economic potential or feasible investment project such as advertising campaign, ecotourism leisure and accommodation, medicinal plant, handicraft and fruit sector. Finance is a tool for wealth creation and direct poverty reduction. Rural poverty reduction requires investment in all aspects of rural development, to create the condition and capacity needed to improve farm and non-farm income and assets, including financial services and market development, human capacity and policy development.

To operate financial services, funding is provided by some stakeholders:

- + Local stakeholders to collect fund for loan credit bank;
- + Donors;
- + Private investors or social investors as NGO or private company;
- + Funding collected from community initiative.

It meets success if there is a whole involvement both rich and poor to recognize development interest.

Finally, private investment<sup>79</sup> is a source of sustainable economic growth. As advocated in developing countries, well developed financial system provides more opportunities to invest and enables more effective diversion of savings into investment. As shown in Sub-Saharan Africa, it was found that credit to private sector had relationship with private investment.

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77,79 Lina Sineviciene, Vilma Deltuvaite, 2014, Testing relationship between Private Investment and Financial System's Development: the Case of the EU Countries; Journal of Procedia, Economics and Finance, 14, 377-386; Elsevier  
[http://dx.doi.org/10.1016/S2212-5671\(14\)00726-6](http://dx.doi.org/10.1016/S2212-5671(14)00726-6)

78 FAO, Rural finance and poverty reduction; Rural finance learning center, CABFIN Partnership  
<http://www.ruralfinance.org/>

#### 5.4 – INFORMATION SHARING: FINDING THE WAY TO START LOCAL ACTIVITY

The process of information sharing in Vohimana is not uniform. Many villagers complain about news, information managers. This paragraph is at the end of investment issues because, when developers want starting any form of local program, outsiders should better understand the information process at local area.

At Vohimana, sharing information use the system of posting a letter of invitation onto representatives of 11 villages, then they share to the follower villagers. These processes meet some problems where some population did not receive the news and do not attend a meeting or participate in an activity. This bad management may due to the lack of information technology, spend time for the case of distant villages (Andasifahadimy, Anevoka, An'ala, Amalonabe, Soamiadana, etc.). Consequently, this process may be dramatic when participant in the workshop may not representatives of all community members.

Meanwhile, at the starting point of an integrated project, sharing information<sup>80</sup> among communities should follow these steps:

**First:** Identify the local correspondents which have relationship with some people like Tangalamena or Chief of Fokontany (the key person);

**Second:** Doing a meeting with the key persons and discuss about local processes to create an organization or begin a project;

**Third:** invite communities about interests and intention. Noted that this meeting should be organized in other place for example at Moramanga, and the key person must be present at this meeting and will make decision together;

**Fourth:** After this discussion, the first program is identified, and the Organization Committee (OC) will schedule a meeting for each 11 villager. This meeting should be held at 3 or 4 pm after working hours and when OC share the important information, it would be better that there is representing of Regional Authority to convince communities about the importance of the program;

**Fifth:** After, the local people can carry out the proposals with the developers.

After the project can goes on because the presence of authority convince people about the value of the program.

Respect of this procedure have better advantages such as:

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80 This process of sharing information and starting activity was advised by Lesabotsy, the first member of ecotourism guide (since 2001) and the Chief of Fokontany of Ambavaniasy

- Holding the first meeting at Moramanga avoid the participatory of wrong members which have bad intention to disturb other persons to take part in the program;
- The presence of the authority gives respect to the developer of the program.

## SECTION 6 SOCIAL IMPACT

Evaluating social impact show the outcomes of the investment project sets of monitoring and evaluation should be done. The theory of social impact<sup>81</sup> monitoring help to understand environmental impact and management plan in order to promote social sustainability in a particular region after a constructive infrastructure project which affect landscape of one region. This method helps management to improve the next stage of on-going project. Literature findings stress the importance of social impact investing<sup>82</sup>, to reveal the value of capital stock which may produce social, environmental and financial returns, provide a useful strategy to mobilize private and public capital for social purposes and provide tools for investment and finance and evaluate process of community development. Measuring impact investing have used by developing countries to assess if program meet the first defined objective.

Moreover, social impact assessment promote the process of social impact management and it used to be attached an environmental impact assessment. With planned interventions, research and practice. It can be and independent process that contributes to development.

Practically, doing social impact assessment<sup>83</sup> at local level requires following sets of hierarchical processes:

- ✓ Free Prior Inform Consent (PIC) in order to respect human rights of indigenous people;
- ✓ Define social performance standard: it consist of values, managing advantages investors are aware for environmental matters while doing projects and supply chain are developed on construction in favor of local communities, developers should establish management plan in order to support local community to build a natural trust;

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81 Nigel Rossouw and Shakti Malan, 2007, The importance of theory in shaping social impact monitoring :lessons from Berg River Dam, South Africa ; Journal of Impact Assessment and Project Appraisal, 25 :4, pp291-299 ; <http://dx.doi.org/10.3152/146155107X246305>

82 Edward T.Jackson, 2013, Evaluating social impact bonds : questions, challenges, innovations and possibilities in measuring outcomes in impact investing ; Journal of Community Development, 44 :5, 608-616, Taylor and Francis <http://dx.doi.org/10.1080/15575330.2013.854258>

83 Ana Maria Esteves et al., M.2012, Social impact assessment : the state of the art; Journal of Impact Assessment and Project Appraisal, 30:1, pp34-42; Taylor and Francis <http://dx.doi.org/10.1080/14615517.2012.660356>

- ✓ Involve governance resource extraction projects: it concern social and institutional management to achieve projects, it encourages poverty alleviation, effective social and environmental policies;
- ✓ Local requirements: indigenous people are invited to participate directly in the supply chain project competitiveness and sustainability entirely depends on the community's willingness to take opportunities that are offered by the projects.

Everywhere in Madagascar, due to the lack of adaptive institution to maintain norm and enforce rules, human rights of indigenous are threaten by outsiders and foreign scientists to take advantage of medicinal plant. That is the reason why Elders and Traditional Healers are reticent, selfish to not share their knowledge to the next generation of student researchers, because impact of investing for example, local pharmaceutical laboratory have not meet outcomes to the traditional practitioners of medicine.

## **CONCLUSION**

This study provide an overview of key conclusions from the study beginning with summary of the research, followed by recommendation for best practices to be used as a tool when working with communities to propose a new stage plan, then some critics concerns methodology, after that the linkage of other research and study and closed with issues of future perspective.

Findings regarding results why local management process was not successful and meets negative effects among population.

## **SUMMARY OF THE RESEARCH**

Investment feasibility and opportunity of Vohimana Community Forestry study the tangible impact of investment tools and infrastructure inside a specified area. Study opportunity tools enable local communities to organize themselves and to transform rural farmers into professional traders. Literature findings demonstrated that numerous local development plan meet success around the world, and in case of Community Forestry, as well literature, they meet success in order to involve neighborhood communities to be part in decision-making and as a work forces in a pilot project. The strategies advanced both academic and conservation agencies were the participatory approach whatever is the form to conduct the study. In addition, package investment are needed to implement in human, natural, social and physical capital, followed by monitoring and valuation, institutional and financial systems need to be implemented.

Data collection have revealed that information, decision-making, management process are very important to wait positive results for working with communities as well as transparency, education, health care services are an adjacent reform to motivate local practitioners. Despite of indigenous are extremely dependent on forest resources, result of Matrix SWOT and marketing channels shown malfunction and facts why rural stay in level of poverty.

Consequently, direct studies and local context can resolve to improve management process.

## **RECOMMENDATION STAGES TO WORK WITH COMMUNITIES: BEST PRACTICES**

There is evidence to support hypothesis that most of participants of local association makes complementary activity to satisfy their daily needs. Meanwhile, when starting, continuing or introducing a new management system, developers must follow the process of information as stated below, and using method as expert-assisted approach:

1. Inform local authority that there are new project to involve local communities;
2. Inform Elders and Tangalamena about this project;

3. Identify local correspondents to collaborate with outsiders to start a project. These people must be Chief of Fokontany, Tangalamena and active Elders;
4. Inform all members of communities that the first workshop is organized, and the place should be at Moramanga to avoid inviting wrong persons. When inviting people, they should use a “megaphone and bell”, distribute a sensitized T-shirt with programs during the workshop and radio with battery to share the attending of the workshop. And this campaign process should be done one month before the meeting, and the organizer prepare a little compensation for transportation cost and food for participants when fill the time sheet. During this first meet, civil society, local and regional authority; leaders of association, collaborative managers and local correspondents must be present with organizers and members of communities to identify prior project to the purpose of local economic development;
5. After the workshop, the Team Committee organize a second workshop at Ambavaniasy to report the first meeting and organize a visit for each interest villages utilizing the same inviting process. This workshop must be hold at 3 or 4 pm (after working time). The second meeting identifies the key persons for each villagers and visit must be realized with members of regional authority and members of ministry department, to have first impression among villagers about the importance of the program. This visit is also an occasion to hire some stakeholders to do the first part of the task.

To accompany this program need funding's from donators and at the time were project receive authorization, package of investment are also needed to start as power supply, institution of market information, institution to enforce rules, education center for adults, infrastructure education for secondary and college school, health care services, financial institution, market stalled and storage systems.

Institution of marketing information center reveals the marketing channels of sector forces. They use communication support as cartoon posters, leaflets and booklet to teach locals of value and supply chain of handicraft activity, as illustration, where to find buyers, where are trade shows or showcase and teach process of contract farming, advertising and little background of business. As using expert-initiated approach at bottom up, some members of this institution are a master's student from universities, Tangalamena and representing of each villagers and local association.

Institution to enforce rules is the Management Committee to supervise and survey everyone to break rules.

Education center to teach adults have both doing information processes using the proposed method, and teach communities about forest value, environmental value, technical training, and literacy training, all of the topic touching community interest.

Financial institution is an organism to loan and borrow little amount of credit and stalled and storage market is an infrastructure project to stock perishable goods and a center to sell local products.

At the same time, other pilot project are follow as afforestation and reforestation program, ecotourism activity, women center and so on. Every month, report is made with each leader to identify problems and propose solution, outsiders also made unexpected visit to verify that management process, doing monitoring and valuation for impact.

In case of local conflict, Tangalamena, Chief of Fokontany, Local Authority and Elders, Leaders of association and outsiders should statute the case.

## **CRITICS OF THE RESEARCH METHOD**

Establishing strong conservation policy must respect free Prior Informed Consent at each stage of process. Successes and failures of this policy and the application of this model for other research area meet difficulties in case of isolated region, area threatened by wood traffic, mining and elite corruption<sup>84</sup>. This constraint should take into consideration to apply in other regions.

During the field trip, it was difficult to collect information about income, informal activity or distant villages due to the rainy weather, working time unavailability. Unlikely, annual data collection helps to improve management plan and correct lack of system, academic advisers help to identify innovative approach and mitigate challenges.

Estimation of some results was provided to scope a vision for expected outcomes and threats to tackle issues of the research. Combined method has used to alleviate the diseases of long poverty and comparisons are made to enhance the utilization of the research and theoretical level of theory.

The interpretation of findings has been influenced by the researchers own beliefs, perceptions and experiences. Become a native during field visit enrich and strengthen background that a researcher have never met this lifestyle of indigenous in opposite of great township as Toamasina and Antananarivo.

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84 Hajaniaina Rakotomanana et al., 2013, Chapter 5 : Conservation Challenges for Madagascar in the next decade; Conservation Biology: Voices from the Tropics, 1<sup>st</sup> Edition, John Wiley and Sons  
<http://www.wiley.com/>



## **FUTURE RESEARCH**

This study suggests several areas of research that should be examined in the future. Study the poor is a complex area but provides a potential case to understand poverty, a way to reduce slash and burn practice and advance successful promotion of long term and sustainable natural resources management process.

A study on the role of leader and leadership in conservation program is among the best initiatives as Betsimisaraka structure; always respect Elders and Tangalamena in their social organization since the ancient time. From both this research and literature, it is clear that conservation meet success, when communities are involved and identified projects have to produce positive externalities and outcomes to compensate their daily needs and preserve ecosystem area.

In conclusion, Investment opportunity and feasibility of Vohimana Community Forestry enable locals to become a professional traders and if each actors follow principles and prerequisites, the recommendation advice may meet success not only for Vohimana, but also for the case of Forest Communities who have willingness to have a better life, without imposing negative effects on conservation for now and the future generation will meet success when carry out the initiatives.

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## ANNEX

### List of Decrees and Laws:

- 13 Environment Charter and Reforms, Decree of 90-033 of 21 November 1990, Ministry of Environment, Ecology, Sea and Forest
- 15 Forest System Logging law, Law 97-017 of 16 September 1998, Ministry of Environment, Ecology, Sea and Forest
- 17 FAM (Forest Agreement Management, French Word, Gestion Contractualisée des Forêts,), Ministry of Environment Ecology, Sea and Forest Decree of 2001-122 of 4 February 2001,
- 13, 14 GELOSE law (French Word : Gestion Locale Sécurisée or Secured Local Management), Law 95-025 of 30 September 1996, Ministry of Environment, Ecology, Sea and Forest
- 19 Investment Law, Decree n° 2007-521 of 11 June 2007, EDBM (Economic Development Board of Madagascar)
- 12 MECIE Decree (French Word, Mise En Comptabilité des Investissements à l'Environnement or Environmental Accountability for Investments), Decree of 99-954 of 15 December 1999, Ministry of Environment, Ecology, Sea and Forest
- 16 Protected Areas Code, Law 2001-005 of 11 February 2003, Ministry of Environment, Ecology, Sea and Forest

### TYPE OF SCHEDULED MEETING OF INTERVIEW AND FOCUS GROUP BETWEEN RESEARCH GROUP STUDENTS

Vohimana forest research student group on the base of the thesis of Convention of Biological Diversity and Nagoya Protocol

This document is an overview of schedule research days at this local place

**2013-03-13**, Wednesday Afternoon, 7 pm

Briefing: To prepare the first methodological approach of indigenous people lived inside Vohimana including the first approach to key actors like Tangalamena, Head of village, Traditional Practical Medicine, Chief of Fokontany, Members of Association, President of Association,

**2013-03-14**, Thursday Morning,

7h00 Briefing with group, Vohimana (Relais du Naturaliste): discussing about framework of the research thesis:

How to organize sharing information of community, the potential of the utilization of local biological researches and local knowledge associated of their uses.

The objective of these activities will be to allow communities to be informed and take decision for their participation and involvement in all these processes of conservation and utilization of biological researches including sense allows and medicinal plants and others.

7h30 am, Vohimana (Relais du Naturaliste) Interview with Régis, Tangalamena of Sandrasoa Village (Interview between students and Régis in Malagasy language)

3h pm, Thursday Afternoon,



Translate and report of Régis interview, Ambavaniasy

**2013-03-15, Friday**

7h30 am, Vohimana (Relais du Naturaliste), Meeting with Régis, to ask about specific question (Second Interview between Régis, Pr Bozzi and Students, Malagasy and English language)

9h23 am, Vohimana (Relais du Naturaliste), Interview with Bernard Maraina, Responsible of Researcher's Village

10h30 am,

Report with Pr Bozzi

Defining plan activities to write examples, designing plan activities, implement plan activities.

4h40 pm, Interview with Ramaroson Thomas, Chief of Village at Vohimana, member of the association called MERCIE Vohimana and Nightguard of Relais du Naturaliste

6h10 pm, Focus group with Pr Bozzi,

Report of Thomas speech, planning of question for tomorrow

**2013-03-16, Saturday**

7h30 am, Vohimana (Relais du Naturaliste), Briefing of how to interview traditional practical of medicine inside and around Vohimana, establish a list of key actors that can be interviewed

12h40, Focus Group at Ambavaniasy

3h pm, Interview of Boto Michel, Traditional Practical Medicine at Ambatosenegaly

8h40 pm, Briefing of Ranja about reporting the saying of Boto Michel (Vohimana, Relais du Naturaliste),

**2013-03-17, Sunday**

6h30 am, recreational day, trekking at the primary forest, circuit Babakoto (4km, 6hours), pictures and swimming

**2013-03-18, Monday**

9h am, Interview with the President of Vohimana Salama, Rakotomamelona at Ambavaniasy

11h10 am, Research group meeting, report of Rakotomamelona saying to Pr Bozzi

3h pm, Interview with Lesabotsy, President of Fokontany at Ambavaniasy

**2013-03-19, Tuesday**

Briefing of Research group in Vohimana, to finalize and to standardize the outcomes of research

**2013-03-20, Wednesday,**

Research Focus Group, Hotel 3 Metis, Article in relation of research (Biodiversity and Health)

**Report of the Workshop organized by MATE (Man and the Environment), OMAPI, UNESCO, Ministry of Health and Ministry of Culture, during the days of 20 and 21 June 2013 at Vohimana.**

The participants of this workshop are members from different association and organizations, experts, students, worker for national institution, key actors of local community, These participants are one member of ANTM (National Association of Traditional healer of Medicine) (General Secretary), an employee of Ministry of Culture, an employee of Ministry of Health, SPMT (Pharmacopoeia Services and Traditional Medicine), 2 members of OMAPI, 1 member of OMDA, UNESCO, Unité Métisse Association at Réunion Island which represent NGO MATE at this place, 2HY Association, a representant from health district of Moramanga, 4 people from Abanja ( 2 Traditional Doctors and 2 women specialized in Malagasy craft), designers, MADACRAFT, key actors of local people, and students from Ankatso, Economy Department.

The day of 20 June 2013 began, for about 11 hour; we're going to visit the House of Women. The speaker was Mr Faly (Regional Manager of MATE at Vohimana); he was presenting the vohimana women's craft, traditional Betsimisaraka clothes, bag, hat, jams, the mixture of fashion and traditional clothes, and a new creation. During this visit we saw the specific utilization of rum while conserving jams in the food process in rural place, as the Doctor and Misses Clarisse said "rum kill insects and parasites and preserve jams for 2 years for example, in the jam of pineapple, there is a rum, vanilla sugar and pineapple. And after, we saw the production of traditional clothes (2 methods, the old and the new), using sewing machine, new version and old version.

After lunch, we began the workshop, that the presenters are the SG of ANTM, UNESCO, SPMT and Patrimony Department of Ministry of Culture. The Auditors are other people and more than 20 people from Key actors of Vohimana. The discussion is an outline of the topic: "How to protect traditional knowledge and intellectual proprietorship".

During this discussion, participants have trying to define the origin of traditional knowledge, how to become a healer, the necessity and value of traditional medicine, traditional knowledge, and the access and benefits sharing of Traditional Knowledge. As Eustache said, a Traditional healer from Amporaha Ambanja, his knowledge was coming during the sleep when someone need a cure, and a spirit talk to him how to recover the sick person, for example the methods of "antifanaina" to restore breaking bones. From other traditional healer like Joséphin, SG of ANTM, knowledge is sometimes a gift; sometimes it was an inheritance from a Grand Parents who was a healer too.

For about and before 4, the discussion was closed and everybody was trying to think about the topic and issues, that for the following day, participants could be divided into two groups.

When arriving at Relais du naturaliste, and in the early at night, some of participants visited the area of forest to see endemic species which can saw only at night like chameleon and frog. During this visit we met the kind of specific micro chameleon like third finger, and so on.

The next day of 21 June 2013, after breakfast, we're going to visit the production process of essential oil of longoza. For information, leaves of longoza is used to pack the traditional Malagasy rice cakes called "kobandraviny"(rice, banana and peanuts). 400 kg of longoza produce 10 ml of essential oil.

Then, the second day of workshop. We have been divided into two groups of people that the first was discussing about the process of protecting local traditional knowledge inside the access and benefits sharing and the second was discussing the topic of how to stimulate local designer to share their knowledge involving their intellectual proprietorship's.

The second groups of people were one member of 2HY association at Réunion(Guilain), 2 members of Unité Métisse(designers), 1 employee of OMAPI (RAHARIVELO Hantanirina), employee of OMDA (RAJOELINIRINA Nirina), 2 women from Ambanja, a Coordinator of this workshop (RASOLDIER Zo), an employee of UNESCO (RAZAFINDRAKOTO Miora), 2 members of MadaCraft association, a Tangalamena (Régis) and three people from local place, and Njara.

Firstly, this group was debated the topic of how to stimulate local designer to share their knowledge involving their intellectual proprietorship's. During this talk, three people have trying to define Malagasy craft, then we have talking about how to value and protect creation against counterfeiting, the Vohimana specificity (raw material, craft), and the process of protecting intellectual proprietorship's.

According to this group:"Malagasy craft is the process of natural raw material from plant, water and stones, for daily life use like spoons, plates for eating; for residential building (roof) and architecture, woodwork and carving. We can see the utilization of raw material in the Betsimisaraka ethnic group, the case of Vohimana, they use raffia for rice field clothes, the sweat didn't stick to the skin and it was cooler during work. A similar point is the case of Ambanja, the utilization of reed (telorirana in the North, zozoro in the Highland) and "moita" to perform mat."

Then we have debated that there were a various kinds of craft profession, rural craftsmen and professional craftsmen. Such as professional craftsmen are MadaCraft that their business was big. During 2 years now, they have taken on-the-job training and they ordered more than 100 standards items, they respect trend fro example craft bag for notebook.

And also, we have discussed regional specificity like Vohimana belonging to Betsimisaraka ethnic group in local level. For Madagascar, raw material using in malagasy craft are endemic in Madagascar at national level.

Secondly, we have talking about counterfeiting, the enjoyment and protection of intellectual rights. Because you know, actually, Chinese people have trying to counterfeit the zafimaniry craft.

Based upon this problem, the Malagasy Office of Intellectual Proprietorship's (OMAPI) have trying to convince and sensitize rural designer to join and becoming a member of this institution. It is interesting to value design because it emphasize Malagasy cultural reference and quality in the other hand, using natural endemic raw material, and in another hand to accommodate eccentricity for trend and technical way. To record the one item at OMAPI, the cost is 12.000 Ar, and when it is more than 5 items, the cost is 7.000 Ar. The duration of the protection is 5 years. But the main problem of this office is how to share information to rural place.

Thus, due to the lack of information, numbers of questions need more considerations such as how to identify formal and informal traditional knowledge holder? What is the national legislation inside knowledge as a value and sharing background? Access and benefit sharing of valuing resources and know-how; and to what extent we can protect local, regional and national creations.

To close this workshop, a new group of people have trying to perform an outline (sketch, Bill), a national legislation project, that it will be reported to all of head managers of the organizations which have been participated to this task

Remarks:

- During this workshop, the field of "ecotourism, forest, timber-forest, essential oil, environment education" has been discussed in little or not.
- The other debates and notes have stored in recording.
- Other questions can be asked to MATE.
- As Organizer said, they should be another workshop to think other topics.

## **TYPE OF QUESTIONNAIRE STRUCTURED INTERVIEW**

***Name of the file:***

***Date of the interview:***

***Time of the interview:***

***Place:*** Ambavaniasy

***Name of the interviewee:***

***Name of the interviewers:***

***Name of the translator:***

---

### ENGLISH VERSION

What is your name?

Are you married ?

Are you legally married ?

Do you have children?

Do all of them live here with you and your wife?

You said that you are the Tangalamena of Ambavaniasy, so can you tell us what are the real roles of a Tangalamena?

How did you become the tangalamena of Ambavaniasy?

Are people going on respecting the social and institutional structures that are established here?

So how is the relationship between you and the elders in this village in relation to your role as a tangalamena?

Have you another work/job that is not in relation to your work as a tangalamena?

Do you bring up someone else in your home?

So how many people live here?

About your children, how many daughters and how many sons do you have?

Do all of them study?

And for yourself, did you study?

So how old are you now?

Do you cultivate?

And what do you cultivate?

Do you cultivate rice too?

Does your work on the FJKM's project "Safy" provide you and your family a living?

Do you sell some of your products or do you just use them at home?

Around what quantity of bananas can you produce the year?

And for cassavas?

If you sell your bananas, how much about can it return you annually?

Do you also sell your gingers?

And around what quantity do you produce the year?

Does your production of cassava allow you to hold during the year?

In what period in the year do you cultivate all these products?

Does the land on which you work belong to you?

So how did you know that the land belonged to you?

On how much ha of earths about do you currently work?

And what kind of land is this one on which you work?

But has someone already explain to you the reason why we should not do tavy anymore?

Do you feel that protect forests is needed?

And have you ever share this feeling, this awareness about the necessity to protect forests to others?

Do you find that there are positive things brought by the NGO here?

Does help provide by the NGO arrive to compensate the fact of not practicing tavy anymore?

Does someone help you in your farmer's work?

In your family, does someone else but you have a work?

Who taught you to cultivate?

And did you already teach the techniques of culture to other persons?

And do you give formations to be a "pépiniériste" to someone?

Do you practice rearing/breeding?

Do you use medicinal plants?

And what kind of medicinal plants do you use?

If someone gets sick in your family, do you use medicinal plants to take care of him or her?

And where can we find these medicinal plants?

Have you ever go in the forest protected by the NGO to pick some medicinal plants?

And in this case, do you get an authorization to do this?

Do you share your knowledge in medicinal plants to those that surround you?

And about yourself, when a person gets sick at your home and you don't manage anymore to take care of him or her according to your own knowledge in use of medicinal plants, are you going to look for other people to ask them for help?

The NGO has created an association of persons who have traditional knowledge about the uses of medicinal plants, so do you want to join this association of traditional healers?

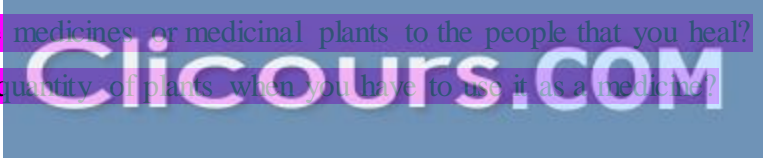
Where have you learned to use medicinal plants?

Do you take care of people?

And what does people do or offer you to thank you for what you have done for them?

Do you give some medicines or medicinal plants to the people that you heal?

Do you use a big quantity of plants when you have to use it as a medicine?



Do you make handicraft?

After all changes and destructions of the environment of these last years, is there some species of plants which disappear?

As tangalamena, do you think that people know why they should not practice the tavy anymore?

Are there some species of animals that we can't find in the villages anymore?

Does the NGO protect other perimeters or does she just limit herself to those that she already delimited?

When the NGO had delimited these perimeters to protect, did she ask for the opinion of the local community?

Do you want the NGO to continue her works here? And can you give us some suggestions?

Are there some taboos here?

And are there also things that we can't do or forests where we cannot entry?

So should a foreigner respect all these taboos?

Is there a Tangalamena per village?

*End of the interview: 12h00*

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## **TYPE OF QUESTIONNAIRE UNSTRUCTURED INTERVIEW**

August 19th, 2010, at 4:12 pm – Fanovana (Tanam-baovao)

RAHARIMALALA Sahondra – leader of the group of collectors Fanovana – 45 years old

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Structure of her family:

Members of my family (household): 11 persons:

Since when have you been done the collect?

Organization of the activity:

Why you are the leader?

What is the role of the leader?

How the organization of your work is and how many days a week do you do your work as a collector?

What do you do apart the collect?

How can you find that there is a work there?

What is the best activity among these activities?

What is your expenditure?

What are you expectation?

What kind of work do you want to do?

How much money per day do you see that it is normal for you?

What kind of knowledge do you have?

What talent do you have?

What are the raw materials used?

Is this plant sufficient if there will be more demand of craft product?

Do you produce for selling or for what?

When did you learn this activity?

Do you know the existence of the women center?

What do you know about the medicinal plant (uses of leaves)?

What kind of leaves do you know?

Who know very well how to do handicraft: man or woman?

According to you what are the value of this forest area?

What benefits provide this forest?

Who go frequently to the forest: man or woman?

What are the roles of women in the community? For example, in the ceremony

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**RAKOTOMAHARO Fenonjara Ghislain**

THESIS: « INVESTMENT FEASIBILITY AND OPPORTUNITY FOR THE CASE OF LOCAL PLACE: VOHIMANA COMMUNITY FORESTRY »

**Number of pages:** 112    **Tables:** 15    **Figures:** 8    **Examples:** 5

**Contact:** +261 33 28 424 10    e-mail: [njara\\_big@yahoo.fr](mailto:njara_big@yahoo.fr)

## **RÉSUMÉ**

Cette thèse étudie les opportunités de marché et les investissements réalisables dans le cas d'une communauté forestière de la localité de Vohimana. Des chercheurs ont pu définir l'investissement comme tout type d'actif, de contrat, de droit de propriété, de processus de production ou de droit d'auteur, ainsi que les immobilisations nécessaires à la réalisation d'un programme économique. Cependant, les populations de Vohimana sont des agriculteurs, non des commerçants, l'information se partage que d'une seule façon, des Tangalamena à d'autres et les gens ne s'impliquent pas activement dans les travaux communautaires. Afin d'explorer le sujet, nos objectifs étant de donner une formation appropriée aux adultes et de fournir des supports d'informations pour les chaînes de valeur et d'approvisionnement appropriés aux produits locaux de Vohimana, si nous suivons l'hypothèse que tout le monde devrait devenir un agent économique, accepter la participation mutuelle et les laisser s'organiser entre eux. Notre stratégie générale applique les méthodes d'approche holistique et l'entrevue de groupes de discussion. Nos résultats révèlent que la communauté a souffert du manque de services de soins de santé, d'éducation des enfants et l'activité irrégulière proposée par l'ONG l'Homme et l'Environnement. Pour atteindre cet objectif, le projet de développement local doit respecter les conseils des leaders communautaires afin que les résultats puissent jouer un rôle, pour le bien être des acteurs clés, qui à leur tour non seulement souhaitent la réussite de leur communauté de base mais aussi afin de préserver leurs richesses environnementales.

**Mots clés :** Tangalamena, activités communautaires, outils, chaîne de valeur , agent économique, participation mutuelle, approche holistique, groupe de discussion, éducation, développement local, acteurs clés, bien être, richesses environnementales.