

(Front cover)

Poverty, How to accelerate change

Experience, results and focus of an innovative
methodology from Latin America



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With:

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To Alice van Immerzeel-Wegman

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Willem H.M. van Immerzeel

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Cusco, 2006



(Back cover)

Good news!! This book is about experience of –a few- rural development projects that changed the lives of thousands of families, from extreme poverty to obtaining food security and production of surplus, having increased their assets and financial means. Thousands of families and their communities produced this improvement within about four years, without any outside incentive than prizes for the best.

We are used to open-ended projects, with high investments and very modest results. So much so that many believe that it is not even possible to generate rapid and significant change in poor communities.

The experience that illustrated this book show that the population themselves has the capacity to move on to reclaim its future. In this book we explain how: how development projects can encourage the population to obtain enormous results.

“We are interested in Raymi, not for the prizes, but because we, farmers, don’t want to stay like this always. Year after year passes by, and we want to learn more and more, for our children and to improve our animals.” Mrs. Aida Mamani de Quispe, community of Collana Norte, Aroma, La Paz, Bolivia, October 1994.

The European Union found that Raymi was the most effective capacity building system in use in their projects in Latin America. Workshop: “Identification of Supply and Demand in Training Methodologies in Projects of the European Union” in Latin America (Arica-Chile, March 27-28, 1995).

“The methodology of Contests, applied to spread knowledge horizontally, is an absolute success.” Aide Memoir: “Results of Progress Control of the Plan Meriss Inka Project in Apurimac, Peru.” GTZ, April 2002.

“The methodology for capacity development and diffusion, used by MARENASS, was Raymi”... achieving a very important success: it allowed the transition of at least 20,000 farmer families, from subsistence and food insecurity, to become producers of surpluses, enjoying food security” Executive Summary of the Pre-Terminal Evaluation Mission of the IFAD project MARENASS.

A DEXCEL Book Fund Publication

Acknowledgement

Raymi doesn't only promote, it is also a product of intense interaction. It therefore reflects the contribution of many, including project implementers, evaluators, and countless small farmers. We are indebted to them all.

We are grateful to all those who took the time to share their views and opinions with us, including many farmers and project staff.

We are grateful to Carlos Gutierrez Vasquez, who contributed in the design and evaluation of the first applications of the methodology.

We also received valuable contributions from Huub Van der Zel, Roberto Haudry de Sousy, Juan Carlos Soria, Roberto A. Quiroz, César Sotomayor, Abraham Borda, Antonieta Noli, and Teófilo Zamalloa Chalco.

We are grateful to Juan Víctor Núñez del Prado, who not only contributed to the early stages of the design of Raymi, but also read the manuscript of this book, providing corrections and helpful comments to improve clarity of concepts.

Pierre de Zutter, Hugo Wiener, and Elizabeth Zachariah have greatly contributed to this book, in many different ways. Their support was enormous and a great inspiration.

In previous publications of Raymi, Javier Cabero contributed to improving the theoretical framework of Raymi with important concepts as "knowledge management", "tacit and explicit knowledge".

Cusco, 2006

Willem van Immerzeel

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Preface

Almost twenty years of varied experience in different countries, is accumulated in this book of Willem van Immerzeel. Twenty years of trying, learning, motivating and helping, in many different contexts, of creating and disseminating of this methodology Raymi, which has demonstrated its capabilities in generating accelerated change.

In addition, during the last few years, Willem and his closest colleagues dedicated much of their efforts to a double task: first, the theoretical understanding and description of this new focus, the potentialities of which were found and tested in practice, and very different realities; second, to an ever wider dissemination, multiplying publications.

This book is the offspring of that persistent effort, nourished by grass-root experience and theoretical analysis and the tenacious drive to share, to broaden horizons, to offer others the opportunity to become catalysts of fast and profound change.

It was only in 2001 that I came to know a rural development project applying Raymi for the first time, with Willem's assistance, in Alta Verapaz, Guatemala. The difference of impacts between a conventional methodology and the one using contests, was... stunning. I met Willem again in 2003, in Chile, in the project Araucanía Tierra Viva and had the opportunity to become even better acquainted with Raymi. I also evaluated the MARENASS project in Peru, based mostly on the methodology Raymi, and it is one of the best projects I have ever seen in my many years of travelling the Latin American continent.

Therefore, I am delighted to see and recommend this publication. To have a book in English about these novel perceptions and exceptional results in development is an event in itself, and a great step forward. It should enable to find new partners, on other continents, with whom to share these lessons, and with whom we can free our imagination to continue to improve, with whom we can debate and argue, as we have done so often with Willem, always based on practical experience and tangible results, and not on wishful thinking or good intentions.

We debate and argue a lot with Willem. Because, while many of us drift on the rhythm of challenges and opportunities, he is the anchor that always brings us back to the very essence of this adventure: to be effective and efficient, to achieve quick results, faster than the environmental deterioration and the universal growth of poverty.

It is a great honour for me, that he has included me in the list of collaborators of his book and that he has selected me to write its Preface. Many are the roads... but better still when we find that our roads converge and form part of an growing current, growing stronger, driven by results and impacts.

La Paz, Bolivia, April 2006

Pierre de Zutter

The Author



Willem H.M. van Immerzeel works since 1981 in Africa, Latin America, and Asia, mostly in natural resources management and rural development. In 1987 he started designing and implementing Raymi in Peru, the experience and methodology is described in this book. He introduced and improved Raymi in numerous projects in Latin America, among them MARENASS, which he designed using the experience with this methodology. It was the first IFAD project to

introduce it. In Bangladesh he was engaged in numerous projects to increase people's participation in water management.

He is author of several publications about sustainable development, training and capacity development. He is President and co-founder of DEXCEL, an organization promoting quality in development.



Capacity development: a debt due from present to future generations

Chapter 1

Introduction

Millions are born in poverty and are therefore denied the most basic freedom, as Amartya Sen so eloquently explained ⁽¹⁾. The most abject poverty occurs in rural areas. Though governments and aid agencies committed to reducing rural poverty made vast investments, performance in terms of eradicating it, has usually fallen short of expectations. Millions of poor families have not benefited.

One of the greatest practical and intellectual challenges facing humankind is improving the anti-poverty performance of investments ⁽²⁾. This was written almost two decades ago. Poverty has grown, but so has experience.

(1.)

Good news

This book is written to share a great joy. Lessons also, of course, but in the first place we want to celebrate rural development projects which were worthwhile, rather, *priceless*, as they had such very positive impacts on the lives of so many families and communities.

Unfortunately, it is not common to visit the poorest regions of a country and find proud families, not for what projects or institutions did for them, but for what they achieved themselves, proud to have learned so much and to have improved their well-being, their resources and opportunities.

What a delight it is to see not just one but *hundreds* such communities and to find that, long after the projects and their resources were gone, people continue to improve, to invest on their own, because they obtain great results and have faith in themselves, and their future!

It is great to see that migration from rural areas is reversed; that people come back from the slums of big cities, or from growing coca in the jungle, as they found better opportunities in their own communities, thanks to all the improvements they achieved themselves...

(De Zutter, 2004)

With this book, we wish to share experience about successful efforts to overcome poverty, efficiently and effectively. Experience from projects in several countries in Latin America – different in many ways- but they shared the basics of a methodology, known as “Learning

¹ Sen, Amartya, 1999. “Development as Freedom”. Oxford University Press, Oxford.

² Robert Chambers, 1988,p.1. “Managing Canal Irrigation. Practical analysis from South Asia”. Cambridge University Press, Cambridge.

from the best”, Raymi for short. Sharing that experience –and Raymi- is our main reason to write this book.

We will describe the design and development of Raymi, illustrate its impact and explain our understanding of its theoretical basis.

Some characteristics of Raymi

Raymi means “*fiesta*”. Its main purpose is to create a favourable, *festive*, environment for rapid change. The methodology stimulates collective commitment, as well as the *development of local capacities*, technological and institutional innovations. This, in a nutshell, constitutes the strategy of Raymi.

To achieve this, Raymi uses the “cooperative competition”. *Cooperative*, because knowledge, know-how and innovations are shared and spread far and wide among families and communities. *Competition*, because the local organizations organize contests to identify and reward families and communities that manage their resources better than others.

Knowing what is needed to win will have many *improving* innovations not just applying them, with hardly any other outside intervention than prizes for contests. Consequently, the methodology is based on recognizing and stimulating creativity and the investigative and innovative potential of farmers ⁽³⁾.

We consider Raymi to be a means, an instrument, to:

- Create the conditions to generate a process of social learning and group actions;
- Promote the development of technological innovations, and spread them through mutual learning;
- Facilitate strengthening the capacity of communities to negotiate agreements and manage conflicts; and,
- Generate rapid and sustainable impacts, on a large scale, which are usually very profitable.

Another aspect of Raymi is the creation of “intercultural bridges”, which are strong *motivators* for action, strengthening cultural identity and self-esteem of the people. This is a first and essential step to strengthen people’s organizations.

Even when Raymi had its roots in the Andean cultures (*quechua* and *aymara*), its application to other cultures was possible, instructive and inspiring. It wasn’t difficult, as Raymi uses elements such as strengthening identity, motivators (economic, social and cultural) that operate here and in the remotest corners of the world, as they correspond to intrinsically human emotions.

The educational focus of Raymi is the cognitive one, which regards the person as having a knowledge base, a cognitive structure, which is shaped during his life and precedes the educational process. Consequently, the participants can, *on their own*, discover and develop

³ The value of people’s capacity is now widely recognized, see for example: Rhoades, 1988; Farrington, 1988; Chambers, 1986; Ashby, 1990.

new understanding, and capacities to improve their present performance. *All they need is motivation and relevant learning experience.*

The above implies that one only needs to find the people and organizations that have the best answers to the challenges their environment imposes on them. Finding the best is what contests are designed to do. The best get interesting prizes and social recognition. All what is needed then is to share that knowledge and know-how and provide concrete motivators to apply the innovations.

Raymi's focus is "adaptive", based on the principle that people should constantly update and adapt to the changes the environmental, institutional and socio-economic context impose on them. The quality of this adaptation and renovation is intimately linked to the quality of learning.

(2.)

Adaptive management

"We define **adaptive management** as the process by which people adjust their management strategies to cope better with change." ⁽⁴⁾

This book draws on the experience of many projects and consistent efforts to register the experiences in EU and IFAD projects and a number of NGO's. The sheer dimensions, in number of families and communities involved, in the EU and IFAD projects, make them exceptional experiences, most importantly due to their impacts.

Raymi is not a rigid methodology. Each project that uses it, made its own variations, depending on the cultural context of the population, the particulars of the geographical area, the possibilities financing agencies offer, and of course, on the ideas and creativity of the people in charge of the project. Raymi is a product of mutual learning, to which many people contributed. Consequently, we always suggest that you create your own methodology using the lessons shared in this book, as a base. We request you to share your experience with others so that they can learn from you.

We do not believe that Raymi is the only methodology or that it will save the universe. Its most important contribution, we believe, may be that it showed that there are great possibilities, as yet mostly untapped, to eradicate poverty, to attain self-sufficiency and reclaim natural resources. We are confident that Raymi can be improved further, and that better methodologies will come along which may be even more effective and efficient.

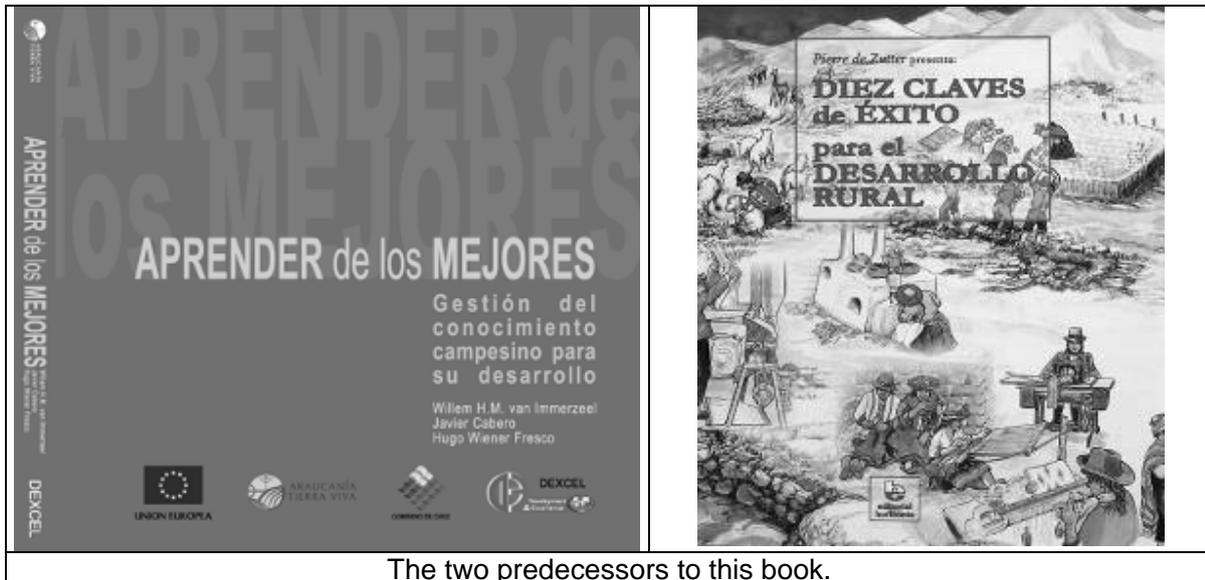
The history of this book

We were involved in the design, evaluation and backstopping of different rural development projects using Raymi and have written several publications on this subject, but always in Spanish. Several requests were received to translate at least one into English and make the experience available to a wider audience. However, instead of translating an already existing book, it was decided that it would be more interesting to write a new one, using previous publications, and including our latest insights.

⁴ Wollenberg, Edmunds and Buck.

Though several parts of the book are new, much of it is drawn from two publications ⁽⁵⁾:

- “*Ten Keys for Success in Rural Development*” ⁽⁶⁾, which reflects experience from four IFAD projects, three of which used Raymi;
- “*Learning from the best, local knowledge management for development*” ⁽⁷⁾, which is a guide to Raymi and is edited by the European Union project “Programme Araucanía Tierra Viva” in Temuco, Chile.



The two predecessors to this book.

⁵ Both publications are available on line at: www.dexcel.org.

⁶ De Zutter, 2004.

⁷ Van Immerzeel, Cabero and Wiener, 2005

(3.)

“Ten Keys for Success in Rural development”

- 1- The people, the actors, are centre stage
- 2- Relations, and space for relations
- 3- Rural life and territory
- 4- Criteria to activate actors and relations
- 5- A budget to invest in the poor
- 6- Knowledge and capabilities
- 7- Instruments to activate
- 8- Reshuffling of roles
- 9- Meeting of two worlds and cultures
- 10- A kind of project

Using people’s capacities

The IFAD projects combined a variety of methodologies, including Raymi. Two aspects stand out, which clearly show the degree to which these projects relied on local organizations:

- “Technical assistance” decided on and paid for by the communities, from budgets transferred to their bank accounts.
- The use of contests (a tool taken from Raymi), whereby the budget for prizes is also transferred to the community.

(De Zutter, 2004)

This book uses contributions and texts from different projects, NGO’s (staff, farmers, consultants), mentioning the author in each case. However, the authors of this book assume due responsibility for its contents.

What this book is NOT

To facilitate reading, let’s define what this book is and is not. It is not a guidebook of “how to” apply this or that methodology. We have tried to show how Raymi came about, growing, stumbling and flourishing into what it is today. We try to explain why it is as effective as it was found to be, as this may open new perspectives into improving development efforts.

This is not a document of one financier, or a particular project. It “feeds” on the experience of many people and projects, using their insights and documents. This book is not an evaluation of any one of the projects mentioned, though such evaluations were certainly used.

This text is not an objective vision of any of the many projects using Raymi. There were important differences, but we will not spell them out, but rather try to distil what they have in common, *what makes them tick*. By doing so, we hope to produce “food for thought” and debates about rural development and contribute to the “how to” of eradicating poverty. In this book we simply try to provide you with the gist of projects that proved to be exceptionally effective and efficient.

This book is not a case study, nor a series of case studies. It does not include a lot of details about any of those “cases”, though we have included a lot of information that will help to understand what they were all about. It is not a recipe for a rural development methodology,

but is an attempt to give an account of an ongoing learning process, that covers almost two decades.

What this book IS

Although this book is in English, it is mainly about experience from Latin America. We hope to feed the debate about eradicating poverty and development, with very positive experience from the Latin American side of the globe. This material may help the quest to arrive at better projects; “quality” projects, which have greater impact at lower costs; projects, which will improve the well-being of the population significantly and that are adapted to a wide variety of social, cultural, economic and institutional realities.

(4.)

We include many stories in this book

“Thought flows in terms of stories. Stories about events, stories about people, and stories about intentions and achievements. We learn in the form of stories.” (Frank Smith)

The stories in this book are from people directly involved: farmers, project staff and – designers.

The context of many stories is that of cultures with an oral tradition, where stories are the most important means to transmit history and the capabilities for survival.

This book contains several contributions. It provides the history of the design of Raymi, and the “discovery” of a number of concepts, crucial in development efforts. Understanding the concepts helped to improve Raymi. They may also be of use to improve other methodologies.

The book centres on developing people’s capacity, as we believe that this is the essential issue in (rural) development.

(5.)

It is about developing people’s capacities...

Capacity development is the process through which individuals and their organizations acquire and develop knowledge, know-how and skills, which translates in possessing new capacities.

This enables (groups of) people to improve their performance and unfold their potential. Raymi is a practical methodology for capacity development.

We hope to persuade the reader to look for more information, read other books, consult web pages, etc. Also, those who can may want to visit the areas written about, to talk at length with the families and staff of the projects. If so desired, such visits can be organized for you.

(6.)

Experience and concepts

MARENASS understood that their role was to “**develop capacities**”, for which it basically used the methodology “Pachamama Raymi”. The experience of MARENASS showed how families and their communities started to design and implement strategies to improve their well-being and life in general, in all its dimensions.

This experience showed that farmer communities can be effective and can increase the impact of public investments aimed at eradicating poverty, because it is possible to boost production and reclaim their resources.

Augusto Cavassa, in: De Zutter 2004, p.134 (Translated from Spanish)

How to use this book

There are many ways to explore this book. It is designed in such a way that it provides access according to everybody’s needs and available time. It is not necessary to read it from beginning to end, in sequence, nor is it necessary to read it all (you may notice some repetitions).

(7.)

Contests are an important element of Raymi.
They motivate people to innovate.

Contests and learning through comparison

The contests between families and organizations from different places allow not just contact, but also comparison, promoting competition, and inducing innovations to spread.

Let us hear **Don Francisco Kian** (Carahue, IX Region, Chile)⁸:

“It took me by surprise, because I am President of an indigenous community from over there by Copully (Catripulli Alto). Nobody wanted to be part of the team of referees and I did not offer myself, because, as a president, I can't do everything. So I wanted someone else to go, because I used to work in that area up north, long ago. I know that area. That's why I wasn't interested to be referee there, because I already know it more or less”.

“But there was no other representative. One more was needed. So I did it and I really enjoyed the experience. Yes, it is different over there. It is different. It really helped us a lot. I went with Don Checo. We went to Butaco.”

“It is different, I mean over there in the north it is different... because with half a hectare, people can live well, with a vegetable garden and all that.”

“So, **I saw over there that we know very little**, very little. We don't care for what we have, because we don't know anything else than potatoes and wheat, and nothing else. *It's like something hereditary*, and that's no good, because we also have to think about other things. We need to innovate... and that was my experience.”

“I talked with Miss Jessica Rebolledo (the Communal Coordinator of the Programme) and I told her that I would like everyone to be referee and continue to be referee from now on. Because over there I saw something that is missing over here. We have to learn from them.”

Don Francisco Kian was referee in a team and could see and “learn from the best” in an area not far from his own community. He now wants everybody to become referee so they can all learn how to overcome poverty.

The task of the Programme Araucanía Tierra Viva could not be explained better: find the best and spread their knowledge and know-how about issues, which are vital to overcome poverty.

The story of Don Francisco Kian tells us that **the contests are more about sharing than they are about competing**.

Programme Araucanía Tierra Viva, in: Van Immerzeel, Cabero & Wiener, 2005

⁸ Workshop of referees, 21-10-2004, Carahue, Chile. Programme Araucanía Tierra Viva.

You may start just by glancing through the pages. The variety of contents, styles of presentation and pictures, may grab your attention anywhere and provoke further reading. Another possibility is to check the indexes and start from there. There is a main index, but we have also included an index of the many Text Boxes in this book.

Individual readers may go through the book in any order. You may wish to start by looking at the different stories in the Text Boxes, as the main text does not go into detail.

Groups, project teams, may read the main text, or parts of it to initiate debate and be motivated by a Text Box. Or you may prefer to extract some reflections or questions from any part of the book, centred around the interests of the group, to define or improve its' focus.

Almost all material for further reading about Raymi, and projects using it, is in Spanish. In any case, you may find more on www.dexcel.org and its links to other pages. An English version of a down-to-earth guide to Raymi is under preparation.

About the style and use of words and places

Many examples presented in this book are from the Andean region (Peru, Bolivia and Chile), others from Guatemala. We often refer to realities with vast rangelands and cattle, as if the watersheds were only covered with pastures. That's because much of our experience comes from such contexts, and because it is necessary to locate the descriptions in the book in a recognizable and real territory. However, Raymi can be adapted to other contexts, without upsetting its effectiveness, as was shown, for example in micro-industry, and preventive health care in urban realities.

We hardly differentiate between any of the projects, as we want to present the experience that can be of use to all, besides, it makes reading easier. We have also not provided any comparative analysis.

Sometimes we will refer to the projects and NGO's by their (abbreviated) names, when referring to a specific one (e.g. MARENASS, PRODERM, PAC-II, Araucanía Tierra Viva, ALA 94/89, CEDAP, etc.)⁹.

We use expressions such as "projects", for any project, different from the "projects using Raymi". "Projects" may include NGO activities, projects of governments financed by IFAD, the European Union, etc. The word simply refers to an organization with the resources to accomplish a certain task within a limited time.

The Audience

This book is written for actors in rural development: directors, technical staff, institutions, municipalities, etc. but also for rural leaders, rural professionals working in technical assistance. It is intended for specialists in rural development, project designers, back stoppers, project financiers, staff of state agencies and staff of organizations of international cooperation.

⁹ See Glossary.

However, Raymi also offers rich feeding grounds for further theoretical analysis and a challenge for social research.

The layout of the book

After this introductory chapter, Chapter 2 gives a brief impression of the enormous challenges. We then present a quick outline of the impacts obtained with projects using Raymi.

Chapter 3 presents the history of the design of Raymi (3.1), which is a kind of discovery route of relevant concepts. It also provides a brief of projects using Raymi. The remaining sections of Chapter 3 are dedicated to some more concepts, relevant to Raymi and development in general. Chapter 4 defines and discusses Raymi and looks into the roles of the population, gender issues and the role of the project. Chapter 4 also points out the opportunity to use Raymi to reclaim natural resources and eradicate poverty. Chapter 5 looks into the key issues of capacity development: peoples' capacities, motivation and performance.

A number of annexes are included to provide details on information and concepts presented in the main text.

(8.)

The significance of prizes and learning

Mrs. Felipa Aguilar: "We were not only interested in the prizes, but we were interested to have fodder and feed for our animals, and to plant those fields and have better harvests. That's it."

(Community of San Nicolas, Aroma, La Paz, Bolivia).

Mrs. Aida Mamani de Quispe: "It is not for the prizes, but it is that we want to know, to teach our own family, because we, farmers, do not want to remain like this. As the years go by, we want to learn more and more, for the well being of our children, and to improve our animals."

(Community of Collana Norte, Aroma, La Paz, Bolivia).

Mrs. Elsabeta de Mamani: "It is to improve our fields, to improve our animals too. If we get a prize, we will take it, but mostly it is for our animals."

(Community of Collana Tiji, Pacajes, La Paz, Bolivia)

PAC-II, in: Van Immerzeel, Cabero 2003



The foundation of every state is the development of capacities of its people.
Diogenes

Chapter 2

The challenge and impacts obtained with Raymi

In this chapter we briefly outline the tremendous challenges the world is facing, particularly to eradicate rural poverty, which in spite of all the efforts only continues to grow. The second part of this chapter will look into the contributions of Raymi and gives an idea of the impacts obtained by projects using it. It may seem that these impacts are hardly significant if compared to the scale of the challenges; however, it provides us with examples that there are real possibilities to confront poverty and environmental degradation and beat them quickly and cost-effectively.

The last paragraph (2.3) of this chapter is about the adoption of Raymi by different projects.



2.1. The challenge

In 1996, during the World Food Summit, leaders of 186 countries solemnly promised to reduce hunger in the world, reducing its presence from among 800 million people to 400 million by 2015. Years later the numbers of hungry people have grown. Monitoring shows that by 2004 there were 840 million people suffering from hunger...

(9.)

The World Food Summit... 1996

800 million hungry people

"The Rome Declaration calls upon us to **reduce by half the number of chronically undernourished people on the Earth** by the year 2015....

If each of us gives his or her best I believe that we can meet and even exceed the target we have set for ourselves."

Rome, November, 1996



H.E. Romano Prodi, President of the Council of Ministers of the Italian Republic and Chairman of the World Food Summit.



Dr. Jacques Diouf, Director-General of FAO

"We have the possibility to do it.

We have the knowledge.

We have the resources.

And with the Rome Declaration and the Plan of Action, we've shown that we have the will."

Rome, November, 1996



Monitoring Progress Since the World Food Summit

Hunger strikes more than **840 million people** (in 2004). It saps strength and dulls intelligence. It destroys innocent lives, especially children. And by weakening a nation's workforce, hunger cripples a nation's growth.

http://www.fao.org/monitoringprogress/index_en.html

The world is engulfed by an extraordinary scientific and technological revolution, while poverty persists and grows. The hard-core and permanent poverty appears to be associated with growing environmental degradation. Poverty and desertification have become major issues in discussions –and tensions- of the international community.

Environmental degradation doesn't only affect the rural area. It has its impact on global climate, reduces the quality and production of surface water needed for cities and production of electricity; it chokes already bursting cities with eco-refugees. These farmers also find refuge in, and destroy, other fragile ecosystems, such as the jungles. Such migration erodes

traditional cultures, knowledge and know-how and affects self-confidence and destroys hopes for a better future.

Cultures of indigenous farmers in many countries in Latin America are surrounded by barriers, which are very difficult to overcome. Indigenous knowledge, values, forms of organization, social rituals and cultures, are generally despised. Farmers' innate capacities are sometimes even perceived as the very reason for their poverty. The existence of such hurdles seriously affects strategies of reproduction of indigenous societies and therefore, reproduction of their knowledge.

We are confronted with a vicious circle. Environmental degradation causes and aggravates poverty and provokes social destabilization, affecting not only the rural economy, but also self-confidence, cultural diversity, and organizational capacities. Along with it, knowledge and know-how of natural resources management is also lost. Degradation therefore affects quality of management, thus closing a vicious circle leading to more poverty and more environmental degradation.

The programmes that intervene in this dramatic situation confront two major obstacles: their resources are quite limited when compared to the magnitude of the problems, and the pace of degradation is faster than what can be achieved through their efforts in reclamation.

At the same time, it is believed that it is impossible to accelerate the processes of change in rural areas, as such processes must be slow, by definition, as it seems. According to this rather pessimistic view, rapid changes would not be sustainable. This may explain the loss of interest to finance major reclamation projects, as they appear to be unfeasible, or rather, unrealistic.

(10.)	UN Millennium Development Goals
	<p>Goal number 1 “Eradicate extreme poverty and hunger”</p> <p>“Reduce by half the number of people living on less than a dollar a day”</p> <p>“Reduce by half the proportion of people who suffer from hunger”</p>
“Keep the promise”: by 2015	
<p>Goal number 7 “Ensure environmental sustainability”</p> <p>“Integrate the principles of sustainable development into country policies and programmes”</p> <p>“Reverse the loss of environmental resources”</p> <p>“Reduce by half the proportion of people without sustainable access to safe drinking water”</p> <p>“Achieve significant improvement in lives of at least 100 million slum dwellers, by 2020”</p>	

(11.)	Can it be done?
<p>Let’s fly across the ocean...</p> <p>Impossible!!! would have been almost everyone’s verdict about a hundred years ago, when people could not even imagine a flying machine.</p> <p>One dollar a day is poverty. Let’s eradicate poverty and multiply that dollar by five, or ten, within 3 or 4 years, for tens of thousands of people, while at the same time reclaiming their severely degraded natural resources.</p> <p>Impossible!!! Maybe. As with flying across the ocean, it all depends on the instruments you know. A new and very different device could make it happen.</p>	



2.2. Contributions of Raymi

Experience with the methodology Raymi has shown that it is possible to accelerate the processes of change, in which rural families play a leading role. They contribute with their knowledge, creativity, and their capacities to experiment, learn from and teach each other.

Small NGO's and mega projects alike have shown that Raymi also holds an effective answer to the fast dwindling resource base, the decline of food production, out-migration, and social destabilization, in a word: to desertification. As the evaluation mission of MARENASS explains: Raymi "allowed the transition of at least 20,000 families, from subsistence and food insecurity, to farmer-producers of surpluses, with food security and greater fixed and financial capital." ⁽¹⁰⁾

We believe that the use of Raymi may be an important step forward in development practices, as a means to obtain rapid and massive change of forms of management of basic resources, which allow the reclamation of severally degraded areas, multiply present levels of crop yields and animal production. This creates unsurpassable opportunities to improve family incomes, and rural economy in general.

(12.)

(Post) conflict environments

Environmental degradation and extreme poverty (desertification) often create social destabilization. Raymi was designed under such conditions and is well adapted for them (different guerrilla groups were operating in Peru at the time). Raymi requires few project staff in the field. Also, Raymi proved to be useful, in post-conflict situations as it helps to restore people's lives, self-confidence and their "social fabric", as was shown extensively, for example in Ayacucho (Peru) with CEDAP and MARENASS, and in Alto Verapaz (Guatemala). ⁽¹¹⁾

The impact of projects using Raymi ⁽¹²⁾

Mini and mega projects in several countries in Latin America using Raymi have important characteristics in common:

- The projects were exceptionally successful, in the sense of producing quick (3-4 years) and lasting results, for the majority of the people involved, allowing their transition from food insecurity to food security. These farmers started producing and marketing surpluses, while increasing their fixed and financial capital. Such projects are very cost-effective, and proved to be a sound investment.

This is quite remarkable, as projects using conventional methodologies require a decade or more to achieve such improvements, if at all possible, and they are usually not cost effective.

¹⁰ IFAD, 2002.

¹¹ De Zutter, 2004 and De Zutter, 2003.

¹² Much of the text of this paragraph on impact is taken from: De Zutter, 2004

The achievements of projects using Raymi are all the more remarkable as they were achieved under extreme circumstances:

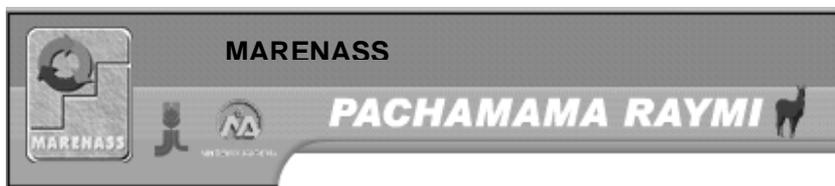
- The projects were all located in desolate areas with extreme poverty, and an advanced state of desertification (a dwindling resource base, migration, and social destabilization).
- Their intercultural setting further compounded difficulties.

Raymi illustrated that it is possible to eradicate poverty within a few years, even under such extremely difficult conditions. Eradicating poverty should therefore also be possible under less demanding ones.

In this paragraph we will present some of the most important impacts obtained by projects using Raymi, illustrating their success. The impacts that matter are the ones that affect the lives of families and communities, and the regions at large. We are not concerned about the projects' targets, though they were usually exceeded. What really matters is what happened in the lives of the local actors. We therefore provide an overview of economic and social developments in the areas where the projects were active.

Impact on the life of families

Some of the biggest projects had the most rigorous Monitoring and Evaluation of changes in the lives of families, for example, in the case of PAC-II in the Bolivian highlands and MARENASS⁽¹³⁾ in the Peruvian Andes. Below, we give a sketch of the impact found in many of the 360 communities in the project area of MARENASS and in most of the 170 communities of PAC-II.



The text boxes provide some detailed accounts of several communities and exemplify what happened in many others.

► Over half of the families attained **food security** and this number continues to grow, after the withdrawal of the projects. This was made possible by reclamation of their basic resources, through changes in management, soil conservation practices, improved irrigation techniques, introduction of alfalfa, clover, and other fodder crops, allowing the shift from unproductive sheep rearing to dairy farming, new construction and improvements of infrastructure. As a result, production of food items increased, as did people's consumption; susceptibilities to extreme weather conditions, such as droughts, were reduced.

People eat more, and enjoy a greater variety of food, of a better quality and taste. They face less risk of losing their harvest or livestock to calamities such as droughts.

¹³ See Glossary.

All investments were **entirely** based on people's own resources (mostly labour), which is typical for projects using Raymi.

	<p>(13.)</p> <p>Initial situation and impact</p> <p>The starting point is not just a situation of under-development, but of growing degradation, regression and environmental collapse. ⁽¹⁴⁾</p> <p>One could try to climb this downward moving escalator. Stopping and reverting the collapse is probably the main merit of the projects using Raymi.</p> <p>There is no possibility of development without reverting degradation, that is, without reclaiming people's resources. Consequently, no investment can be successful beyond the existence of a project, without achieving reclamation of the basic resources.</p> <p>If there is impact, as in the case of PAC-II, MARENASS, SID-Bolivia, ALA 94/89 (Guatemala), etc. it is because the degradation was stopped and reversed.</p>
<p>The community of Chacalté (Tactic, Alto Verapaz, Guatemala). Mr. Moises Garcia explains: "Now there are 60 families participating, in other words everybody is making these terraces now. Because when it rains, it takes everything, the fertility, the earth". (ALA 94/89.)</p>	
	
<p>Over 40 families built terraces in the community of Porvenir (Andahuaylas, Peru), all participants of Raymi contests. (MARENASS).</p>	

<p>(14.)</p> <p>Changing the landscape is possible only if a majority of families act jointly. That option exists through communal decision, in the context of Raymi.</p> <p>We found that the so-called soil-conservation activities have an immediate and very significant impact on productivity and the farmer's income. The contests have the virtue of breaking the inertia and of breaking it for a "critical mass", as no other encouragement used in rural development, can.</p> <p style="text-align: right;">(PAC-II, Wiener, 1994)</p>

► The **available amount of cash** increased, to cover normal (weekly, monthly) family needs. A regular additional cash income could be obtained as production increased and diversified, while recurrent costs were reduced (for example, by replacing farm chemicals with locally produced organic alternatives).

¹⁴ Wiener, 1994.

► The **value of family assets** increased:

- Soil improvements of cultivated areas (increased fertility, terraces, irrigation, production and use of organic fertilizer),
- Improvements of houses and kitchens,
- Constructions and equipment for animal husbandry and cheese production, and so on.

All such improvements contributed considerably to increase family assets.

(15.)

Just look around...

Mr. Juan José Ramos Aguinela shows us around:

"... My house improved, I have an improved stove, my bedroom and my kitchen also. My house is worth more now, and also my fields. I have fruit trees; I prepared and planted grafted trees, practised soil conservation, and made terraces. I never learned these things from another entity..."

Ocepata, MARENASS, 2003 (In: De Zutter, 2004)

► Increased **capacity to invest time** on initiatives, improvements and new undertakings, especially in the case of women. This became possible due to timesaving in irrigation, in the kitchen, in grazing animals, and sometimes, reduction of out-migration. Strong motivations came from the "winds of change" that swept through the communities. All this moved families to invest in learning new techniques, to set their houses, and resources in good order, start new productive or commercial activities, and to assume responsible roles in their groups and communities.

(16.)

Farmers invest in their future

In Milla (Aroma, La Paz, Bolivia), the *qholliri* Mr. Huayhuasi spoke about terraces: "over there, we built almost 6 hectares of terraces, in two parts -the area of Quirinquini and the area of Taratara. Each of the 52 participating families did one plot. The plots in Quirinquini were 18 by 10 meters. In Taratara they were 25 by 30 meters. It was like this hill over there: you couldn't cultivate anything; they were completely eroded. We recovered them. Those areas are "virgin". Nothing could be planted there." He remembered: "There were *pajas bravas* (a hard, unpalatable grass)". "We finished all that in February. In November we will plant potatoes there. Every year we will plant potatoes there, for four years. Then we can plant other things, barley, something else, and after that we will plant native grass".

(PAC-II, In: Wiener, 1994)

► The **capacity to invest money** increased and became evident for many families, due to results obtained with the new initiatives, their new outlook and perspectives. People used their improved incomes, revived their traditional savings in livestock and other commodities, and obtained contributions from relatives (particularly migrants sending money home). Their economic activities, life and well-being improved with the newly acquired knowledge, goods and inputs.

► **Families** united, and the ties between their members were revitalized. More time was freed for women, creating opportunities to discuss and organize for many improvements and investments, for mutual learning, and in new strategies and joint family projects. Men,

women, and children renew and reinforce their complementing roles. Even ties with distant, migrated relatives, were renewed and became stronger.

► Traditional **networks of solidarity between families** were strengthened. The traditional groups of mutual support, such as the “ayni”, became an important force to continue acquiring new capacities and know-how, even beyond the end of the project. This was achieved and stimulated by participating in the contests between families, promoted by the projects. New groups try and develop their skills to manage small funds, *their own funds*, either as communal or family ventures, or as credit.

► New **know-how and capacities** are developed to improve life of the families and their social and economic activities. The years during the project multiplied their capacities and awakened a drive to continue learning and improving, from traditional and modern knowledge. Those were years of practice and learning in the fields, in their houses, in their own language, with results that directly benefited everyone.

► **Self-esteem** of families increased. Their joy and pride about what was achieved and learned become vividly clear to visitors: where instead of begging for help, people wanted to show off their accomplishments and share their future ventures. People regained their perspective on life, and reinforced their identity.

(17.)



Life of many families changed: “Everything got better. I have terraces, alfalfa, a stable” ... “before all this, my husband had to work far away. Now just here. And we’ll all make it terraces” says Mrs. Wilma Iliz Hermoza de Rochacc (Region Andahuaylas, Peru), looking at another hillside.

(MARENASS)

Impact on the life of communities

► The communities are converted into a kind of school-workshop. What strikes the visitor, known to rural areas, is the general atmosphere of doing, learning, learning-by-doing, in which all members of the family are involved. Learning-by-doing to produce, to undertake some businesses, to improve conditions. With it, the “joy of life” returned to the communities. Previously “idle time” is now used productively in areas where the most important and recurrent political demand is the creation of jobs. These are all very intensive dynamics in the rhythm of the contests of the projects using Raymi.

(18.)

Socos, a school for all to see

An interesting case in point is Socos, especially the community of Luyanta. It is a result of the efforts of the NGO CEDAP, in Ayacucho, Peru (which has been Raymi since 1992). It attracts the attention of farmers far and wide. The communities are real demonstrations of technological innovations.

Many rural development institutions organize field trips to the communities of Socos. Visitors learn from seeing and get all kinds of information from the owners of the plots.

A rural “service industry” sprung up in different “trades”, with farmers as “teachers”. Institutions from nearby and far, hired several to help improving farms in their area. It includes preparation and use of organic fertilizer, improved stoves, small irrigation systems, selection and management of native seeds, etc.

(CEDAP, In: Portugal, Edilberto, 2003, p.39.)

► The communal organization is invigorated in its traditional roles, but also in new ones (as in Socos, where communities spontaneously became “schools” to others). In these regions, destabilized by extreme violence during the eighties and nineties, we found that communities resumed their functions in leading local affairs. Their projects have multiplied and they have created the conditions needed for a better life.

(19.)

Alternative education

Again spontaneously, Raymi showed its potential to create alternative ways to educate adults, in areas where education of the poorest is a widely recognized problem. These alternatives are inserted in the social structure from the start, are autonomous and self-sustaining due to the creativity and activities of the population.

Juan Víctor Núñez del Prado. Comments on the draft. 17-8-2005

(20.)

Impact on quality of life in the communities

...from a case study in Muñapucro...

Improved quality of daily life is one of the most spectacular results. In the first place, **people are no longer hungry**; food security has been achieved in Muñapucro (Andahuaylas, Peru¹⁵). New farm practices allow people to cultivate all year round (with irrigation, humus, compost, terraces and diversified crops). The families constructed better storage for grains, have milk all year round, instead of summer months only.

The families highly appreciate their new life and enjoy better food, richer and healthier than what they used to grow earlier with all kinds of chemicals. They now have neat houses, which are better arranged, have stoves that are no longer on the floor and don't fill the kitchen with smoke. These stoves need less firewood, leaving more time for other things. The kitchens now have shelves and space to store foodstuffs, kitchen utensils and tools.

The economy changed. Several expenses dropped: certain vegetables are no longer bought from the weekly market, neither are farm chemicals, as they are no longer used...

At the same time, incomes have increased greatly, especially daily and weekly ones: **milk production has multiplied by four or five times**, so more cheese is produced and sold; Muñapucro has only a small cultivable area, but it is now selling fodder to other communities; the school teachers' room rent has been increased, as houses are so much better now...

All this allows for investing in comforts, in education, and in further productivity increase. The community has changed its main occupation, from agriculture to livestock. Agriculture improved and people now have **organic horticulture** on terraces, cultivate fodder and have multiplied their livestock production.

In fact, a rearrangement is taking place of a series of economic activities around new possibilities, related to better management practices resulting in reclaimed resources.

(MARENASS, In: De Zutter, 1994,p.34)

¹⁵ In: De Zutter, 2004,p.28, 29.

(21.)

Better houses too...



...Stoves are no longer on the floor and don't fill the kitchen with smoke, they need less firewood, leaving the women with more time for other things. There are shelves and space to keep foodstuffs, kitchen utensils and tools.

Participant of a contest sponsored by MASAL in Cusco, community of Anilmayo, Quiquijana
Picture: Cipriano Arando

Contests about "which family is best" have people improving their homes. Many participants build latrines.

Contest sponsored by MASAL in Abancay, Community of Llanucancho
Picture: Cipriano Arando

► The concern and capacity for sustainable management of communal areas was revived. The communities regulate, reserve and reclaim areas for common use, such as severely degraded communal rangelands, where improvements are introduced in rotational grazing, infiltration ditches, harvesting and planting better quality grasses and trees.



The reserve of Vilaque, after several years of recovery. It is respected, as it has become a sanctuary for Pachamama, Mother Earth.

(22.)

Communities retake their responsibilities...

Mr. Epifanio Corani Marca, of the community of Ayzacollo (Aroma, La Paz, Bolivia) tells about his experience planting native grass: "Now they are drying because it is so cold, there is no water, no irrigation. But it doesn't go away, because it produces seeds and we harvest that." He explains: "Then we have to plant it, but this year we have harvested the seeds. So next year, we plant it with the rains"

The community of Vilaque created a very large area as their nature reserve. It is the most severely degraded area of the community. Mr. Germán Luna Secretary General of the community and *qholliri* tells: "protection of this area has been of great use to us. It has helped us during the dry season. We have seen more advantages, the grass and straw grows."

Impact on wildlife



Recovery of grass cover favours wild life. In December 2004, vicuñas were sighted 10 years after it became a reserve. Nobody had ever seen them in Vilaque. (The picture of this vicuña was taken elsewhere.)

Mr. Germán Luna Fernández, from the same community Vilaque explains that sheep and cows do not enter this protected area since about two years ago, and that will be protected for another five years or more. "Some parts of it we just left. We planted native grasses in other parts. We harvested seed and planted it. Next year we will see the results. Seeing it we are thinking of making more nature reserves."

Families are inspired by their community and vice versa. Mr. Luna Marca tells that he has two areas of 10 hectares each. "It is an experiment that we are doing". Mr. Molla says: "now we are protecting the grassland, we have marked the different pastures. It is already separated. I have learned this and I am also telling my community".

(PAC-II, adapted from Wiener, 1994)

► The relations and negotiations between communities, municipalities and other institutions improved. The EU-sponsored programme Araucanía Tierra Viva works through municipalities. Even though MARENASS, PAC-II and most others don't, they generally find that relations between communities and other relevant institutions improve. The newly acquired dynamism makes the communities interesting partners for many organizations, both private and public. The communities no longer apply for aid and accept whatever comes their way; instead, they negotiate and obtain what they require. Even better, the communities are starting to push forward their own proposals.

An interesting development, which was first noted in Cusco (PRODERM), and later in Bolivia (PAC-II), is the creation of leaders, formed when organizing contests, orienting families in technical matters, etc. These leaders start to influence the municipal governments. Quite a few are candidates in local elections.

(23.)

A new kind of leaders

The emergence of rural leadership capable of identifying and creatively solving local social problems is a qualitative step forward, which is of singular importance for the future, especially where leadership was always based on making all sorts of demands and claims.

Juan Víctor Núñez del Prado. Comments on the draft. 17-8-2005

► The communities start to cooperate with each other. The contests between communities improve contacts and exchange about possible alternatives to develop. More and more, communities team up to improve their position, for example to negotiate with institutions. The Programme Araucanía Tierra Viva stimulates such collaboration explicitly, as many local organizations are weak and small.

Impact on the environment and wildlife

► Degradation of resources is probably the most serious threat to biodiversity. Erosion, the last step on the ladder of environmental degradation, is rampant in the Andes. Many species are now on the endangered list. Reclamation reverses this dangerous threat.

(24.)

People's capacities and the environment

The essential difference between the pictures on the left and on the right **is the capacity of people** managing their resources: either destroying (left) or recovering them (right).

Severe degradation. Poverty increases and people flee the area. The soil and soil cover sustain less and less plant and animal life. The number of species decreases. Erosion and sedimentation is everywhere. Production of water from such a watershed is severely affected, both in quantity and quality.

Reclamation. Poverty is eradicated; migrants return. The soil and soil cover support ever more plant and animal life. The number of species increases.

Erosion and sedimentation is reduced to a minimum
Watersheds with improved soil cover produce water of good quality and more constant quantity.

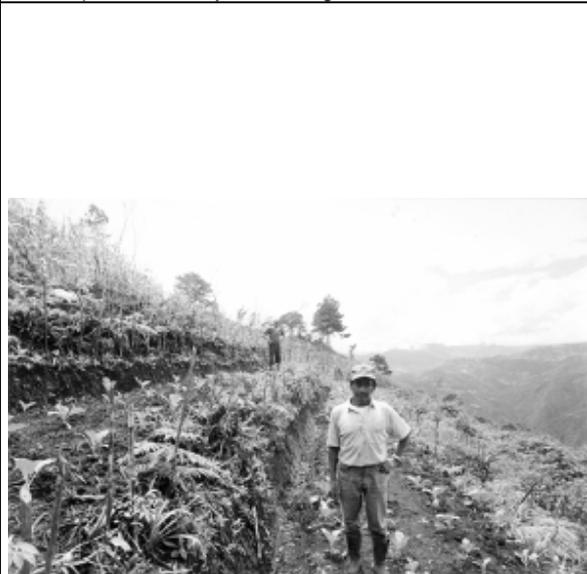


Top: Unproductive, degraded and severely eroded rangelands in Ayacucho, Peru

Top: Mr. Mamani, Tumarapi, Pacajes, La Paz, Bolivia. Participant of Raymi during PAC-II, with his reclaimed rangeland. He changed management practices, planted native grasses and could therefore replace his unproductive sheep with dual purpose cows (meat and milk).

Bottom: Forests, even on steep slopes, are burned down to plant maize, just for one year. Tactic, Alto Verapaz, Guatemala.

Bottom: Terraced slopes and the use of organic fertilizer can sustain agricultural production indefinitely. Tactic, Alto Verapaz, Guatemala. Participants of Raymi during ALA 94/89.



(25.)

Positive discrimination

How can the *poorest people* profit from it all? Positive discrimination inspires the strategy.

For example, the “rules and regulations” of “Pachamaman Urupa” in PAC-II (the EU-sponsored project in Bolivia) explain: “the contest is not about how much (resources) you have but about how you care and take advantage of them”. In general, a contest about “who cares best for his/her resources” tends to favour those who have less: when one has very few possessions, it is easier to give them better care. The poorest families therefore have the best opportunities to win a prize.

(26.)

The grass will be taller next year

Women from Colchani (community participating in contests of PAC-II, Aroma, La Paz, Bolivia) comment: “The animals grow better now that we planted better variety grass”...”Now we plant *Chillihua, paja brava*, and that is good for our animals, and for the soil, so they get more vitamins, and stuff”. “We use those plains for grazing every year, that’s why we have so little grass there. That’s why we planted grass there. Now we have so much *chillihua*.” “Those grasses over there, we call them *yahuara, cola de ratón, khora*. We collected the seed and planted it. Now it is this tall. Next year it will get taller”

(PAC-II, in: Van Turnhout, 1997, p.73)



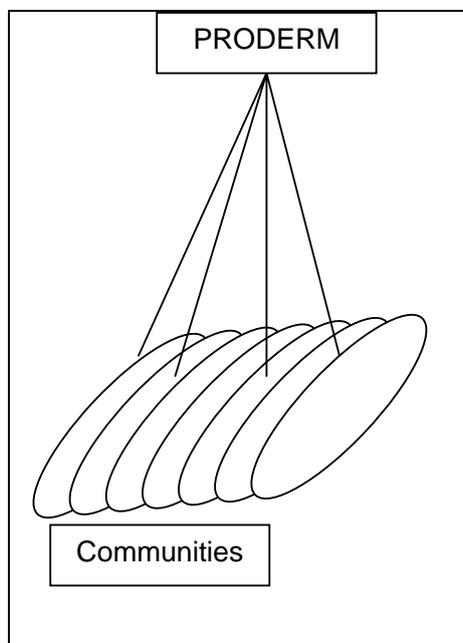
2.3. Adoption of the methodology

Raymi was first designed and implemented in PRODERM from 1987-1988 (¹⁶). Already in the eighties, several governmental and non-governmental organization in Cusco and beyond, were inspired by the experience of PRODERM to use contests to improve field irrigation. Among them were the NGOs “CADEP José María Arguedas”, ITDG, IAA, as well as the Water Management Institute, successor of PRODERM. The National Project for Watershed Management and Soil Conservation (PRONAMACHCS) of the Ministry of Agriculture used yearly contests to motivate people to carry out soil conservation practices and organized “farmer rallies”, and championships between winning teams in different regions of Peru.

Some of these institutions emphasized the transcultural participation (for example, ITDG in Sicuani, Cusco, Peru).

¹⁶ The European Union and Dutch Development Aid financed PRODERM, the “Rural Development Project in Micro Regions” of the Department of Cusco. Cusco is situated in the Andes, in the southeast of Peru and was the capital of the Tahuantinsuyo, the Inka Empire, at the time of the Spanish conquest.

Several organizations published books about Raymi as experience and certainties grew. Among them are: The NGO “Rural Coordinator for Farmer Organizations and Agrarian Institutions” (known as “Coordinadora Rural”) ⁽¹⁷⁾, ARCADIS Euroconsult, CICDA / RURALTER, GESTRES and DEXCEL. (See also Annex 3: Publications about Raymi) ⁽¹⁸⁾.



PRODERM in Peru achieved that farmer communities organized contests among their families, while the project organized contests between communities. This design was based on an analysis of the social structure of the traditional indigenous communities in Peru in which the family is the basis of the organization and the community merely an extension of family ties on a wider scale.

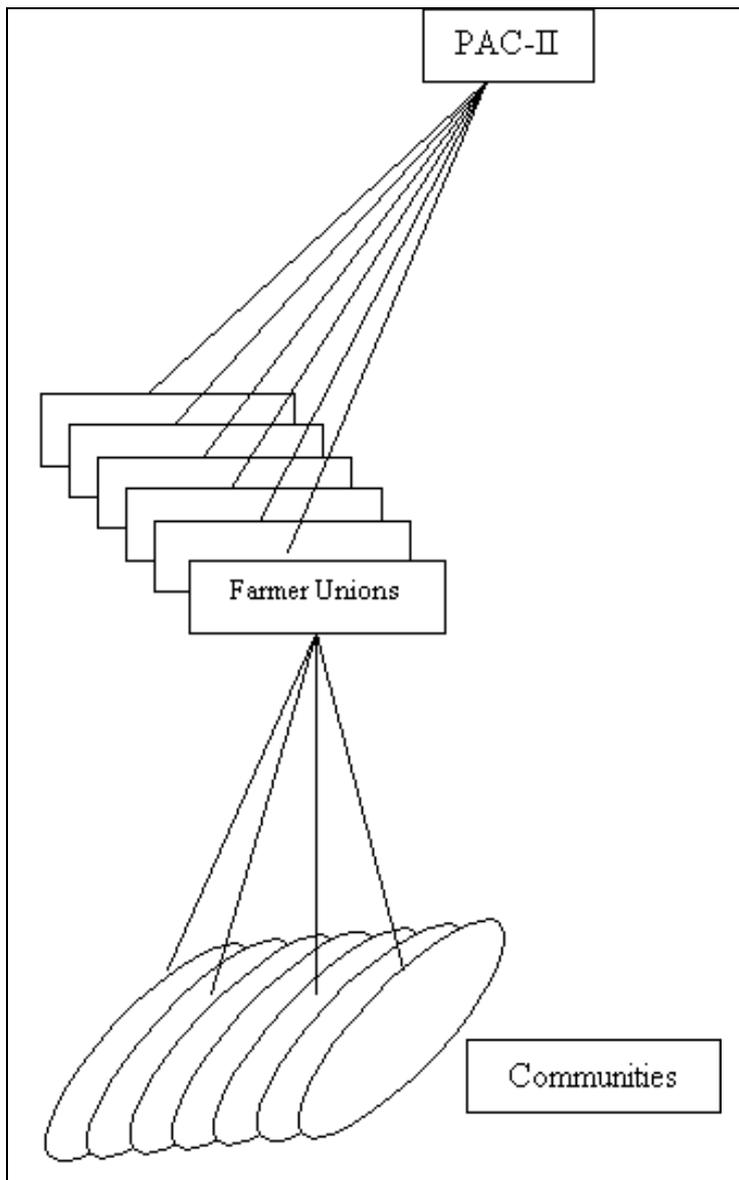
(27.) **Spontaneous linkages to local government**
 With Raymi, PRODERM followed the strategy of using traditional social structures. Consequently, it mobilized and holistically activated the higher levels of organization: from family and community upwards to the municipal governments. This was unexpected and achieved within less than half a year after starting with Raymi.
 Juan Víctor Núñez del Prado. Comments on the draft. 17-8-2005

The Farmer Development Programme (PAC-II, La Paz, Bolivia) implemented from the start, what developed spontaneously in PRODERM: and advanced to second and third tier organizations to improve their capacities, while maintaining, the emphasis on families and communities ⁽¹⁹⁾. Each farmer union organized contests between its communities, and the communities between their families. Such an increase of the role of local organization made it possible to multiply the number of participating communities, but required reorganizing the responsibilities of the extensionists, as their territory had to coincide with farmer unions. Each extensionist worked with one to five unions.

This way, PAC-II could effectively and efficiently ⁽²⁰⁾ involve about 175 communities in their programme (with an average of about 80 families each), while it only had 15 (later reduced to 13) extensionists in that area.

Based on the experience in PAC-II, IFAD formulated a new project for 350 communities in the highlands of Peru (later called MARENASS) with a staff of about 20. MARENASS managed to have communities organize contests among groups of five. However, communities within these groups often belonged to more than one municipality.

¹⁷ This organization is a network of NGO's and farmer organizations in the Peruvian Andes.
¹⁸ See Glossary for details on abbreviations.
¹⁹ At the time, “sub-centrales” and “centrales”, relatively well organized farmer unions, were the obvious choice for PAC-II. Later, when municipalities grew in significance, SID-Bolivia found partners in them.
²⁰ Effectiveness refers to the degree in which an organization achieves its goals. Efficiency refers to the degree in which an organization achieves to lower its costs.



During the design of MARENASS the notion was incorporated to work more explicitly through “mobilization factors”. In this case the most profitable agricultural activities. With this criterion in mind, a set of contents was selected, which would give the highest economic and ecological returns on investment of labour and other inputs. Another step forward was the use of computer simulations of agricultural and livestock systems of different scenarios to outline the basic contents. A number of models were used in conjunction. ⁽²¹⁾
⁽²²⁾

²¹ Simulation of the ecological sub-system was done with: EPIC, Dairy, Alpaca; the data from the eco-simulations were used in the simulation of farm and regional economies with LADERAS.

²² See also: Quiroz, R.A. et.al. 1995.

(28.)

These projects are different too...

Even though they seem to use the same methodologies, projects using Raymi show great differences, as the following table shows:

Some projects or NGOs	The best
1 staff member per 200 families	1 staff member per 1,500
< 5% of families adopt after more than 15 years of project activities	More than 80% adopt in 2 – 4 years
US\$ 560 per family per year	US\$ 35 per family per year
Staff hardly adopts new methodology	Staff only requires 3 a 6 month to adjust

As the table shows, some projects need one staff member in a universe of 200 families, “the best” one per 1,500.

Quite noteworthy is the fact that some require over 15 years to “achieve” that less than 5% adopts changes; others require 4 having a majority adopt.

Some may believe that such different results may be justified as some areas are more complex than others. Not so. As it happened, some the best projects operated in the most difficult regions, where so many others using conventional methodologies failed to produce tangible results.

MARENASS introduced administration of some project funds by the communities. These were transferred to each community’s bank account. This way, the project went one step further in the communities’ capacities. Showing this degree of confidence and trust in the local organizations was a significant gesture. An evaluation mission later remarked that communities opening bank accounts and the project transferring funds to them constituted: “a powerful instrument to incorporate the communities into civil society and formal economy. This process helps the empowerment through direct management of the projects’ resources, and strengthens the communal organization” ⁽²³⁾.

Plan Meriss Inka, in Cusco, with technical assistance from GTZ-ARCOTRASS, developed a combination of contests to improve field irrigation and to strengthen water management organizations. The contests allowed measuring and strengthening their effectiveness and were called: “Meriss type Contests” ⁽²⁴⁾. “The methodology of the ‘Contests’ spread knowledge horizontally, and was a renowned success. The irrigators engage in competitions, applying to their own field what they had learned *in situ* from the *Kamayoc* ⁽²⁵⁾, who helps them during the competition. The referees are neutral persons from other irrigation committees. The winners receive prizes in kind, for example, fertilizer, plant material, etc. and have the possibility to earn an intensive training course in Arequipa, after which they help other irrigators with the different practices.” ⁽²⁶⁾

Plan Meriss Inka organizes contests in a limited number of areas:

- Management of irrigation systems, between irrigation committees.

²³ IFAD, 2003.

²⁴ See also: GTZ-ARCOTRASS, 2002.

²⁵ Traditional expert irrigator from Arequipa.

²⁶ Moosbrugger, Perisutti, Buss, 2002.

- Field irrigation and crop management, between families.
- Nurseries for the production of (fruit) trees.
- Field irrigation and management of cultivated graze lands

In Guatemala, in the Rural Development Programme ALA 94/89 (²⁷), it was found that defining training contents according to people's demands fragments the programme to such a degree that it is hardly possible to achieve measurable results or treat any subject coherently. An instrument was needed to focus the project on those issues that would generate the greatest economic and environmental returns. The concept of "Framework of Contents" was made explicit in this project, though its essence was already conceived in the design of MARENASS.

The Centre for Agricultural Development (CEDAP) in Ayacucho (Peru) designed the "novel contests", first about **preventive healthcare** in rural communities (1992), later expanding to include "all aspects of life". These new contests were called "*Allin Kawsananchikpaq*" (improving life, in Quechua, the Inka language). These contests incorporate a wide range of issues: "preventive health care, ecological arrangement of the farm as a whole, formal education of children, communal organization, agricultural and livestock production and participative citizenship." (²⁸) Many programmes in Peru learned from their experience and example (²⁹).

In Peru, MASAL, a programme financed by Switzerland and the Peruvian Government, promotes Raymi among its many "allies", financing different aspects of Raymi. MASAL also published a manual of Raymi with DEXCEL (³⁰).

In Chile, the Programme "Araucanía Tierra Viva" (financed by the Government of Chile and the European Union) focussed on mutual learning and local knowledge management, making these concepts more explicit. For that reason, and from then on, Raymi was called "Learning from the best". Training of referees was also developed and included.

In Bangladesh, Van Immerzeel adapted Raymi to an entirely different cultural and institutional landscape (for IPSWAM³¹). In this case, aimed at improving water management by people living in "polders" (extremely flat flood plains, surrounded and protected by embankments). These proposals have yet to be implemented.

²⁷ A European Union project in Alto Verapaz.

²⁸ See also: Portugal, 2003 and Wiener, 2003.

²⁹ For example, most notably, the IFAD project MARENASS, which took the improvement of kitchens and houses to many of its 350 communities.

³⁰ Van Immerzeel and Cabero, 2003.

³¹ "Integrated Planning for Sustainable Water Management", financed by the Government of the Netherlands and implemented by ARCADIS Euroconsult, Arnhem, The Netherlands.



(29.)

Life, land and water

Water management determines life in the polders. The canal system and “regulators” may become bottlenecks if not managed properly, making life very difficult for those who live in the polder. IPSWAM aims at participative water management.

IPSWAM is a project of the Bangladesh Water Development Board (BWDB), financed by the Dutch Government. It is implemented by ARCADIS-Euroconsult.

BWDB-IPSWAM promoted the creation of Water Management Organizations (WMO) in each polder. Elections were organized (in 2004), which attracted much attention and provided the organizations with the legitimacy required to act. They also include women on the WMO and on committees for the first time.



Candidates in the election of the Water Management Organization in Polder 43/2E, August 2004.

Mr. Chittoronjon Haldar (President of the Water Management Association - WMA) in Polder 22, District of Khulna, Bangladesh:
"Each Water Management Group should give a list of families that use their resources best"



Raymi workshop in Shenerber, Polder 22, Khulna, Bangladesh, Oct. 4, 2005



Progress of a nation can be no swifter than progress in developing the capacities of its people.
John F. Kennedy

Chapter 3

Design of methodologies

The projects mentioned in Chapter 2 have a methodology in common: Raymi (though they have their differences). Its design has its roots in 1987 and it evolved over the years to become a versatile and effective instrument based on capacity development. In this chapter, we explain the history of its design (paragraph 3.1).

Ever since its first design, we at DEXCEL tried to understand how Raymi could produce such stunning results and impact. Paragraphs 3.2, 3.3 and Chapters 4 and 5 give the “state of the art” of our understanding. Understanding how and why impacts come about helped to improve the methodology and facilitated its adjustment to very different cultural and institutional settings.

When asked how Raymi was conceived, we would say: learning from successes and mistakes, from proposals of several people; taking risks, following intuition and, above all, being alert to how farmers act and react to the methodologies and innovations used by development projects.

Experience and knowledge have grown since 1987, gaining in certainties, opening new avenues, but also new doubts. Each project using Raymi enriched the methodology with some element. In other words, the development of Raymi is an open process, which should continue to strengthen the capacities of the rural communities and improve their economies, their resources and assets. The use and adjustment of this methodology also started in other sectors, as diverse as health care and micro-industry.

New fields of application are foreseen, such as associative farmer enterprises, municipal management, participatory plant breeding, and local governance, among others. The principles on which Raymi is based may well be applicable to these new fields. We do hope that the understanding of “development” will expand by sharing the basics of Raymi, as we attempt in the following paragraphs, rapidly opening up new avenues to improve the plight of the poorest populations.



3.1. From Pachamama Raymi in Peru, to “Learning from the best” in Chile

The design of Raymi started in 1986, when Huub van der Zel, a Dutch rural development expert, was looking for ways to improve field irrigation in a great number of irrigation systems constructed by PRODERM in the mountain areas of Cusco, Peru.



Huub van der Zel entrusted Willem van Immerzeel with the field irrigation-training programme. Willem came forward with an unorthodox proposal: using contests with cash prizes, within a setting of traditional music, theatre, dance and rituals to honour the *Pachamama* (Mother Earth in

Quechua), mobilizing hundreds of farmers. The basic idea originated from the Dutch rural tradition of ploughing contests. Irrigation “trainers” were hired from Arequipa, to assist the participants in preparing for the contests. These “trainers” are traditional experts known as “*Unu Kamayoq*”³², heirs to pre-Inka gravity irrigation techniques, which are extremely efficient and labour saving, as yet unrivalled in the world.

This first experience, using contests, (cash) prizes and building on traditions, evolved into the methodology known as “Learning from the best”, *Raymi* for short (meaning “fiesta” in Quechua³³).



Huub van der Zel and Willem van Immerzeel introduced Raymi in other European Union projects in Bolivia (PAC-II), Guatemala (ALA 94/89) and Chile (Programme Araucanía Tierra Viva), continuing with its development.

Roberto Haudry de Soucy saw Raymi first hand, when he became Co-Director of PRODERM, and years later requested Willem van Immerzeel to design a project for IFAD based on it. It became a pivotal experience for IFAD-Peru, known as MARENASS.



Raymi is being picked up by a growing number of NGO's and other institutions working in human development. One of them, Strategies for International Development (SID) contracted a number of extensionists, including Abraham Borda as director, who learned to implement Raymi as extensionists in PAC-II project in Bolivia. From then on, SID continued with Raymi and introduced it in their ventures in other places, including Guatemala and, as it appears, Africa.

³² “*Unu Kamayoq*”= “guides of water” (in Quechua, the Inka language), specialists in field irrigation.

³³ Raymi was first called “Pachamama Raymi”, meaning “fiesta” of Mother Earth in Quechua.

It all started with field irrigation

PRODERM was engaged in improving irrigation in the southern mountain areas of Peru. At the time –1985, it was noted that the technical staff trained farmers with improvised and abstract courses. Not one farmer could be found using any of the contents taught to them.

Just days after these findings, very positive information was received from another project in Cusco, involved with improving irrigation: PLAN MERISS. Its director said having seen traditional irrigation experts in the valley of Arequipa ⁽³⁴⁾ called “Unu Kamayoq”. These experts used refined field irrigation techniques, very well suited to the objectives of a field irrigation programme. It was decided to hire nine Kamayoq and use them in the communities as trainers. That was in July 1987.

The technical contents to improve field irrigation were found with the employment of the Kamayoq. It was now up to the population to learn and apply them.

However, this first effort was unsuccessful. As it seems, it was not enough to send the Kamayoq to the communities, just to demonstrate their techniques. Worse still, the attempt was stiffly resisted by the farmers. In some cases, they even violently opposed their presence and interventions, in others, the Kamayoq were given the responsibility over the results of the new irrigation techniques.

Whatever the result in the field, this experience clearly showed that people needed some “*motivator*”, a “*motive*” to learn and apply the new technique. It was therefore decided to use an idea tried out by two extensionists (See Text Box 30: “The first experiment”)

(30.)

The first experiment

The very first idea to use contests was presented and implemented in 1986 by two extensionists: Jaime Zárate and Hipólito Lasteros of PRODERM. They wanted to introduce vegetable cultivation with organized groups of women in the communities of Chifia and Parpay, in Paruro, Cusco. Their superiors rejected the proposals to use contests with prizes. However, they decided to implement it anyway, paying the modest prizes out of their own pockets. This became quite successful: many women started to grow vegetables. However, that success was known to very few then.

(PRODERM, In: Van Immerzeel and Cabero, 2003)

They had used **contests** successfully to motivate adoption of innovations. It was hoped that many would be interested to try and adopt the new irrigation techniques if they could win a good prize: hard cash, plus social recognition. It was assumed that people would continue to apply the new techniques when the initial motivator –the prize- was no longer present.

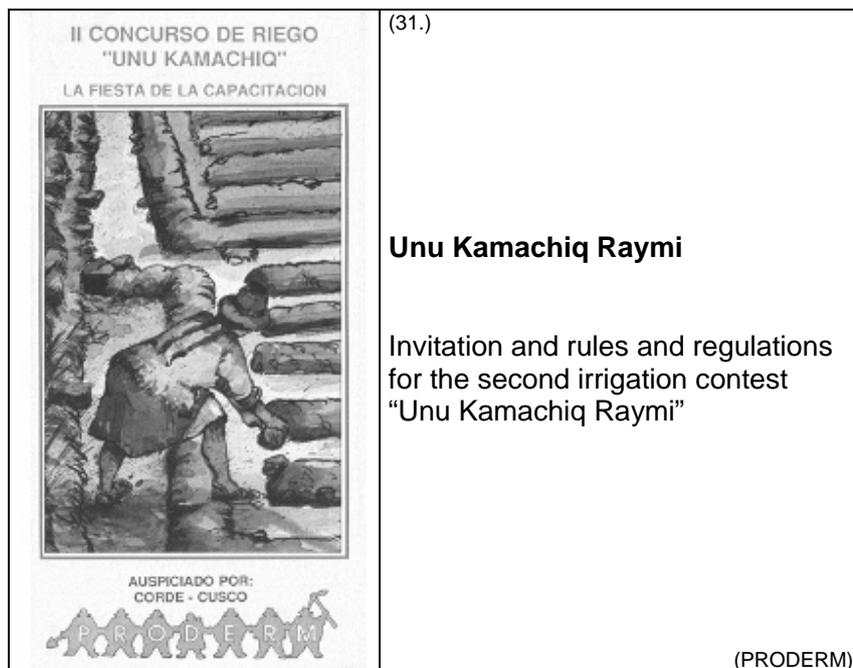
Some simple calculations were made to design the first contests: How many people should learn and apply the new techniques to sustain the process of change? The initial answer was received from Dr. Gerard Geurten ⁽³⁵⁾. According to his explanation, about 30% of the families should adopt the new techniques so that these would be secured –*anchored*– in the group. His explanation was based on social processes of natural diffusion of innovations.

³⁴ Arequipa lies in the South of Peru.

³⁵ This was in 1985, when he worked in PRODERM, Cusco.

Based on this theory, it was decided to organize the first contest with twenty teams of five people each. The Kamayoq from Arequipa would train all team members in irrigation techniques. This first contest was called “*Unu Kamachiq*”. It was much like a quick championship of football. The teams represented their communities and the Kamayoq of PRODERM trained them. The actual contest took place in one of the communities, where each team had to prepare a small plot, clearing and ploughing it, making furrows, and other arrangements. It was then irrigated in the presence of referees. The team that irrigated most efficiently would win the prize.

The first contest was organized in each of the four regions where PRODERM was working. It was a GREAT SUCCESS. Everyone saw what improved irrigation was all about. The communities organized music, traditional dances and other contests on the same day and in the same community, to attract more people and turn it into a great event. Everyone was very enthusiastic. The press provided nation-wide coverage, attracting the attention of authorities. Even the Peruvian Minister of Agriculture came and honoured the farmers. In the end, about 100 persons learned the new irrigation techniques, and thousands learnt about alternatives to traditional irrigation.



After the dust had settled, Carlos Gutiérrez, a PRODERM consultant (who later joined IFAD) came in to evaluate the results and see how the participants applied the new techniques to their own fields. His findings could hardly be more disappointing. Nothing! Not one of the trained participants of the contests applied the techniques; much less did they take the trouble to share their know-how with others.

(32.)



The first irrigation contests were a GREAT SUCCESS. But Carlos Gutierrez found they were not... (PRODERM)



(33.)

Men try, women win

Several female teams participated and won. Some “positive discrimination” was needed to achieve their participation. In this case, all female teams received one kilo of onion seed for their participation.

On the left: Minister of Agriculture, Remigio Morales Bermúdez, congratulating the team from Chifia, winners of the contests in Paruro.

(PRODERM)

This result showed that PRODERM had made a wrong assumption: they thought that it was enough to simply “transfer” a new technology to the farmers, which they could copy and apply it. However, the participants of the contests did not *copy* the techniques, they had to *modify* them, as they had trained to prepare a small plot with five people. That was the situation they faced during the contests: a lot of manual labour on a very small plot. Conditions in “real life” are quite different. The fields are much larger, and have to be prepared in a short period with comparatively little manual labour. What was learned during the contests did not apply to these real conditions.

In addition, there was still no **motive** to try and adapt the techniques in their own fields. Instead, people feared the risks associated with these innovations. For example, everyone was used to irrigate in abundance for field preparation and to wait for the rains to take over. Much less water is applied with the new techniques, but irrigation needs to be repeated several times. The plants could get drowned if it rains after any of those irrigations. In short, there was no **motive** at all to believe that the crop would do any better with the new techniques.

(34.)



Traditional irrigation in Andahuaylas, Peru.
“Everyone was used to irrigate in abundance for field preparation.”
A wasteful, very erosive but widely practiced technique.

The farmers trained to participate in the contests, but resisted to change what they practiced every day, as any person with self-confidence would.

(35.)

“Unu Kamachiq was theoretical”

Comments of Eustaquio Ccopa, community leader:

“Now we have an abundance of onions. Before this experience, only three farmers cultivated onions and the others had to barter to get them. Onions were brought from elsewhere and we had to give barley or some other product in exchange. This was no longer necessary.

This year, with Pachamama Raymi, there is an abundance of onions. Unu Kamachiq was just irrigation, it was training and there were no results. But now, Pachamama Raymi is practical, we plant and harvest. Unu Kamachiq was just theoretical. Pachamama is practical. You can see the results.”

(PRODERM. Valderrama and Escalante In: Van Immerzeel and Núñez del Prado, 1994.)

The next move was to insist in providing the participants with a **motive** to adapt and apply the new techniques to their own fields. The contests had proven to be a very strong and effective motivator. It was therefore decided to continue with this idea, only taking the “arena” of the contest to the field of each family. This is how a new kind of contests came about: the “contest of trainers” ⁽³⁶⁾. These were held between and within groups of reciprocity, called “Ayni” (in Quechua), which is a traditional form of mutual support in major tasks, such as field preparation and planting.

The “trainer” was a participant of the first contest. He had the responsibility to teach the innovations to at least five members of his Ayni group. The “trainer” had to adjust the new techniques to the conditions of his field and crops.

³⁶ The word “trainer” is used in the sense of a sport, as in soccer.

It appeared necessary that these trainers could see the field irrigation techniques in all its complexities and variations, and that they could appreciate its advantages in its proper context. It was therefore decided to send the farmers with superior irrigation skills to Arequipa, on a 15 days intensive practical training course. Among them were, of course, the winners of the first irrigation contests.

(36.)

A development project...

A development project is a mechanism through which one tries to strengthen the ways in which **the population** increases their resource base, their productive infrastructure, technological capabilities and their most efficient forms of social organization, for production, with integrated management of their environment. Environment is understood as a social and biological system.

Sustainable development is possible in harmony between men and nature: improved capacities of men, enrichment of the earth. **Transcultural participation** emphasizes this fact.

(37.)

A Kamayoq declares



“The Unu Kamayoq (traditional field irrigation expert in Peru) understands agriculture, from planting to preparing the ‘*composturas*’ (field layout and arrangement of furrows).

He understands especially about field irrigation. For example, I did not study. It is all practice. Here in Arequipa all crops are grown with irrigation. The irrigation techniques consist of dominating the water, which depends on the ‘*composturas*’ of the field. These have to be made while preparing the field. Irrigation is very easy once that is done.”

(PRODERM. Kamayoq, in: Sur, Boletín Informativo Agrario, XI.116, August 1988,p.25)

(38.)

Learning with a spade, pencil and crayon

The 30 farmers, participants of the first “intensive practical training course” stayed with small farmers and Kamayoq in Alto de Amados (a small village near Arequipa). In the morning they worked on the fields.

Due to a misunderstanding, one of the groups had no work on the first morning. So an alternative activity had to be found for them. They were given pencils and paper and were requested to draw all details of the field layout and field irrigation techniques, of any field they found interesting. At the end of that first morning, this group had identified many remarkable details, which otherwise would not have been noticed, even when looking carefully.

Based on this experience, all groups were given paper and pencils, to take notes during their work, to draw the “*composturas*” (field layout) of the plots where they worked, and write down all the names of the different parts of the “*composturas*”, as well as other details, such as the estimated discharge (in litres per second³⁷), time required to irrigate the field, size of the plot, which crops are grown, how weeding was done, etc.

It was found that taking notes not only sharpens observation, but it also helps to remember each detail, once the participant is back home. It also enhances learning a new vocabulary, which comes with the new techniques, and of course, taking notes and drawing was needed to inform the rest of the group. Those who were illiterate would take notes by making drawings.



In the afternoons, findings were shared with the group. Each participant illustrated their observations with drawings made on the cement floor (with crayons, see picture) of the restaurant where they all had lunch. After lunch, they had to make the “*composturas*” seen in the morning, and irrigate them.

This way, practice was linked to observation and brought to a level of abstraction. This level

³⁷ Accurate portable discharge measurement structures were used to “train the eye” in estimating the water flow. See also: Bos, Replogle and Clemens, 1986.

was achieved by taking notes and making drawings on paper and on the floor; by explaining the drawings; by calculating the amount of water (discharge x time) used for that particular plot; by comparing the amount of water used at home with the old techniques, to the amount they estimated would be required with the new techniques, etc.

After several days of going through these exercises, the participants were able to go from field irrigation to the organization of the whole irrigation system. They were able to move to management of the irrigation system in the community of each participant, adjusting to the requirements of the new field irrigation techniques.

When Carlos Gutiérrez came to register this experience on video, he exclaimed: you are using several pedagogic principles all at once!!, from the concrete and specific to the abstract, and vice versa, from simple to the complex, etc. We were learning!!

(PRODERM Field notes, In: Van Immerzeel and Cabero, 2003)

This way, the “trainers” (the farmers from Cusco) had the opportunity to see the very profitable results of the techniques of the Kamayoq and that they require less time and labour. The farmers from Cusco also appreciated the great diversity of techniques and the extensive vocabulary needed to designate every detail: “*compostura*”, “*mudadas*”, “*melgas*”, “*caballos*”, “*cojos*”, “*calles*”, “*boquerones*”, “*cuello de llama*”, “*cojo chileno*”, etc. ⁽³⁸⁾

Back in Cusco, the farmers had to adjust what they had learned, to their reality and train others as well. Once again, contests and good prizes were the **motivators** for the effort.

Several times during the season, progress of trainers and each member of their “Ayni” group (of reciprocity) were assessed in their fields. It was calculated that at least 600 persons were trained in each of the four regions of PRODERM (600 = 100 teams of 1 trainer + 5 “students”). Each participant learned the basics of the techniques, and applied them to their own fields. This meant that at the time of the harvest, 2400 (= 4 x 600) people had been trained. One more contest would make it possible that 6 x 2,400 = 14,400 people would apply the innovations. This would be far beyond the target, the minimum requirements (30% of the total population).

³⁸ The irrigation techniques used in Arequipa are very similar to the ones found in the Peruvian coast, and originate from pre-Inka times, in the North coast of Peru (Mochica and Chimú cultures). The techniques allow a highly efficient use of water at little cost and are considered superior to techniques used elsewhere in Peru, or even the rest of the world. Hundreds of hectares with pre-Inka “*composturas*” can still be seen in the desert between Jequetepeque and Zaña. See also: Kosok, 1965.



From a pamphlet prepared by three “*Kamayoq*” from Arequipa, Peru, for PAC-II in La Paz, Bolivia.

(39.)

“Composturas”

Field prepared for irrigation with a particular kind of arrangement.

Kamayoq:

Simón Paucar
Oswaldo Enríques
Emiliano Chaiña

from Villa La Joya, Arequipa, Peru.

These three Kamayoq worked in many projects in Bolivia and Peru, spreading their irrigation techniques. They prepared a number of colourful and instructive leaflets.

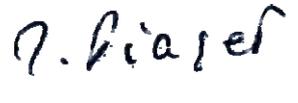
These first estimates showed that conventional training (extensionist to farmer) did not have the same capacity. Using the conventional method, one extensionist could only achieve that about 80 families would apply an innovation after one year. This is an optimistic estimate. This figure is usually much lower. Using 80 families as an estimate, it would mean that 180 (!) extensionists would be required to train the same 14,400 families. This rough calculation does not take into account that people do their level best when they participate in a contest.

It was evident that the combination of contests and learning from others (Kamayoq and trainers) was a more effective training method than the conventional one.

During one of the evaluations of the contests, Carlos Gutiérrez pointed out: “You are using the cognitive approach!!” (See Text Box 40: “The cognitive approach”).

This remark opened the doors to a rich theoretical framework, which in turn, opened up new horizons. The cognitive approach to education is based on the psychological evolution developed by Jean Piaget. It is founded on the notion that all people already possess valid knowledge and that learning is not about a “transfer of knowledge” but rather about building on and improving existing knowledge. To do so, existing knowledge needs to be systematized and related to new knowledge. These principles are formulated for an individual level. We understood that they should also be valid at the group level to “develop capacities of organizations”. Such a step is possible when capacity building of a population is linked to their pre-existing social structures (family, community, district, etc.). ⁽³⁹⁾

³⁹ From “notes on the draft” of Juan Víctor Núñez del Prado.

	<p>(40.)</p> <p style="text-align: center;">The cognitive approach</p> <p>Piaget explained years ago: all learning processes require <i>assimilation</i> of the contents (field irrigation techniques in this case). These contents need to be re-structured and modify the cognitive structure of the person. <i>That is when the technique can be re-invented, that is, adapted to the local conditions, and consequently applied.</i></p> <p>The farmers modified some procedures and reinvented them, in applying and adapting the techniques to their circumstances.</p> <p>This process of adjustment necessarily creates and requires understanding, comprehension, of the <i>principles</i> on which the techniques are based. Once the principles are understood, the techniques can be adapted and applied to different circumstances.</p>
<p>Jean Piaget 1896-1980</p> 	

PRODERM arrived at the cognitive approach in the described manner, by discovering and using the capacities of the farmers and Kamayoq of Arequipa and Cusco. The farmers no longer were the problem (because of their “resistance” to innovations, etc.). Quite to the contrary, they became key to “the solution”. Only they could generate and adapt technologies to their many particular situations. Only they had sufficient capacity -in terms of number of people, and know-how- to accomplish the “*anchoring*” of the contents in the population. ⁽⁴⁰⁾

Many farmers, motivated by contests, tried to use the new technology in their fields. However, PRODERM did not have enough time to repeat these contests to secure the results. This is why many farmers abandoned the new techniques, which we call “**contraction**”.

The “lessons learned” up to this point, were:

- The training contents are the know-how with which some farmers obtain outstanding results (Kamayoq, in the case of field irrigation techniques). Discovering these specific contents is finding the person(s) that possess the know-how, the right capacities; (See also Figure 3: “Tacit and Explicit Knowledge”)
- The farmers, in turn, develop specific contents during their experiments and modify the technology.
- These farmers can train others in these specific contents, very effectively and efficiently.
- All this would mean that the roles of the project would be: discover specific contents (that is, people with certain capacities) and provide strong motivators to create an environment for local learning, experimentation, and exchange.
- The project should use the following motivators: contests with prizes (the “cooperative competition”). Everyone wins, as know-how is shared;
- The contests must focus on determining who has the know-how to manage their resources and created the best solutions, judging by results. (This is very different from contests about who did more of one or another particular “solution”).

⁴⁰ Remember, “anchoring” an innovation in a population requires that about 30% adopts it.

- The resonance with the cognitive approach showed the value of using theories. Such theories, of course, are nothing but an abstraction of accumulated experience. Of course, we aren't interested in just any theory, just those that fit our empirical experience adequately.

PRODERM did not only have a programme to improve irrigation. It also had programmes to improve productivity of the main crops and of livestock. After the success obtained with the irrigation contests, the obvious next step was to integrate the different programmes and apply the lessons learned with the irrigation-training programme.

A first proposal to this end was presented at the end of 1988, named "**Pachamama Raymi**" (⁴¹). It was accepted at first, but later rejected by the Co-Directors of PRODERM. Instead, a programme called "systemic management of watersheds" was implemented (and the irrigation contests continued for another year). A year later, an improved proposal of Pachamama Raymi was presented, approved and implemented. These contests which lasted half a year (one cropping season) were only implemented once, as PRODERM closed shortly after.

By that time, Raymi was already being used by several small NGOs in Peru. A few years later, it was to be implemented again in a big European Union project: during the last years of PAC-II in Bolivia and in the three POST-PAC's (La Paz, Oruro and Potosi).

⁴¹ "Pachamama" is "Mother Earth" in Quechua. "Raymi" means "Fiesta", or celebration.

II CONCURSO DE RIEGO "UNU KAMACHIQ RAYMI"

ANTA : COMUNIDAD CHAQUEPAY
PARURO : COMUNIDAD INCACONA AYLLU CHIFIA
ACOMAYO : COMUNIDAD MARCACONGA
CANAS Y CANCHIS: COMUNIDAD SONGOÑA

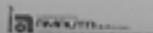


PREMIOS

PRIMER	:	I/. 600.000	POR EQUIPO	TERCERO	:	I/. 280.000	POR EQUIPO
SEGUNDO	:	I/. 400.000	POR EQUIPO	CUARTO	:	I/. 160.000	POR EQUIPO

INSCRIPCIONES E INFORMACIONES EN LA
COMUNIDAD ORGANIZADORA.

EL "UNU KAMACHIQ RAYMI" ES AUSPICIADO POR EL PRODERM.



(41.) The projects announce contests and prices with nice posters (PRODERM)

Transcultural bridges

In the area where Raymi originates, farmers aren't just farmers, they are also heir to rich non-occidental cultures: Quechua and Aymara, quite different from the cultural background of the project.

The project had tried to diminish these differences in a number of ways. This provided important experience in the coming together of project and the local culture and communal processes. We distinguish three aspects: ⁽⁴²⁾

(1) The first contest "Unu Kamachiq" was spontaneously assumed as "Raymi" (*fiesta*). This meant that the winning community took on the organization of the next contest as a ritual duty.

(2) The use of expressions in Quechua "Pachamama", "Qollana", "Kamayoc" and "Kamachiq", part of the Quechua culture, which were applied appropriately to the *essence* and *meaning* of the contest (caring for the Earth) and to the different functions and positions in capacity development.

(3) Incorporating the mutual support group, called "Ayni" within the capacity development programme. Later on, it was the community, which assumed central responsibilities, organizing exchange, contests, etc.

After seeing and analysing these and other aspects, the well-known anthropologist, Juan Víctor Núñez del Prado said: "*You have built some spectacular transcultural bridges*", very relevant for the development process of the communities ⁽⁴³⁾. As with the "cognitive approach", practice stumbled across existing theories and it became clear that the transcultural bridges must also be understood as "motivator". Such bridges, according to applied anthropology, are required to produce significant impact in intercultural environments.

The combination of motivators (contests, prizes, transcultural bridges) is powerful and very effective, as could be seen during so many different occasions with Unu Kamachiq Raymi and Pachamama Raymi.

(42.) ... When planning how they would continue **after MARENASS**, many communities expressed that they wanted all their families to learn and apply the innovations; they indicated that this would be the task of the communal organization and the Ayni groups...
(MARENASS. In: De Zutter, 2004, p.139)

(43.)
"From farmer to extensionist"
The effectiveness of the methodology was clearly demonstrated during these three years of capacity development and contests. It was a very effective and adequate way to spread knowledge and know-how, not only from "farmer to farmer", but also from farmer to extensionist.
(PRODERM. Valderrama and Escalante, in: Van Immerzeel and Núñez del Prado)

⁴² See Glossary for the Quechua terms.

⁴³ Later he elaborated this idea in: Van Immerzeel and Núñez del Prado, 1994.

The project determines the main issues through farm system analysis

PRODERM had invested in improving irrigation systems. The economic justification was partially based on increasing productivity of potatoes through supplementary irrigation (supplementary to the rainfall).

However, mathematical simulation with WOFOST ⁽⁴⁴⁾ showed that productivity increase would hardly be significant in Cusco. There were more lucrative alternatives like applying irrigation to other crops ⁽⁴⁵⁾. This first experience with a simulation model showed interesting possibilities to identify the best alternatives. In this case, only irrigated crops were analysed. However, the potential use of simulations was clearly demonstrated. Better programmes and more powerful computers were required (at that time, PRODERM had one of the first PC's. A complete "run" took about 30 hours).

Some year's later, mathematical simulations of production systems were used to design the MARENASS project. The simulations also made it possible to estimate the economic and environmental impact of the project and to predict the conditions without intervention. The difference provided an estimate of the impact of the intervention. The simulations made it possible to determine "Framework of Contents", which include those issues that would produce the best economic and environmental results.

The project identifies the basic contents, based on system analysis -ecological and economical- without defining specific "solutions" for each case, and much less, without defining its own supposed "solutions" related to the "Framework of Contents".

(44.)

"Organic Agriculture"

Mr. Roberto Suc Gualim

Member II of APAGRO and Member III of the Committee of Credit ASILCOM.
Pambón Grande, San Cristóbal Verapaz, Guatemala.

"There was a contest and I participated, but the problem was that I didn't know about soil conservation. In 2001 they had organized another contest "Tikoj K'acharik" ⁽⁴⁶⁾. This time I was professor, and I had 17 students. Two of them were promoted.

It was not easy to do all this work in groups. We had failures but I encouraged my students. And as a professor, I received the first prize. They gave me 4000 Quetzales.

I learned about agriculture, management and soil conservation. I also learned to work in a group. We have formed an association of organic agriculture of the people of Poq'omchí (an ethnic group) and that is important for our future as we can now sell our products at higher prices, as they are totally organic.

(Participant of a contest of ALA 94/89, Alto Verapaz, Guatemala In: Van Immerzeel, 2002)

⁴⁴ Van Diepen, et.al., 1988.

⁴⁵ Page 54. Van Immerzeel and Núñez del Prado, 1994

⁴⁶ This means "Planting life", in Poq'omchí, one of several native languages in Guatemala.

The system focus

From the above, it follows that Raymi uses the “system focus”, as introducing change in the rural area is about intervening simultaneously in different and interlinked subsystems; in this case, the social, the ecological and economic. Each subsystem is comprised of different elements. Some are critical, and can provoke negative effects, or can produce important positive impact, multiplied through its relations with other elements.

Raymi proposes to identify the elements that make up the ecological sub-system, to distinguish the essential ones, and be able to design a strategy with positive impacts, ecological as well as economical. The combination of all such elements is called the “Framework of Contents”.

Similarly, it is possible to generate great dynamism in the social sub-system (families and their communities), using the system focus to design simple, practical and effective ways. According to Richard Adams, social transformations of some relevance always start with individuals, which then affect basic social units, such as the family, extending to the community, the province, etc.

This may sound complicated and therefore not attractive. However, the actual steps are quite simple. The Raymi guidebook (an English version is being prepared) explains them in such a way that the system focus can be used in every development project.

WARNING: The use of abstract theories, the system-focus and computer simulations, are very attractive and necessary tools but they hold the risk of clinging to supposed certainties creating rigidity and new dogmas. No computer or theory can replace the sensitivities required to avoid such a trap.

(45.)

Contests to reward creativity, vim and vigour

In the context of communities, contests stimulate, acknowledge and reward an attitude and successful effort for improvement. Local actors implement and control these contests among peers, which are about issues of vital interest.

Such contests restore people's self-esteem and increase their interest in relation with different authorities and institutions. In such relations they are no longer "beneficiaries" of handouts or trick-or-treats, but become "partners", with whom it is worthwhile investing resources.

Encouraging competition sometimes creates doubts among those who fear divisions or that the most deprived members would loose out. By itself, intense competition can lead to such situations. However, associated with the other criteria, particularly the "positive discrimination" for those in need (see Text Box 89, "Positive discrimination"), its impact is positive indeed.

Competition is a universal, powerful and deeply human emotion. Raymi aims to harness it to eradicate poverty.

(Adapted from: De Zutter, 2005)

(46.)

"Really, we did not seek to win the contest"

Mr. Enrique Cal Suc
Pampacché, San Cristóbal Verapaz

August 20, 2002.

The truth is, we have always worked in agriculture, since we were very young, and always knew how to grow our traditional crops, like beans and maize, which we didn't do very well. We got some new knowledge from training courses, to plant "scientifically" and make use of each corner of our fields.

Our group is working very enthusiastically, since it is a great responsibility, and we have organized a committee in the community, to do things formally. We meet every week, because we want to do things well. The proof is that we have our internal regulations. When someone makes some mistake in his work, we discipline him, because for one person we cannot afford to loose the work that should benefit us all.

Though for the moment we have just learned to work, the only thing now is to wait for the results that we will get when we harvest our crops.

*We are participating in the third contest, but really, **we don't seek to win**, because we are just starting. What really matters to us now is to know the results of our work. We are interested to know how much we have learned, because if it works well, we then dedicate ourselves to this activity.*

Personally, I thank the people that have thought of our community. It is a bit cold out here and it is difficult to get a good crop here. I trust that it will help my family and me because really it is very hard to earn a few pennies. That's why I believe that this activity will help me to improve.

(Participant in a contest organized by ALA 94/89, Alto Verapaz, Guatemala)



3.2. “Learning from the best”: the groundwork

In the previous paragraph we stumbled across several concepts while telling the history of the creation of Raymi. In this paragraph we will continue this quest, without having the illusion to present you a complete and neatly finished conceptual framework. Rather, we can provide you with our “state-of-the-art”, with many opportunities to improve. Our starting point is, of course, experience with so many different projects using Raymi.

This paragraph will look into the following issues:

- Speed of change, explaining why fast changes are needed and how they can be brought about. However, fast changes are associated with unsustainable results. How can fast results be sustainable?
- Tacit and explicit knowledge;
- Knowledge management: a tool to generate rapid changes in environments which are notoriously slow in adapting;
- The transfer of knowledge and the cognitive approach of learning;

This paragraph concludes briefly describing the key issue: developing people’s capacities.



Fast or slow

While visiting the many communities of projects using Raymi, probably the most striking and wonderful experience is the speed of change that can be seen everywhere. That speed makes it possible to confront growing poverty in the context of rapid environmental degradation. Better still, it is not some project, but the population that is moving so fast. This is a guarantee for sustainability, as can be seen in those areas where projects which used Raymi closed down some years ago.

We will try and explain why Raymi can produce quick and sustainable results, even under extreme conditions (desertification: extreme poverty, migration and a dwindling resource base). Understanding this may help to improve this and other methodologies and facilitate their adjustment to other cultural and institutional settings. But first, let us look at speed and slowness.

Conventional development methodologies generally assume that effective and sustainable change can be brought about, but only rather slowly. The following will discuss the speed of development and the possibilities to respond with the urgency demanded by extreme poverty and environmental degradation.

An apparently unsolvable dilemma

It is beyond doubt that development is a complex process. That may be why many believe that a project needs to chaperon rural communities for many years, to arrive at the much-

needed results. It is generally accepted that a period of ten years is reasonable to achieve some change, even when this is much beyond the life span of most projects.

In their book "*Making haste slowly*", Savenije and Huijsman (1991) argue that there is considerable haste, as we are facing a colossal ecological collapse. They explain: "In many areas of the world it is 'five minutes to twelve'- the threat to the local environment makes immediate action appear essential." Inadequate management by millions of small farmers causes the ecological collapse in these marginal areas.

The authors claim that the introduction of sustainable management of natural resources must be slow. This is in stark contrast to their observation that there is much haste to avoid total collapse. The strategy they propose is to invest in people and their organizations, "assuring that the action taken builds on traditional structures and concepts, and has the support of the population, and that programmes fit the rhythms of the society and are institutionally viable" (page 7). The authors recommend this strategy, not because it is quick, but because it produces sustainable results.

They thus expose an apparently unsolvable dilemma: there is much haste due to the speed of the desertification processes. However, we must "make haste slowly", as the title of their book suggests.

They mention "immediate measures" as an alternative to slow participative development efforts. Such measures may include production of massive numbers of trees in the project's nursery, tree plantation programmes, the construction of irrigation systems, terraces, etc. These immediate but imposed solutions, are known to be unsustainable: the trees planted by the project do not receive any care and quickly die; constructions such as canals and terraces are usually only partly taken advantage of, while their maintenance is so deficient that they break down within a few years. Besides, the scale of such efforts is always small, if compared to the magnitude and scale of the problem. The project, with much effort and investment, may be able to carry out reforestation in an eroded area. However, the new forest would only be a small speck in an immense and eroded landscape. The specks would not only be convincing testimony of the promises and potential of the area, but also of the limitations of the project to find solutions that can take advantage of the possibilities on the scale of the landscape.

More important still, many essential issues cannot be addressed by "immediate actions", for example, rangeland management, management of forests, and livestock, maintenance of soil fertility, crop diversification, and so many other *management* issues, which require daily decisions and attention, year after year.

In short, there appear to be no viable options: the first one: –participative but slow– may produce sustainable results, but not at the speed required to confront the widespread ecological collapse. The second option: "immediate action" is quick, but cannot be applied to large regions, and even if it could be done, it cannot achieve crucial and lasting changes in resource *management*.

The first option (slow, participative development) would be adequate if the changes were much faster. Many studies were dedicated to accelerate processes of change, and to understand what speeds them up or slows them down. However, it seems that "participative" processes are always slow. Worse even, "quick" is thought to be synonymous to "imposed", and "unsustainable". Also the use of mass media (radio, etc.) received much attention as a source of information to accelerate change. However, these media are "relatively ineffective

in changing behaviour unless there is extensive personal follow-up by extension agents in the field”⁽⁴⁷⁾. Consequently, change isn’t just slow it’s also costly.

Different methodologies were developed to introduce change in rural areas. A well-known one is the “linear model”: scientific research generates solutions and these are “extended” to the users (the word “extensionist” is derived from this linear approach). This model is also called “Transfer of Technology” (ToT).

(47.)

Transfer of Technology (ToT)

ToT is a process by which technological “packages” are developed by highly educated professionals in central, and well controlled environments, such as research stations, laboratories, etc. These are transferred for adoption to farmers. ToT forms part of a vertical focus on technological change, where development, adjustment and diffusion all have one direction: from top to bottom.⁽⁴⁸⁾

Based on this outlook, several international research centres were created and received financial backing from private funds (Ford, Rockefeller, and others).

ToT and the accompanying technology had considerable impact on crop yields in many countries in Asia, Latin America and to a lesser degree, in Africa. These improvements were based on the use of high yielding varieties of rice, wheat, corn and soybean, which require considerable amounts of external inputs. This kind of agriculture is therefore known as HEIA (*High External Inputs Agriculture*).

Another, widely used model is the “*Training and Visit system*” (T&V) and similar ones: a technical person visits about 80 families, carefully selected among some 800⁽⁴⁹⁾ to help them solve their problems. The changes to be introduced are typically provided by the field staff, backed by experts, whom (s)he can consult. The field staff may find “problems” among its clients, define and “offer” “the”, or rather, “his/her” solution.

ToT and T&V are very similar. The origin of the training contents may be different. ToT has its “technological packages” produced by scientific research. The contents of T&V come from the technical staff (and its group of professional backing). That makes it possible that some “solution” is found among the population and is extended to the rest of the population. However, ToT and T&V use the same mechanism of *vertical transfer* of knowledge.

ToT is criticised for the technological contents it promotes. Criticizing a training methodology for its contents shows a peculiar view and confusion, as if *content* and methodology of

⁴⁷ Van den Ban & H.S. Hawkins; 1996:109-111.

⁴⁸ Chambers, 1997:16.

⁴⁹ Selection is thought to be important, even essential, as it would improve diffusion. The design of T&V requires the following procedure for such selection: ask all farmers whom they ask for advice about some new method in their work. Those persons who are mentioned most often are the “leaders”, and would be ideal to be included in the list of 80 farmers that receive the visits from the technical person. The other farmers would follow the leaders.

- Many projects prefer less than 80 families per technical person. Some even reduce that number to 20, hoping that intensifying contact would speed up the processes of change. Others don’t pick one leader among 10 followers, but among many more. Still others among less.

However, changing numbers doesn’t alter the methodology, nor does it make it significantly better.

introduction would be intimately linked. It is like believing that a truck transporting wood is different from one that transports cattle. Changing the cargo does not change the truck ⁽⁵⁰⁾. Changing training contents, (for example, by something found among the population) does not affect the way it is introduced. We therefore refer to T&V, with the understanding that it is similar to several known methodologies, as far as the introduction of innovations in a population is concerned.

T&V assumes that the innovations introduced to a small percentage of the population, will spread to the rest (a process known as “diffusionism”). The aim of T&V is to introduce the innovations to about 10% of the farmers, meaning that diffusion would take care of the remaining 90%. However, the speed of “natural” diffusion, from the 10% mark onward, is slow, as is illustrated in Figure 4: “Adoption and diffusion of sprinkler irrigation in Paucartambo”. The influence on natural diffusion would be limited to issues such as the careful selection of farmers that receive the frequent visits of the field staff. ⁽⁵¹⁾.

Alternative methodologies emphasized local know-how, and other capacities of the population, which is no longer a passive recipient of the results of scientific investigation or of the knowledge of the project’s field staff. ⁽⁵²⁾. These participative methodologies became popular during the 1990’s. ⁽⁵³⁾

Changes in outlook of training methodologies and content had hardly any impact on the speed of adoption or diffusion of innovations. This may explain why it is still generally assumed that participative training necessarily has to be a slow process (an example of this conviction is the book “*Making haste slowly*”, by Savenije and Huijsman). As it appears, none of the existing methodologies can drive fast processes of change.

In other words, the dilemma of:

- the haste due to the speed of environmental collapse (and with it, increase in poverty) and
- the slowness of the processes of change, through training,

seems to be unsolvable.

This means, however, that experience of the projects using Raymi is important, as it shows that more efficient methodologies exist and can match the requirements of producing sustainable change in eradicating poverty and adequate resource management, at a faster pace than the environment collapse. *How is that possible?* The following section “The population and their expert knowledge” partly explains it. An essential part of the answer has to do with making efficient use of people’s capacities. Text Box ttr “People have capacities to invest...” provides a meaningful example.

⁵⁰ Using the image whereby training contents is the “cargo”; and the methodology of introduction is the “truck”.

⁵¹ Van den Ban and Hawkins; 1996:258-262.

⁵² Röling c.s; 1994:275-294.

⁵³ Hagman, 1998.

(48.)



Burning for field bed preparation. It is widely practiced but is a brutal assault on soil fertility, Community of Panteón, Tamahú, Alta Verapaz, Guatemala.



Accelerate change

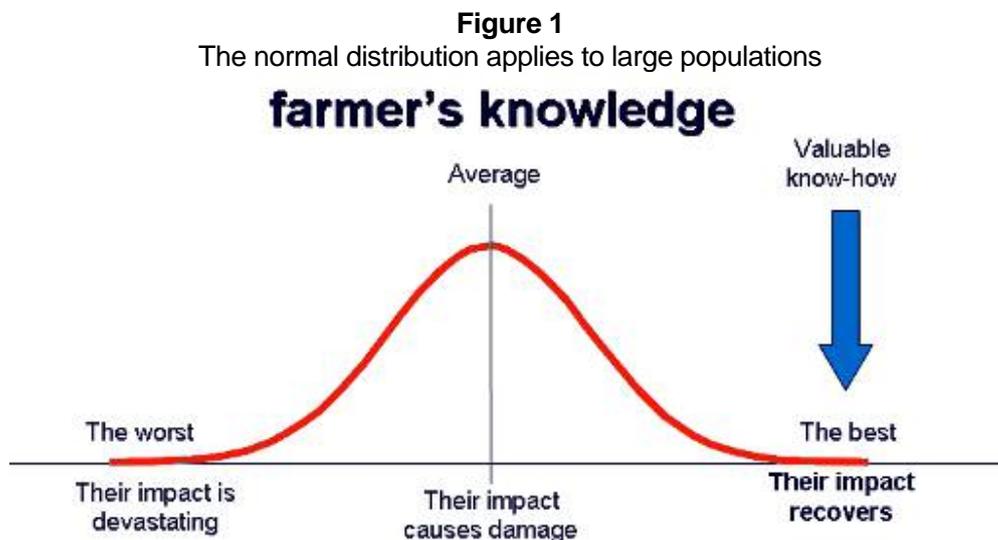
The experience of projects using Raymi is quite important, since it shows us a methodology capable of producing very quick and sustainable change, eradicating poverty while reclaiming natural resources.

How is this possible? The universal resistance to change appears to be the main cause of slowness of development through conventional methodologies. This resistance is understandable as change implies risk. Besides, it requires learning something new which implies time and effort. So what *motive* could people have to introduce rapid change?

Raymi makes substantial changes possible, in a short time and at a very low investment. To make it possible, it seeks to reduce the risks associated with change, accelerate learning and provide people great motives to change.

How can the risks associated with change be reduced? Raymi achieves risk reduction by only promoting changes which have already generated great successes; by only promoting what was already validated under the same or very similar conditions and realities. Besides, the contents to be learned have to be as complete and coherent as possible. All this implies that the “teachers” should be those who achieved those great successes; they are the ones that know all details, the risks, etc. They are the very best to be found.

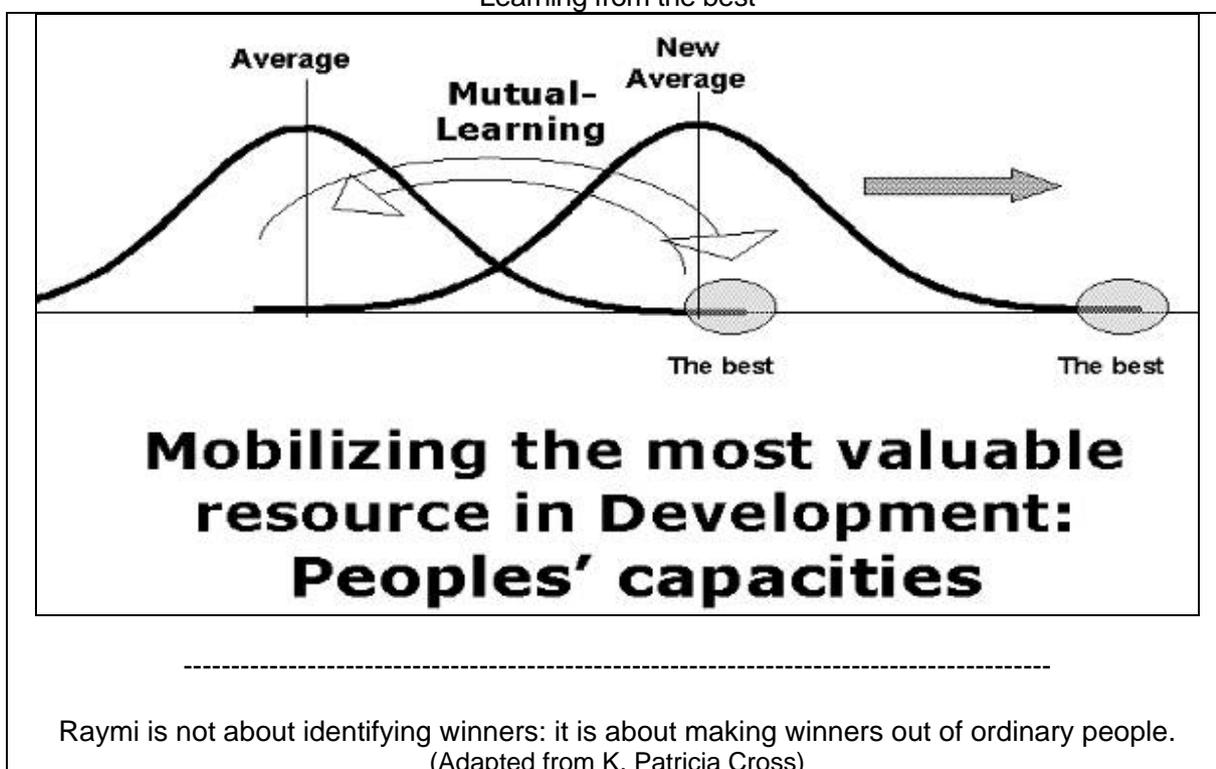
These “tricks” are based on a simple principle: the “normal distribution”, which applies to very large populations (See Figure 1).



The bell curve reflects knowledge and know-how about natural resources management of a population. “Average” knowledge and know-how clearly shows up in the landscape: in severely degraded areas most people cause damage. However, the great exceptions are capable of reclaiming tiny parts of such landscapes. These capacities are depicted on the extreme right of the bell curve.

Knowledge and know-how that determine profitability, productivity and environmental reclamation, can be learned. Consequently, people who are close to “normal” can move towards becoming a great exception. They can learn whatever is needed, from those who are great exceptions now. That is, they can “*learn from the best*”. If many do, it would be possible to move the whole curve towards the right. (See Figure 2: “Learning from the best”).

Figure 2
“Learning from the best”



The larger the population the more interesting the exceptions, but the harder it is to find them. It is a great challenge to find those exceptional people, the pioneers. They can make a living from productive resources, where everyone else falls victim to ever-greater poverty as they sacrifice their resources trying to survive. The great exceptions should not only be found, everyone else must learn from them. This will shift the whole bell curve –everyone- away from poverty and degradation.

This is why projects using Raymi work with extremely large populations: 175 communities in the case of PAC-II, in the case of MARENASS in 350, over 40,000 people in all.

The whole curve moves to the right as people acquire and apply the newly found knowledge and know-how about resource management. This will mean that a new curve is established, with new exceptions to be found on its extreme right. These people must be found, as they are essential to keep the whole curve moving.

To accelerate these dynamics, Raymi proposes the use of motivators which should make it possible that a majority of families improve on today's best. Prizes for competitions between families have shown to be excellent motivators.

With Raymi, the speed of change, the speed of development of people's capacities, depends on:

- the intensity of mutual learning in the essential topics and
- the appeal of the motivators.

These two factors entirely depend on the project. Consequently, and contrary to what was always assumed, "resistance to change" is manageable, implying that ***the speed of development of people's capacities depends on Project management:***

- on its capacity to generate mutual learning, on its capacity to permanently find the exceptions in relevant issues, on its capability to determine what these issues are, on its capacity to direct people's attention towards the relevant issues, and
- on its capacity to provide potent motivators capable of invigorating the whole process of mutual learning, creativity and application of innovations.

In other words, the quality of the project's management determines how much time is needed to introduce change in a majority of the population, to eradicate hunger and poverty and to reclaim their natural resources. Experience in many projects using Raymi has shown that only 2 to 4 years are required to shift a majority beyond today's best.

A practical way to achieve that all families try and exceed the best is organizing contests between families, with very attractive prizes, in the most relevant issues to overcome poverty and reclaim resources. The competitions are also a way to find the best in a systematic way.

There is more than one dimension

A person can be among the very best in one aspect, and among the common in others. The bell shaped curve illustrates one dimension of knowledge. However, realities are of course somewhat more complex. This makes it possible to "construct" knowledge, combining knowledge and know-how of different families, and doing so, improve management.

For example, the animals of most families are kept outside in the extreme cold of the highlands. Instead of growing, they lose whatever energy they have stored. Family "B" keeps their animals in a simple barn. Their animals grow better and are healthier. However, that family wastes the manure that accumulates in the barn. They know that using it to fertilize their fields is like "disseminating weeds". Family "M", however, knows how to use the manure avoiding the problem of weeds.

"Knowledge management" is connecting, combining, these and other capacities found among the population. In this case, "B" can learn from "M", and "M" from "B", and everyone can combine "B" + "M" in ways that benefit most.

“Knowledge management” is a rather essential aspect of projects using Raymi. It is discussed below, but first, some details about “knowledge”.



The population and their expert knowledge

(49.) People have capacities to invest...	
 Mr. Flores building his intake.	Water harvesting The “extensionists” ⁽⁵⁴⁾ of PAC-II working with Raymi, “discovered” Mr. Teófilo Flores Bautista, a farmer from the community of Vilaque (Aroma, La Paz, Bolivia). Fifteen years ago (about 1980), it occurred to him to trap some of the runoff rushing through a gully when it rains. That flow only lasts about four hours after rainfall. He built a simple intake and a canal and could irrigate two or three times each year. It doesn’t rain so often where he lives.
 Water is “harvested” and turned into fodder.	With that supplementary irrigation he had the best pastures in the entire region. He also introduced fodder species such as alfalfa, festuca, and many others (mostly native). He harvested seeds in isolated sites of his community and produced so much fodder that his main business became selling animal feed to his neighbours during the most critical period of the year. This is how the Flores family became the first pioneering family of PAC-II. The project hired many buses so farmers from all communities participating in Raymi could visit and see for themselves, learning from Mr.&Mrs. Flores. ⁽⁵⁵⁾
Mr. Flores’ case inspired hundreds of farmers. They invested in building hundreds of kilometres of earthen canals for supplementary irrigation, mostly coming from surface runoff, which lasts little longer than the rain. Farmers also harvest grass seed to plant their irrigated pastures.	
(PAC-II)	

It is generally assumed that the knowledge and know-how, present in a population, is insufficient to be of much use in their development. Rather, certain gaps in their knowledge and know-how oblige projects to employ outside (technical) assistance.

⁵⁴ The extensionists of PAC-II switched from “transfer of knowledge” to the paradigm of Raymi. Their formal designation of “extensionist” did not change, though the content, form and style of their work changed profoundly.

⁵⁵ Bourliaud, López and De Zutter, 1997, p.111.

This line of thought is understandable, as very few people within the population possess exceptional knowledge and know-how. The great majority is among the “common”, the ordinary. The example from the Altiplano of Bolivia is eloquent: only two out of 15.000 families were found with the know-how to recover and manage natural rangelands. One of them is Mr. Teófilo Flores Bautista (see Text Box ttr: “People have capacities to invest...”).

(50.)

“Those kilometres are meters, I suppose...”

When SID-Bolivia, a small NGO, presented results of its experience with Raymi (including for example, “**326 kilometre** of canals, **3,487 kilometre** of infiltration ditches”) to an international audience, they received the comment that there must be some mistake. “Mr. Baldivia, those kilometres are meters, I suppose...”⁽⁵⁶⁾.

Mr. Baldivia: “No sir, the numbers are correct” and concluded: “The massive construction efforts of the farmers, inspired by contests and stunning results of pioneering farmers such as Mr. Flores, resulted in **1000 times** more than conventional projects can achieve. Our farmers did so much, motivated by a modest prize for the best and by having seen the results of others. The other projects can hardly believe it.”



In 1998, SID-Bolivia was recognized as one of the most successful projects in Latin America in a contest sponsored by the World Bank, the United Nations Development Program, and the Inter-American Foundation.

<http://www.sidworld.org/sustag.htm>

(51.)

“Revealing” instead of “intervention”

What people need to thrive is already present within the population. It only needs to be amplified and its diffusion stimulated.

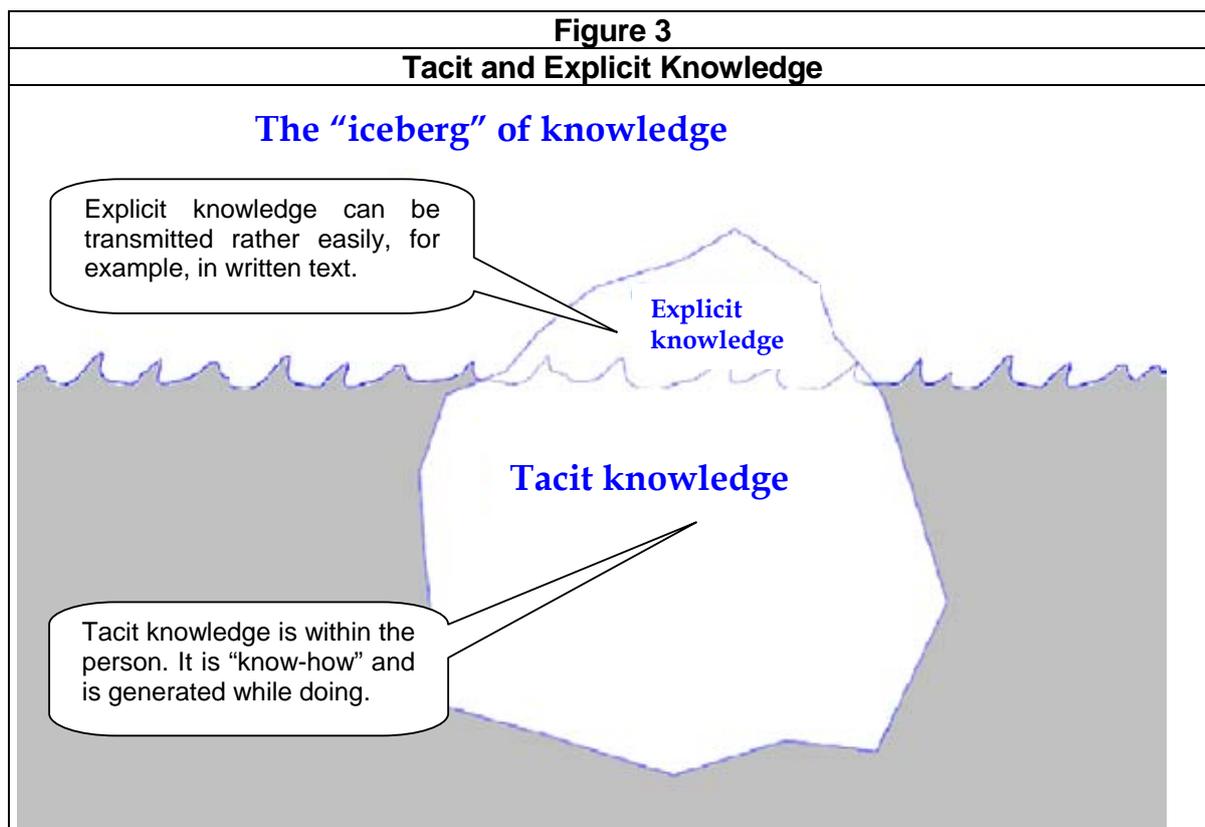
Juan Núñez del Prado



Tacit and Explicit Knowledge

“Learning from the best” recognizes the fact that the most important knowledge comes *with* those who “know-how”. Consequently, the main challenge is to find these people and ensure that many others learn from them.

⁵⁶ When presenting “Strategies to recover the Bolivian Altiplano” by José Baldivia Urdininea, prepared for: “Successful experiences in mitigating poverty, Horizontal cooperation in Latin America and the Caribbean”, UNDP-WORLD BANK, Interamerican Foundation. Available online: www.condesan.org/memoria/BOL0298.pdf



“Learning from the best” is learning from those who know, have the “know-how”. These people may talk or write about what they do. However, there is much that can’t be expressed so easily. It doesn’t come to the surface and remains “under water”, as is illustrated in Figure 3: “Tacit and Explicit Knowledge”. However, it constitutes a very large part of “knowledge”.

“**Tacit knowledge**” comes *with* the person. It is the result of experience and shows in performance and in the capacity to respond efficiently to new problems and challenges. This type of knowledge is accumulated experience; it is personal and non-explicit. This implies that transferring it to other people is difficult and complex.

Tacit knowledge is the so-called “expert knowledge”, the “know-how”; having a certain “competence”. It is generated in the process of life and work of each person. Sometimes it is called “*work process knowledge*” and is acquired through *learning*. This type of knowledge can flow in intensive exchange with “the best” and is acquired when it is used in practice.

“**Explicit knowledge**” is the tip of the “iceberg”, it is objective, rational, and is expressed in words, numbers, formulas, figures, etc. This makes it possible to transmit it, transfer it, through language, written documents, and videos.

(52.)

Tacit knowledge: the “*hand*” needs to learn

A student of medicine will never learn to perform a successful appendectomy from books (containing only explicit knowledge). Instead, almost anyone can learn it from a good surgeon as his mentor. The *hand* of the surgeon is indispensable to learn the required skills, as it is mostly about tacit knowledge. The surgeon will guide his trainee: “not so deep”, “a bit gentler”, “stop the bleeding over here”; “don’t worry about this blood. It is too little to bother”, and so on.

Tacit knowledge is quite essential in agriculture –as in all other activities. However, it is rather common to try and *train* almost exclusively through explicit knowledge. A change of paradigm is required:

from concentrating on *teaching*, it is necessary to switch to achieve that people *learn* from their own experience, and generate new and better capacities by learning from others.



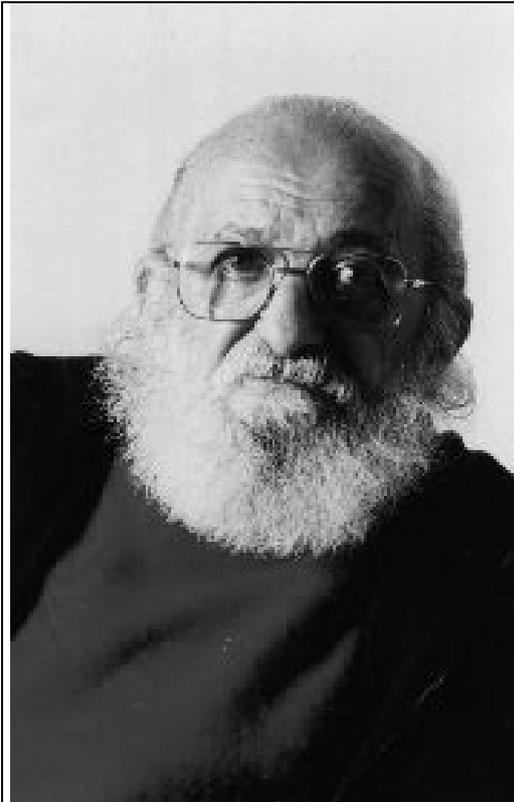
Teaching or learning?

In many training processes it is presumed that “the teacher knows” and that the student is ignorant. Consequently, the central issue would be to “teach”, that is, to “transfer” knowledge from the teacher to the student. The “demonstration plots” and “model farms” fit in this kind of logic: it is expected that the example, the “good practices” radiate towards the others, to those who are ignorant.

You cannot teach a man anything; you can only help him find knowledge. (Galileo Galilei)

Most conventional projects are based on “transfer of knowledge”, on teaching. To describe this outlook, Paulo Freire introduced the caricature of the “banking model” of education, since the student is expected to store up knowledge in his or her mind in much the same way that savings accumulate in a bank account. It is also associated with students sitting in a classroom⁽⁵⁷⁾.

⁵⁷ Translation from Portuguese doesn’t do justice to Freire’s pun: in Portuguese, “bank” is also the chair in which students sit.



Paolo Freire 1921-1997

(53.)

Educate to transform...

This type of education, authoritarian and vertical, is typical for the “teacher”. Consequently, it is assumed that people lack the knowledge the expert has. This kind of education promotes a submissive attitude in children, instead of independent thinking. Transfer of knowledge is even less adequate for adults, debilitating their self-esteem (though it may strengthen the self-esteem of the teacher, the extensionist).



With the caricature of Freire in mind (the “bank”), it is now common to reject the concept of “transfer of knowledge”. The alternative emerges as the complete opposite of the image painted by him. This is how we arrive at participative methods, using open dialogues, not authoritarian, and maybe even out in the open, instead of in a classroom.

The caricature of transfer of knowledge is rejected. This doesn't necessarily mean, however, that it is replaced by a new concept, based on the capacities of the people. In spite of the participative looks, it is likely that there is still a one-directional flow of information.

Instead, the educative approach of Raymi (in its' design and some of its applications) is based on the **cognitive approach** of learning, as it uses the principle of “learning from the best”, the best families, and the best communities. This signals confidence in the capacities of people and their organizations to find and create satisfying and replicable solutions.

“A mind is a fire to be kindled, not a vessel to be filled.” (Plutarch)
It's not what is poured into a student that counts, but what is planted. (Linda Conway)

The cognitive approach (“learning from the best”) allows everyone to contribute to learning, creating a collective process, which in turn generates steady improvement through emulation and mutual support. **Motivation** is absolutely necessary for such learning processes, whereby the population must take on the leadership role.

Each project should define how to strengthen capacities within the population. The cognitive approach of Raymi not only generates much better results; it also places the population centre stage in their development. This makes it possible to mobilize people’s capacities (such as their creativity) and enhances their self-esteem. This is consistent with the objective of any development project: it is **empowerment**.

(54.)

Raymi, women and Empowerment

The interest of the project (Pachamaman Urupa, the Raymi programme of PAC-II) in the indigenous culture, Aymara in this case, resulted in a generalized strengthening of indigenous identity, which I found in Colchani (Aroma, La Paz, Bolivia) and neighbouring communities.

The resulting empowerment produced direct impacts on the position of women. The women highly appreciated the revaluation of indigenous identity. They felt respected. It was a boost to their self-esteem and self-confidence. It also strengthened them as indigenous women and they could emphasize old cultural values such as equality and complementarity between men and women. It offered them an opportunity to highlight their productive work, and their value in their family and community. In other words, strengthening of identity raised women’s self-confidence, and it provided them with the means to create a better position in their society.

(PAC-II. In: Van Turnhout, 1997. p.93.)

(55.)

The “trick of the diluted project”

The shift of paradigm, that the field staffs need to go through, is a major difficulty when implementing Raymi. Everyone is used to being “teacher” and considers to be the “source of knowledge”, believing that it is their task to “help” and solve problems of the farmers. This is also their role in projects that are “participative” and attend farmers’ “demand” for technical assistance.

Raymi changes the role of the “extensionist”. Some adjust easily, but others take the “helping” part of their job really in earnest. The change to the new role in a Capacity Development, “hands-off” project is not at all easy.

To facilitate the transition, the Director of the project has a “trick”, which we will call the “diluted project”. This trick is based on the fact that the conventional field staff can only help a limited number of families, 80 at the most. With Raymi, each staff member must achieve that about 10 to 15 times more families introduce changes in their management. That is impossible if (s)he would stay in his/her conventional role. In other words, the field staff cannot persist in the role of “teacher” and would fail if they tried.



Knowledge management

Rapid change in natural resources management by thousands of families and hundreds of communities is thought to be next to impossible. However, **knowledge management** is a tool developed to create speedy change where this would normally be out of the question: *big corporations*. Their fast changing business environment made fast adjustments a prerequisite to survival and growth. Knowledge management made it possible.

Similarly, in rural development, a rapidly changing environment puts whole societies and entire regions at severe risk and often even “out of business”, generating massive flows of eco-refugees, causing severe problems elsewhere.

As with big corporations, rural societies are normally very slow to adjust. However, local knowledge management makes rapid change possible, as projects and NGO’s, which used Raymi, have shown. As with big corporations, change is not just *possible*, it is *critical* and a *prerequisite for survival and development*. As far as we know, there is no other instrument that can generate rapid change, apart from knowledge management.

If knowledge management is the tool, **local capacities are *the* fundamental resource for development**, even in areas in crisis, with extreme poverty, degradation, migration, and desertification.



(56.)

Degradation puts entire regions out of business...

An abandoned village in Aroma, La Paz, Bolivia

(57.)

Knowledge management, its origins

Toward the end of the nineteen eighties, big corporations started to experience new pressures from the rapid changes that occurred in their environment, including cheaper communications, internet, globalisation, legal transformations, etc.

Some corporations were very slow to adapt to these new conditions. Being big was no longer an advantage: it became a liability.

One example:

Barnes&Noble was the biggest library in the USA, with 542 stores in 49 states.

Amazon.com started in 1995. Less than five years later, they were selling books in 160 countries, including the USA, with total sales of US\$ 2,800 million, almost 10 times the total of Barnes&Noble (US\$ 320 million).

Would it be possible for a big corporation to adapt in such a fast changing business environment, not only to face the challenge, but also to thrive? How?

“Knowledge management” was the key instrument to achieve rapid change in normally sluggish giants. It makes use of the main asset of these companies: the capacities of their huge work force.

It may be obvious, but it must be said: knowledge management and cognitive approach belong together. The aim of knowledge management is to generate, share and apply people's capacities, to provide answers to the needs of families and their communities, for their own development. ⁽⁵⁸⁾

⁵⁸ Or maybe it is only obvious in the described context of contests were large networks of families and communities generate and share their knowledge. José Luis Perisí describes this social kind of knowledge management for other realities. He calls it an “**inclusive model of knowledge management in networks**”. (José Luis Perisí, 2003.)

(58.)

“I don’t know what I don’t know”

Some projects decided that the farmers must determine the topics of their training, in an attempt to create a “participative” training program. This seems to be alright.

However, there is something peculiar about training, because: if “I don’t know what I don’t know”, I cannot request or have any demands about the unknown. This can be illustrated with an example taken from PAC-II.

The population in the Bolivian Altiplano was asked about their major problems and training needs. They replied that many animals get ill and that they want a programme on animal health. The scarcity of fodder for their animals was perceived as the result of drought: “there is plenty of fodder when it rains”. Requesting the project to help them increase fodder production would be like asking for rain. Starving animals easily catch some disease. That’s why farmers want the project to provide training in curing starving animals.

Perceived training needs in rangeland management only appeared after having visited and listened to farmers who knew how to increase the amount of fodder through simple management practices, and who therefore could rear healthy and very productive animals.

All this could be seen on the farm of Mr. **Juan Patsi** from the community of Calacachi, Aroma, La Paz, and also on the farm of Mr. **Teófilo Flores Bautista** from the community of Vilaque, Aroma, La Paz, Bolivia.

This example shows something very essential: *the demands, the perceived training needs, depend on the available information* and they change when people learn about innovations through very convincing examples: a family that can show excellent graze lands, explaining how they did it, and how this *substantially improved their income*.

The **mobilization factor** is their economy. However, the action to be taken and training needs, depend on the available information.

It is possible, and usually necessary, to *generate* demand for important subjects, or rather, for subject which are *essential* to improve incomes (these subjects are the “Framework Contents”).

(59.)

Learning is about exceptions

“Learning from the best” is not about *consensus*; quite to the contrary, *it is about great exceptions and deviant opinions*.



A matter of taste?

Some may perceive the choice of focus (the cognitive approach and knowledge management) as a “matter of taste” or as just another fad. However, these are by no means whimsical choices. There are several strong arguments to support them.

Knowledge management without a cognitive approach is unconceivable. However, there are a number of additional arguments that underpin our choice in favour of the cognitive approach:

First, rural development is about developing capacities of adults. Their empirical knowledge is valid, in their context, in the intercultural setting, to reclaim and strengthen their resource base. We therefore distinguish two aspects, related to our outlook on capacity development:

- (1)** intercultural realities, and
- (2)** natural resources management.

The third and fourth arguments, in favour of the cognitive approach, are more practical in nature:

- (3)** The field staff can train, or rather, can direct training programmes on subjects of which they know very little, defeating a clear shortcoming of the approach based on the “transfer of knowledge”.
- (4)** Only contents tested in real-life will be spread among the population. These include traditional knowledge, ancient beliefs, but also innovations from scientific research stations, and from extensionists and technical staff, in general.

(1) The cognitive approach and the intercultural environment.

The cognitive approach (as in Raymi) is particularly relevant in an intercultural context, as found in areas with an indigenous population. This is the case in many countries in Latin America, and in so many other areas of the world. We must be respectful of their knowledge and know-how, their capacities, their culture, when we wish to interact constructively and productively. Acknowledging our limitations is a pre-condition for coexistence. This call must be strong when interacting with people who are different.

We don't say that indigenous knowledge and know-how is superior and that we should meet it with reverence. Neither do we say that it is unusable and disposable. It's just another form of knowledge, based on different cultural roots.

Indigenous cultures often have devotion for the earth, which renews itself year after year, often through ritual offerings. Such veneration, however, does not mean that there is also an understanding of degradation and reclamation. Love for the Earth does not necessarily imply adequate care.

(60.)

“It’s everyone’s”

The central issue of this methodology is that it allows to comprise several levels at once: the massive, several communities combined, farmers of all ages, without sexual discrimination, literates plus illiterates, Spanish speaking and those who only speak their native language.

(PRODERM. Valderrama and Escalante, in Van Immerzeel and Núñez del Prado, 1994).

(2) The cognitive approach and resource management

It is very likely that the farmers in the project area occupy a marginal and ecological fragile territory. Agriculture is necessarily diverse and risky under such conditions.

The basis for survival has its limits, especially in a fragile environment. Pressure on resources keeps mounting and their productive capacity will hit the limit and start to decline: where corn gives a good crop today, just a few years later production is no longer worth the trouble.

Furthermore, agriculture is a very dynamic business: new pests appear, market opportunities change, all demanding a constant renewal of technology. No technology is universally and lastingly valid under such conditions.

The *transfer of technology* presupposes that extensionists and experts should identify the problems, find the solutions and “extend” them to the population as a whole, as a package of answers. Such a (technological) “package” is closed, by definition. It is a recipe, a formula, valid for many and for a long time to come. This procedure may have been effective in rather uniform areas, with similar producers. However, uniform answers hardly fit the conditions of farmers managing fragile resources.

Adequate resource management requires the capability to choose correctly from a number of technical options, and creating new and better ones. Knowing to choose is necessarily based on *understanding* the processes at work (such as degradation, reclamation, or market mechanisms) and on having a *broad vision*, of techniques and their interactions, and the effects they have on the ecosystem and the economy of the family.

Therefore, when improving management, it is not enough to share techniques, as such (as is the case with the transfer of technology). Instead, methods should be used that allow knowledge and understanding to grow; why this or that should be done, what are the ultimate consequences, experimenting, observing, and adapting the known, to the new situation. This way, farmers will start to respond, autonomously, to the dynamic circumstances of their environment. Each region, watershed, ecosystem, community, farmer, must find and develop the answers to their particular problems and opportunities, and be able to update them when needed.

Consequently, the fundamental elements of sustainable strengthening of farmers’ capacities in resource management are:

- building the self-confidence needed to follow curiosity and creativity, to develop their own answers and solutions instead of waiting for outside help to solve problems identified by an extensionist. This implies developing a positive attitude to investigation and experimentation; and also:
- respecting the farmers’ knowledge, know-how, or in a word, his capacities;

- promote finding answers and solutions as a group ⁽⁵⁹⁾ and forging communal agreements on sustainable resources management, that is, collective construction of knowledge and experience.

It is this capacity for innovation and experimentation that Raymi aims to strengthen, giving incentives to the innovators, and facilitating exchange of knowledge and know-how.

(61.)

Knowing how to choose

One aspect must be emphasized: using Raymi doesn't necessarily mean that one has also adopted knowledge management and the cognitive approach in development ⁽⁶⁰⁾. It is very well possible to use competitions in "transferring" contents. It happened in several occasions. For example, in degraded areas particular contents were often "transferred" (infiltration ditches and terraces, for example) misusing contests.

It is true that the infiltration ditch can solve certain problems, and competitions can be organized to see who constructed most. This way one can report, as accomplishment: "xx miles of infiltration ditches were constructed, or yy acres of terraces were built". However, given the circumstances of a participant: were these the most appropriate measures? For example: in a community in the Peruvian highlands, at 12,000 feet (4,000 m), people had invested large amounts of labour to win a contest about on who constructed more terraces. That way, the community converted 0.2 hectare of hillsides into terraces. At the same time, however, they had no idea how to reclaim 19,000 hectare of severely degraded natural rangelands, most of it as flat as the terraces they had built, which only added 0.2 hectares to their flat rangelands.

Development is not about transferring some technique. It is about *people who know to choose* between different options and management forms, choosing the ones that are most effective and most efficient, for a given situation. This capacity to choose must be based on understanding the processes and principles involved. And people need to be able to create their own solutions if no ready-made answer is at hand.

Farmers' capacity for innovation should not be underestimated. Rather it is a valuable basic resource in strengthening their capacities for their development.

Raymi's approach in knowledge management translates in a particular distribution of roles, consistent with the above. These roles are:

- The population looks for answers, for solutions, creates new ones, conducts experiments, generates new knowledge and know-how;
- The project promotes mutual learning, feeds the process with motivators (mostly prizes), defines the Framework Contents to avoid dispersal of efforts and energy, and it should find Specific Contents (the pioneers) among the population, to disseminate their knowledge and know-how through exchange; the project should offer opportunities for exchange.

⁵⁹ Note that this group does NOT include any staff from the project.

⁶⁰ The hammer was designed to hit nails. However, using the hammer doesn't necessarily mean that you're hitting a nail.

(3) The field staff can train in subjects outside their command.

Text Box ttr: "Mutual learning and the demand of the population" illustrates that it is possible to generate a demand for issues unknown to farmers: rangeland management, in case of the example. This subject is extremely important, as natural rangelands cover a large percentage of the world. Besides, (natural) grass cover, and adequate management, is the main method for soil fertility recovery during fallow period as well as *the* instrument to reclaim vast degraded areas.

Unfortunately, rangeland management does not figure in the curricula of most universities. As a result, there are only very few experts in this subject. Even so, they are overwhelmed by the scale and nature of the problems they face, when asked advice about improvement of non-irrigated rangelands of the communities. The areas are so immense, the landscape so imposing; there is no money for fences, or for any other item that appears to be needed to manage the rangelands "technically". They may propose to use the available funds to fence off a small area. Grass will grow there, showing the potential of the degraded and eroded landscape, but at the same time, it demonstrates the helplessness of the expert to expand his technical advise on a significant scale.

In other words, the professional in rangeland management abandons the field staff by showing (and may be even saying) that the rangelands cannot be recovered under communal management, without money to invest. Confronted with such a situation, the field staff may well be convinced that these immense deserts are useless and hopeless.

For such a situation, Text Box ttr: "Mutual learning and the demand of the population" illustrates something quite extraordinary and extremely important:

- The farmers Mr. Juan Patsi and Mr. Teófilo Flores developed solutions (and apply them with considerable success) for those immense problems, which neither the technical staff of the project, nor local experts, or foreign consultants could solve. These two families were found among 15,000. And they were the only ones.

The field staff can train (or rather, organize training) on what they do not know, once they discovered pioneer farmers, such as Mr. Patsi and Mr. Flores. It consists of renting buses and taking many participants of the contests to see and listen, and speak with these pioneers. The field staffs do not even need to be present during such trips.

It could be said that one ca not expect to be so lucky to find such pioneers. And it may be right. However, it is possible to increase the odds considerably, using the "law of the big numbers", a simple statistical fact.

- You will not find important exceptions among a few hundred families, but you will among thousands. You will not find any, if you are not looking.
- Finding something extraordinary among thousands requires a systematic search. Therefore:
 - (1) you need to know what you are looking for (defined in the Framework of Contents) and
 - (2) you need an instrument capable of finding "the best", such as the ones proposed by Raymi.
 - (3) Do not rely on one instrument to find those great exceptions. Devoted field staff found Mr. Juan Patsi and Mr. Flores, not the contests.

Moreover, a complete and perfect technique is not required. Do not think that the families Patsi and Flores had such ideal proposals. What they had was good enough for their particular situation. However, people could combine different elements of both, and innovate,

to adjust to their own conditions. That is what Participatory Development of knowledge and know-how is about, which should be conducted completely by the farmers themselves.

(62.)

**Collective Capacity Development
Participatory Development of Technology (PDT)**

Raymi, in its design, uses collective capacity development. Farmers play the main role in developing innovations, experimentation of alternatives and in spreading their results (the project only provides motivators).

The farmers generally develop alternatives with little dependency on external inputs (including knowledge from experts) creating their versions of sustainable agriculture. Consequently, collective capacity development results in "LEISA" (*Low External Inputs Sustainable Agriculture*).

(4) Only contents tested in real-life will spread among the population. "Learning from the best" implies that only technologies, that demonstrated their value with a successful family, will spread to others. These families may have integrated modern and traditional technologies, including what may have originated from scientific research, from NGO's, extensionists, etc. Proposals that were never adopted by any farmer are automatically left out.

In other words, "learning from the best" makes it possible that modern and traditional knowledge combine.

This is the answer to those who suppose that "learning from the best" is a romantic notion, passionate about everything traditional, while rejecting whatever modern influence there may be. This is not what Raymi proposes. What is rejected, straight away, is what could not prove to be of any use within the realities of successful families.

The only principle in selecting technology is "is it any good". Its origins do not matter.

In summary:

Knowledge management and the closely related cognitive approach:

- Can speed up the process of change within the context of a deteriorating environment and change-resisting institutional realities such as extremely poor rural areas;
- Can result in empowerment of the population as they gain control over their own resources;
- Are very effective in intercultural settings, with a rapidly deteriorating resource base;
- Allow technical staff to embark on issues, which are beyond their competence (as they can rely on the competence of the best, found among a very large population);
- Only those issues that have proved and demonstrated to give the best results will be spread, integrating traditional and modern technology.

All this makes knowledge management and the cognitive approach quite effective and efficient, and should therefore be used (until something better comes along).

(63.)

“It costs, but it works”

Mrs. Apaza: “Yes, it costs some effort to make these infiltration ditches, these “*tacanas*” (terraces), but it is useful, for the sheep. Now we can have Dutch cows. We need the fodder, Don’t you see? That’s why”. (Community of Toloma, Aroma, La Paz, Bolivia)

Mrs. Hilda Quispe Mamani: “It is a lot of work, but it is the right thing to do”. (Community of Pujravi, Aroma, La Paz).

Mrs. Felomenia Guarachi: “A lot of work it is... but it is necessary, it is for the future”. (Community of Alto Putuni, Pacajes, La Paz).

Mrs. Elsabeta de Mamani: “Yes, its so much work... But it gives us good results. That’s what it looks like; it gives good results. Because before it was completely bare, there was nothing for the sheep, or for the llamas, or for the cows. Nothing. And now, we planted grass and it is still a bit green”. (Community of Collana Tiji, Pacajes, La Paz) ⁽⁶¹⁾

Mrs. Wilma Iliz Hermoza de Rochacc: “Everything got better, I have terraces, alfalfas, a stable” ...”before all this, my husband worked away from home. Now he just works here” ... “We will make terraces on all this area” (Andahuaylas, Peru).

Participants of Raymi in Bolivia (PAC-II) and Peru (MARENASS)



Capacity development, the key instrument

Investing in *development* of the poor is an act of justice, but it is also an act of great responsibility. Reclamation of nature is also an act of justice, in this case, with future generations. Both processes must be achieved in a responsible way, that is, in the most efficient and effective manner. **Capacity development** is the key instrument in this endeavour (See Text Box ttr: “The key instrument for development”).

⁶¹ Van Turnhout, 1994.

(64.)

Capacity Development: the key instrument for development

Development is understood as a steady and endogenous improvement of living conditions of a group of people. Consequently, development is the *process of growth of people's capacities to mould their future*.

These **capacities** depend on:

- their *natural resources*;
- their productive *infrastructure*;
- their *technological know-how* and *capacity to learn and generate new knowledge*;
- the quality of their organizations (their social resources).

The reclamation and improvement of *natural resources* depend mostly on the will of the population to recover the potential of their degraded resources, that is, on their technological know-how.

The above implies that the primary objectives in development are: increase and strengthen the *technological know-how* of the population and to *stimulate the quality of the organization*.

Capacity development is the process through which individuals and their organizations acquire and develop knowledge, know-how and skills, which translates in possessing new capacities. This enables (groups of) people to improve their performance and unfold their potential. It is a process of internal growth and development.

However, the effort of capacity development must be oriented toward concrete and tangible results.

A major issue of capacity building is "spreading innovations". This deserves special attention because the project should create the conditions to accelerate adoption (Paragraph 3.3). Three key issues of capacity development are discussed in Chapter 5.



3.3. Spreading information and innovations among the population

One way or another, capacity development efforts require all kinds of (complex) information to spread among the population, particularly concerning innovations. In fact, this is a key aspect. It is not just about "information" getting somewhere: **lasting changes** should be achieved, efficiently and effectively.

Adoption, targets and creating an "explosion" in diffusion

What exactly are we talking about when we speak about adoption of innovations? In contrast to other methodologies, Raymi does not aim at particular innovations. Instead, people can and are expected to develop their own. What is required however is that people dominate the issues identified in the Framework of Contents, one way or another. There is no reason to promote adoption of a particular "good practice".

Some training programmes aim at 10% or less adoption of one or another issue. In this paragraph we explain why targets on adoption must be defined much higher. In a nutshell: sustainability must be achieved. This paragraph looks into some details of the adoption and diffusion processes. It is found that "natural" diffusion is quite fast once the "critical mass" of adoption is reached (around 30%); at that point, the diffusion process "explodes", so to speak. In this paragraph we try and determine the conditions required to create such an explosion and find that *the project can create them*.

Innovation and adoption

Many farmers experiment, out of curiosity or need. They find new ideas when migrating or travelling, looking around and learning new techniques. They may also learn something from a neighbour or a project in their territory. They may incorporate the innovation in their own enterprise, changing old practices for something new (assimilation, accommodation).

(65.)

Experiments in Bolivia

Mr. Claudio Molla, Kamana from Pacajes (La Paz, Bolivia) explains: "in my area, alfalfa grows up to 35 centimetre". He adds: I did a small experiment close to my house; it's there and it worked. Next year I will put more, from December." ... "We also harvested seeds of *chillihua*, *chojilla*, and *ayahuara*." ... "We didn't used to plant this, because we used to have enough pasture". But, "now we have planted that grass. I got that idea from PAC-II. With this, the animals improved 10%. Next year it will be more, maybe 20 or 25%".

Mr. Huarcaya of the Association Condoriri (Tumarapi, Pacajes, La Paz, Bolivia) in association with others, bought a low lift pump and made a shallow well. He tried to grow onions for the market. He says: We should organize ourselves better, we're just starting, only two years. We will be better in a few years. The garlic will also get a better prize. We don't know, it's only an experiment. Just an experiment".

(PAC-II. In: Wiener, 1994)

<p>(66.)</p> 	
<p>"It's only an experiment. Just an experiment"</p> <p>Mr. Huarcaya, Tumarapi, Pacajes, Bolivia. Participants of Pachamaman Urupa, PAC-II</p>	<p>"Alfalfa grows up to 35 centimetre" if it is irrigated with water from gullies which is normally lost.</p> <p>Mr. Moises Mamani from Tumarapi and Mr. Claudio Molla, from Pacajes (La Paz, Bolivia) Participants of Pachamaman Urupa, PAC-II</p>

The experiment may not give positive results, as many factors affect it. It is not easy to carry out an experiment of something completely different. Experience is required, different skills and tools, and also a bit of luck. These ingredients are all needed to get a good outcome. Consequently, the process of innovation and adoption is slow. Especially when farmers gave up hope that agriculture can provide a decent future for their children (as is the case in the realities for which Raymi is designed). Under these conditions it should surprise anyone if it were possible to speed up change, as we claim.

The process of diffusion of innovations

It is always possible that some farmer had success with an innovation. A number of conditions must be met to spread the innovation to the neighbours.

An example from the village of Mr. and Mrs. Morán Tzalám, from the community of San Lucas Chiacal (municipality of San Cristóbal Verapaz, Guatemala): The family started to apply some innovations learned from ALTERTEC in 1998. For example, to fertilize the plot with organic matter and build terraces. With these and other practices, production improved little by little:

In 1998, they planted a plot of 30 "cuerdas" with "milpa" (maize). They harvest only five quintales (about 500 lb). After that, they made "fertilizer ditches", used organic fertilizer and built terraces. Five years on, they cultivated maize on three "cuerdas" only, and harvested six quintales. In other words, **production per hectare multiplied twelve times.**

Six quintales of maize is enough to feed the family. Most of the property could therefore be planted with other crops. They planted coffee and other commercial crops on the remaining 27 "cuerdas" where they used to grow only maize. All this was made possible using the techniques of sustainable agriculture.

Four years after the first experiments, Mr. Luis Morán says: “**Only now do the neighbours notice**”... “we started out with 25 families working with ALTERTEC in this municipality. *Only eight continued with organic agriculture.* I don’t understand it.”

Another example is the spread of sprinkler irrigation in a remote village in the southern Andes (Paucartambo, Peru) where only one person applied this technology, but nobody copied his example for many years. (See Figure 4: “Adoption and diffusion of sprinkler irrigation in Paucartambo”)

The response of the neighbours, or rather the lack of it, may result from their assumptions. For example, they may believe that the fields of their innovative neighbour are different, or that (s)he received “special aid”, as may be the case of “demonstration plots”. The introduction of sustainable agriculture often receives the remark that it is “too much work”, that there is “no time”, as the neighbours of the Morán family said.

Therefore, the **first condition** to make learning possible is to *overcome these assumptions* so people can open up to new ideas. And that is not at all easy. As Claude Bernard said: *-it is what we think we know already* that often prevents us from learning.

Additional innovations

It is also very likely that *additional innovations* are needed before the example can spread to others. This was the case in remote Paucartambo (Peru), with the diffusion of sprinkler irrigation. The neighbours of Mr. Raúl Figueroa Yábar –owner of the hacienda Mollamarca– could not afford the expensive equipment that appeared to be necessary. Sprinkler irrigation started to interest many, when someone invented the use of plastic hoses and pipes and could assemble simple sprinklers at home with bits of pipe and glue. The application of an innovation by a large percentage of the population requires access to a range of solutions. Such variety is an essential condition. People may have to create the additional innovations themselves to adapt to their many particular conditions.

The benefit of many innovations takes a long time to become evident. One needs to be *persistent* to enjoy them, as in case of Mr. and Mrs. Morán from San Lucas Chiacal: at first there is only work and hardly any gain as production slowly increases. Production increase only became evident after three years. After four, it had become clear that it had improved, but also that the fields with organic fertilizer maintained their fertility. As Mr. Morán said: “they don’t stop producing”.

The first phase of introduction of an innovation is very vulnerable, as the above illustrates. The innovating family may migrate to the city, or stop applying the novelty for some reason, such as the unfavourable opinions of their neighbours. Very few innovations survive this first phase.

The innovation may come from a project, or be the inspiration of a farmer. But it is necessary that a group of people use it, to be sustained. It can be lost if only one family utilises it. We call this condition for *sustaining an innovation in a population*: the **group requirement**. It manifests itself in several ways:

- It is possible that an innovation depends on external factors, as for example, the existence of retailers selling the required inputs. These retailers will only start selling them if there is demand. But such a demand cannot develop if there are no retailers selling them.
- Another illustration of the *group requirement* can be found, for example, where a second irrigated crop is introduced. Those who want to try will need to clean the canal network, from the intake in the river all the way down to their field, as the canals get obstructed during the rainy season. One family cannot afford such a big effort on their own. A considerable number of families need to agree on trying for a second crop.

There are still other factors that influence the diffusion of innovations:

- **The risk of starting.** A proposal may be valid, but its first application is risky, but must yield positive results. If not, introduction of the innovation will be hampered and be very difficult in the following years. An example is the “demonstration plot”. This is a well-known methodology, popular with many projects. However, it is risky: the experiments must have very convincing results to obtain a positive demonstrative effect.
- **Complexity** is another factor influencing adoption. Adoption is easier if the innovation is simple. Complex proposals will run into major obstacles. The novelty, especially the complex ones, inhibits.

These and many other reasons make adoption and diffusion a slow and difficult process.

<p>(67.)</p> <p style="text-align: center;">“Organic Contest”</p> <p>Mrs. Emma Carlota Cha Ichich. President Livestock Committee “APAP” Tamahú, Alto Verapaz, Guatemala.</p> <p style="text-align: right;">March 21, 2002.</p> <p>In my opinion, the organic agriculture contest was a good experience for us and has given us the capacities to care for our Mother Earth, because we learned so much with this.</p> <p>This gave me the opportunity to learn how to do soil conservation and horticulture. I am working now on a farm, where my neighbours and friends are learning to work the earth, seeing what I do. That has been my satisfaction, because now they can grow their own vegetables.</p> <p>I learned so many things about soil conservation. To avoid erosions, it is necessary to care for our Mother Earth.</p> <p style="text-align: right;">Participant of a contest of ALA 94/89, Alto Verapaz, Guatemala</p>
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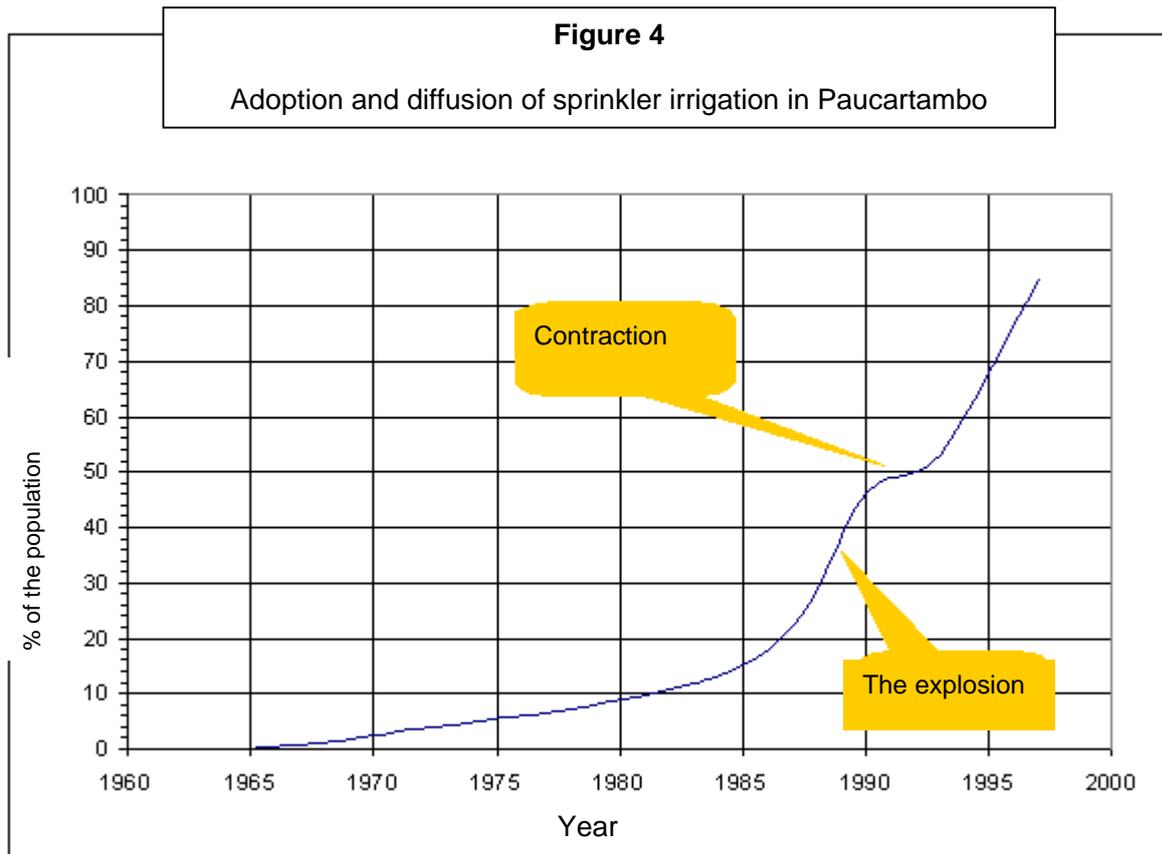
The nature of natural diffusion

Many years can go by after someone adopted an innovation and until another one tries. In this context it is interesting to note that “resistance to change” is a universal phenomenon:

“Variables which are related to the adoption index have been investigated in such diverse areas as agriculture in industrialized and less industrialized countries, education, health services, and consumer behaviour. Remarkably, similar results have

been found in all of these fields. *It appears to make little difference whether you are an American doctor or an Indian farmer.*"⁽⁶²⁾.

The example of introduction of sprinkler irrigation in the remote Paucartambo shows that 25 years were needed, from its first appearance in 1965, until it became rather common (see Figure 4: "Adoption and diffusion of sprinkler irrigation in Paucartambo"). There is a steady increase in adoption of sprinkler irrigation from 1988 onwards, that is, after about 30% of the population was using this technique.



Elaborated with data from: IMA-Cusco and Gonzáles Ríos, 2000

The diffusion of an innovation appears to be a logarithmic process. This is usual in natural diffusion process and applies to issues as dissimilar as the spread of diseases in a population, the diffusion of some fad such as tattoos, or the progress of a forest fire.

⁶² Van den Ban; 100.



(68.)

“tattoos spread like forest fires...”

The process of diffusion and adoption can be simulated with mathematical models. This may provide new understanding about the mechanisms at work and the possibilities to improve effectiveness and efficiency of the processes of change. ⁽⁶³⁾.

(69.)

Adoption of what?

In contrast to other methodologies, Raymi does not aim at spreading particular innovations. Instead, people can and are expected to develop their own. What is required however, is that the issues identified in the Framework of Contents are applied, one-way or another. For example, fertility of the cultivable area must be maintained. Some may use a particular crop rotation; others may prefer other solutions, including the use of (organic) fertilizer. There is no reason to only promote adoption of a singular or particular “good practice”.

WARNING: There is a danger in measuring adoption of innovations, as the indicator may engage us, believing that something is achieved when “good practices” were applied. What should in fact be measured is the growth of people’s capacities. But, how can one define and measure such growth?

At first, it costs much effort to light the fire. The first little flame burns up a dry leaf and extinguishes if it finds nothing else to catch on. The fire will get bigger if it does find more leaves. The initial problems will evaporate from the heat of the blaze and the fire will just keep on growing. Once it has reached a certain size, the fire will grow on its own and at a high speed.

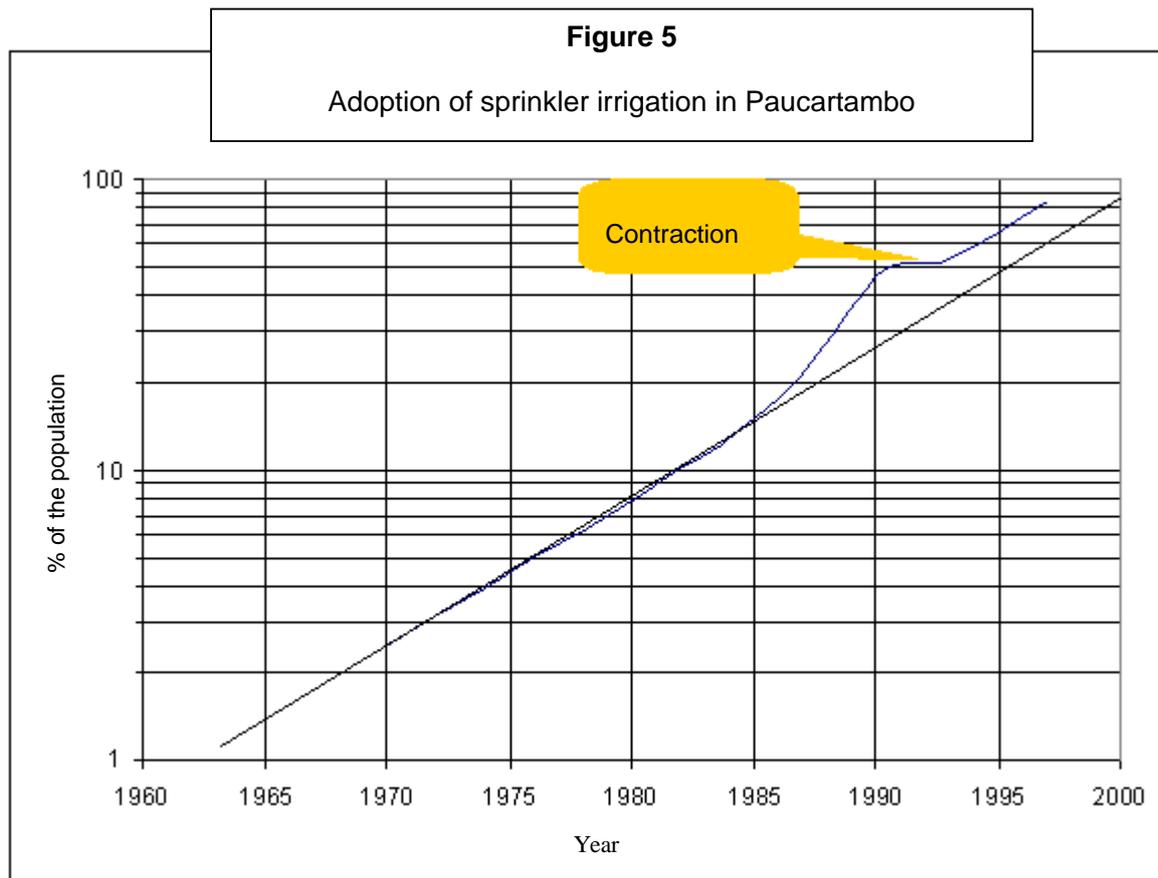
Something similar happens with the spread of an innovation. The conditions for rapid propagation do not exist at the beginning of the process. These conditions become more favourable as the innovations spreads to more people, and:

- Detailed information about the innovation becomes better known;
- The understanding of the processes at work become general knowledge and get better;
- Motivation to experiment increase, seeing more and more people benefit from the innovation;
- The group requirement is met;
- And finally, it is not just the innovation, which develops: an adequate technological tradition evolves around it.

⁶³ See: Annex 10 of: Van Immerzeel and Cabero, 2003, “¿How to accelerate adoption of innovations? A mathematical model analysis”.

The conditions for diffusionism can become so favourable that the process “*explodes*”, as can be seen in Figure 4, from a point where about 30% of the population adopted the innovation.

Figure 4 can also be drawn on a logarithmic scale (See Figure 5). This should result in a straight line, if the process of diffusion is “natural” and logarithmic.



Elaborated with data from: IMA-Cusco and Gonzáles Ríos, 2000

However, in this case, there is a bump in the straight line, starting in 1982. In that year, some institutions set out to promote the diffusion of sprinkler irrigation, among them the Agrarian Bank of Peru, a state bank, giving out cheap loans for the equipment. ⁽⁶⁴⁾ The bank closed in 1992. It can be seen that the level of adoption fell back close to where it would have been if there were no intervention. We call this “*contraction*”.

From that point on, there is a difference with the straight line of about four years (See Figure 5). It is very likely that the diffusion would have followed that line if nobody had promoted sprinkler irrigation. In other words, just waiting for four years would have resulted in the same

⁶⁴ Gonzáles Ríos; 2000.

level of adoption, as it is now with so much aid. All the effort and investments of the institutions to promote the innovation only resulted in this small difference.

The previous graphs show that the efforts to stimulate adoption certainly had some effect, but it is only a small one as there is little difference from natural diffusion. This seems to suggest that a programme aimed at the introduction of innovations, should achieve the initial introduction of the issue and leave the rest to the natural diffusion process.

In other words, it is “only” necessary to get to a certain point and from there on, the “heat of the blaze” will take care of the propagation, as the diffusion at that point “*explodes*”. There is no need for any programme from that point on and one can be sure that the process of diffusion has become sustainable as all conditions for rapid diffusions are met.

The explosion occurs where about 30% of the population adopt the innovation, because from that point onward, there is a steady and rapid growth. That is, the innovation is “*anchored*” securely in the population when 30% applies it. We call this the **critical mass** ⁽⁶⁵⁾.

“30%” is arbitrary. You could say that it should be 31, 20 or maybe 35% of the population. This kind of indicators cannot be estimated with mathematical precision.

(70.)

Three years is enough...

“The sequence of three years appears to be sufficient and reasonable: one year to mobilize the most resolute and for the introduction of Raymi, a second year to spread the contents, and a third year to consolidate the results.” ... “The investment of the families, especially in labour, produces significant benefits from the very first year. It is therefore reasonable to suppose that from the third year onward, a net gain is produced, and the activities related to, and stimulated with the contests will have acquired their own momentum.”

(PAC-II. In: Wiener, 1994.⁶⁶)

(71.)

“They are greener now”

–On cultivating a second crop–

President of Pichura, Canchis, Cusco, Peru

“This year 1990, for the first time we have seen our fields and really, they are greener now. What was always red after the harvest, and now seeing them green... Our hearts rejoice.”

“Let’s hope that next year during this time, our fields will be even greener. We can get twice the harvest if we work as we did this time. We would be healthier, and we wouldn’t be buying from the markets.”

Let’s hope *compañeros*, by next year, that we see green what little land we have. Let’s work *compañeros*, and that our hearts will be with the Earth, with our Pachamama (Mother Earth)”

Participating community with Pachamama Raymi

(PRODERM. Valderrama and Escalante. In: Van Immerzeel and Núñez del Prado, 1994)

⁶⁵ We borrow this term from nuclear science. It indicates the minimum mass required to sustain a chain reaction.

⁶⁶ Wiener’s evaluation of Raymi in PAC-II was to establish the economic viability of the methodology, in preparation of the IFAD project MARENASS, in Peru.

Conditions to accelerate adoption

Accelerating adoption is necessary, not only because the project is temporary, but mostly because reclamation of the resource base must be much faster than the speed of degradation.

(72.)

Speed is needed

Population growth is an important factor in the environmental problem. One can therefore take this growth as a first rough indicator of the speed of degradation and use it for comparison with the speed of change in resource management:

suppose that within three years 100 families adopted sustainable agriculture, in a universe of 10,000. Within that period, the number of families will have grown with another 600, if population growth is "only" 2%.

The investment in promoting sustainable agriculture could be lost if only a small percentage of the population applies it (less than the critical mass). People may fall back to their old ways as long as that percentage is low, due to *contraction*.

- Families could not overcome the first stage of experiments and the innovation did not produce benefits yet,
- Group requirements are not fulfilled (see previous paragraph).

The project should therefore achieve that a large percentage of the population (around 30%) adopt a sustainable form of agriculture before its end ⁽⁶⁷⁾.

The questions are therefore:

- How can the generation and diffusion of innovations, techniques, practices, etc. be accelerated?
- How can the conditions to get to the point of *explosion* be **created**?

The answers should be found in the conditions needed for the explosion, as stated above. These are:

- People abandon the assumptions they may have had about innovations. This is the first condition to make learning possible.
- A wide range of different solutions are available, to correspond to the many different conditions of the people.
- There is enough time so advantages of an innovation become evident.
- There is time to overcome the **risk of starting** something novel.
- There is understanding of the underlying principles of the innovations, especially of the more complex ones.

Evidently, those families already applying the innovations, meet all these conditions. Consequently, they already possess a lot of very valuable information, required for spreading them.

⁶⁷ We recommend $30 + 20 = 50\%$: 30% is the critical mass, and 20% is needed to compensate for contraction. This can and should be achieved within the duration of the project (3-4 years).

For example, the Morán Tzalám family of San Lucas Chiacal (San Cristóbal Verapaz, Guatemala), saw that they produced more maize and that their fields “don’t stop producing”, if a number of measures are taken (organic fertilizers, terracing, etc.). This family has the know-how of a great many innovations and knows of their advantages and requirements.

The conditions to achieve the *explosion* would be fulfilled if this knowledge, these notions and concepts, the ability to experiment with success, in a word, these *capacities*, could be spread among the population. In other words: knowledge –capacities- must be socialized.

The first experiments must be successful. Information about the innovations should therefore be very detailed and reliable. The more detailed the better, as each gap can result in some mistake and put results in jeopardy. The required detail is so great, that only a person with direct experience possesses it. That detail, evidently, includes tacit knowledge.

Inconsistent applications of some contents, techniques, and the resulting failure, will lead to frustrations and can hamper progress in further development and further adoption of innovations. Success with experiments in new contents is essential for the desire to continue adopting and applying innovations.

The project can decisively influence all ingredients mentioned above, needed for the *explosion*, for example through exchanges, visits, radio, folders, in which pioneering families can show the best they have. People should see it, and the pioneers should have the opportunities to explain **their understanding and experience** and all details of what, and how, and why, of reclamation. All of it explained and demonstrated by the very people who use these innovations themselves, on their own farm. Socializing all this knowledge is key to diffusion. ***Nothing succeeds like success!***

All this implies that much **interaction** is needed, **exchange, experience sharing, mutual learning**. This is a major task for the project.

	 <p>ARAUCANÍA TIERRA VIVA</p>	 <p>GOBIERNO DE CHILE</p>
		
<p>Mrs. María Sepúlveda receiving farmers arriving at her farm</p>		
<p>(73.) First prize winner in the contest “Who cares best for the Earth”, Mrs. María Sepúlveda de PENCHULEF, from Peñeipil, Galvarino, IX Region, Chile, January 2005: “I study the plants and the soil. I write down what I do and how the plants react to it”. “I enjoy it when I can share the little that I know with others” The Programme Araucanía Tierra Viva is financed by the EU and the Government of Chile</p>		

The project also can and should influence directly in the motivation of the population, so that everyone is interested in experimenting, and looking actively to acquire the required information needed to obtain the best possible results.

The elements needed to create an explosion in adoption of innovations

As a consequence of the above mentioned considerations: the three fundamental elements to create the conditions for an explosion in diffusion of innovations are:

- Socialize, “connect” people’s capacities;
- Increase understanding, and;
- Motivate processes of local experimentation, carried out totally by the farmers themselves.

This is the translation in practical terms, of the cognitive approach. The target is “anchoring” a host of innovations in the population, creating the “explosion” (68). The most important innovation to be anchored is self-confidence people get from success, resulting from their efforts.

⁶⁸ We explain in detail how the project can create these conditions in: “Field Manual: learning from the best”.

(74.)

Raymi is a new paradigm

Raymi did not evolve from something that existed before; it is not a product of an evolution. It represents a rupture. It is a new paradigm. This is an essential aspect. The old paradigm of development concentrated on teaching, on transfer of physical and financial resources, accompanied by a *transfer* of knowledge and modern technology. Raymi concentrates on learning. The old proposed a one-directional flow (of information), Raymi proposes interconnected learning, a net, holistic. The old supported the single solution, for uniformity, Raymi the creation of multitudes of solutions, for diversity, learning and contextual knowledge.

Javier Cabero, Julio 2005

(75.)

Forget the mistrust and the old ways

In fact, more than learning, the staff of the projects using Raymi, needed to forget, to “un-learn”, the prejudice, the old format, to be able to discover the potential revealed by the capacities of the local actors.

First, the mistrust, with which the population was always regarded, had to be forgotten. Give money to farmers? Cash prizes in contests? It was against all what had been done so far! This would corrupt the leaders; it would incite alcoholism of the winners! Contests will divide the organizations!

The opposite happened. Families and communities mobilized and invested in labour, kind, cash, and time, because they wanted to *learn*. They invested three, four times what the projects using Raymi invested. The winners had invested ten times more than the prize they received. (these figures were from MARENASS. Other experience show similar figures, e.g. SID-Bolivia, and PAC-II)

From: De Zutter 2004, Key 1

(76.)

The other way around...

Earlier on in the project, training was done in relation to the infrastructure; to learn how to use it, maintain it. Training was seen as consolidation of development. With Raymi, this situation is inverted. Infrastructure is built as a function of the performance of the farmers. The new strategy sees the infrastructure as consolidation of development.

PAC-II. Alain Peigné, 1993

(77.)

No other external input than prizes

Projects using Raymi were able to achieve that more than 50% of the population changed management practices, *recovering their resource base and their future*. These results were obtained, based on the investment of the people themselves, with no other external (project) input than prizes for the best. These projects were not only effective, they were also efficient as they achieved all this within four years or less, with less than one staff member per 1000 families.

IFAD Executive summary of the Pre-terminal evaluation mission of MARENASS, April 2002

(78.)

Sport and prizes

Raymi takes competition and sports into the productive sphere, which is using a universal human trait to great advantage of everyone. This collective energy is usually directed in sports towards hardly relevant issues.

About rewards: one can say that all human interaction is based on a system of rewards and punishment. Punishment is prevalent in the poorest areas and rewards are not, due to a persistent, systematic and institutionalised contempt for poverty and the poor. The poor are stigmatised as “ignorant” and “incapable”.

Juan Núñez del Prado, in “Comments on the draft” August 2005

(79.)

Contests, an instrument for “learning by doing”

From the first experience in PRODERM (1988), the contests became the best-known instrument used by the projects, which made it possible to obtain great results. The contests allow:

- (1) Finding the best among very large numbers of families and communities in a systematic way, with little effort from the project, as the contests are organized by the population;
- (2) Monitoring and Evaluation (M&E) of performance of –and by- all participating families (often near 100%) and organizations;
- (3) The introduction of competition and competitiveness;
- (4) Speeding up of adoption of innovations;
- (5) Mobilization of local resources;
- (6) Promotion of communal activities and cohesion among the families;
- (7) Capitalize families and local economies with well-earned cash (from the prizes).

However, as any other instrument, the contests can be used in different ways (and they are). For example, aspects (1) –Finding the Best- and (2) –M&E- are omitted in some projects using Raymi, though they are essential in capacity development and are a basic aspect of contests. ⁽⁶⁹⁾

⁶⁹ See De Zutter, 2004, p.121.

(80.)

The budget may not be available yet...

Raymi is resilient and can produce good results under demanding situations, for example, when budget flows are irregular, as often happens. In such cases, projects using conventional methodologies grind to a halt. Contests however, can still be organized, as the bulk of the budget (for the prizes) is needed only when prizes are awarded, which typically occurs six months after the beginning of the contest. And if contests continue, so do Monitoring and Evaluation (which is little more than evaluation of results by the referees).

(81.)

Cash or Kind

There has been much debate about the nature of the prizes. PRODERM was the first to use contests in rural development, and awarded sizeable cash prizes (the first prize would be as much as the monthly wage of an extensionist.). Cash is usually the best motivator money can "buy". Presently, IFAD projects in Bolivia and Peru and the EU project in Chile (Araucanía Tierra Viva) award cash prizes to communities and families.

The amounts for prizes are usually not so big, but much appreciated in the cash choked local economies. Communal cash prizes are sometimes used in negotiations with other agencies, to finance some infrastructure. Also, cash prizes were used to start small credit schemes within the communities, at people's own initiative.

However, projects such as PAC-II, found it difficult to hand out cash to farmers and farmer organizations. Instead, the prizes came as small infrastructure, tools, alfalfa seed, etc. The winners could pick from a limited number of options. Awarding prizes in kind is more hassle for the project, increasing administrative costs, involving transportation, storage, etc. Besides, prizes in kind are usually less motivating than cash.



Capacity development is for improving the lives of others and for leaving your community and world better than you found it.
Adapted from Marian Edelman

Chapter 4

Raymi, “Learning from the best”

Some of the main concepts and considerations of “Learning from the best” (Raymi) are included in the previous chapter. In this one we’ll give a brief definition of Raymi and comment on it. We’ll also highlight some key aspects:

- Raymi is simply an instrument; it is a means to an end. It maybe that Raymi received praise; however, it must be clear that using it is no guarantee that something will be accomplished. Raymi is just a tool and must accomplish certain tasks, effectively and efficiently. There should always be pressure to improve quality (efficiency + effectiveness).
- Distribution of roles. The previous paragraphs already provided some comments on distribution of roles between project and the population. This issue is a rather striking element and deserves special attention.
- Gender issues. Capacity development concerns both men and women; both can and should have the opportunity to learn and increase their contribution to development of their family and community.
- Eradicating poverty is a major goal of (rural) development. The last paragraph of this chapter will look into opportunities people have when living off seriously degraded resources.

(82.)

A definition of Raymi

A methodology to manage people’s capacities

The specific purpose of Raymi is to *multiply capacity and opportunity to learn*, improving people’s knowledge and know-how, as well as generating new ideas, knowledge and know-how, in individuals and their organizations.

The newly acquired capacities must be relevant and pertinent in the context in which people live. This requires a process of management of capacities, of people’s talents, of local knowledge and know-how.

Raymi does not pretend to teach anything, much less “transfer” technology or inputs.

The above “definition” of Raymi comprises the following key issues:

- a) **multiply capacity and opportunity to learn.** Farmers, men and women, acquire their abilities through observation, by working side by side with others (*mentoring*) and also through their own search by trial and error. The tacit knowledge flows in these activities, between generations, and neighbours, but necessarily only within a small radius.

Raymi strengthens this platform of learning and innovation by providing strong motivators; the most important ones are the succession of *contests*, between families, and between their organizations. It is easy to understand how such motivation works: those who participate in a contest want to win. They will therefore watch others and want to do better. The territory they cover in their observations is as large as the project determines. Many thousands of families can be involved in it. The project must enhance this tendency to observe and learn by providing exchange, by making public who were the winners and what they accomplished, etc, and also by providing transportation to offer many the opportunity to see these experiences, and talk with the best, etc.

Participants will *experiment* with the innovations they saw, discovered and invent. This improves their capacity to learn in a more systematic way.

Determining who the winners are, implies that the referees (representatives of the communities) must decide which practices are better under which conditions. Conditions and practices must be linked and identified. ⁽⁷⁰⁾

The spread of this new know-how, and of the names of the winning communities and families, creates a legitimate and well-earned pride in peoples' own capacities. All such processes improve the capacity to learn, and the opportunities. The project can accomplish all of this rather easily, by providing prizes, transportation and information about where to find interesting people, and by providing these people with the opportunity to share.

- b) **improving people's capacities.** All skills and techniques can be improved, and there is always something to improve as no one starts out from zero. Farmers, just like everyone else, possess capacities that allow them to survive, even under those harsh conditions found in their severely degraded communities. These capacities are their basis for *learning*. The old capacities provide the necessary linkages to anchor new ones.
- c) **generating new capacities.** This refers to the fact that, fortunately, all problems and needs have more than one solution. Creatively identifying new alternatives can lead to a breakthrough in productivity, reaching levels not obtained before. All knowledge is replaceable by something better. Change is constant.
- d) **Relevant capacities deserve priority.** Capacities are highly related to their context. There is no point in learning for the sake of learning. It should be a *means towards development*, always improving (1) effectiveness in the sense of trying to get the most out of a certain situation, and (2) efficiency: lest cost, better results. This requires prioritisation of certain areas of knowledge. The project should identify these areas of knowledge systematically and intentionally. These areas make up the "Framework of Contents" and are the ones to be addressed by the "Specific Contents", to avoid dispersion. Dispersion

⁷⁰ Each community sends representatives to the jury. The project does not –should not- form part of any jury.

would waste people's time and energy on less relevant issues. The Framework of Contents usually does not follow people's (initial) preferences.

These considerations make that Raymi constitutes a new paradigm in (rural) development (See Table 1: "Paradigms in Development").

Table 1
Paradigms in Development

	Conventional Paradigm	Raymi
Main purpose	Teaching farmers to apply pre-established techniques ("good practices")	Multiply capacity in farmers to learn and generate better and new knowledge and know-how.
Role of the population	Apply and copy what the technical staff instructs.	Experiment <i>in situ</i> , collectively and individually, to identify innovations, share and spread improvements.
Source of solutions	External, prefabricated	Local
Model of thought	Linear, entity thinking	Systemic, process thinking
Environment	Stable	Dynamic
Knowledge	"Scientific", explicit.	Socialization and externalisation of local, tacit knowledge
Main activity	Repetitive and copy	Innovation, socialization
Education Paradigm	Transfer of Technology	Significant learning through discovery; cognitive.
Empowerment	Empowerment of scientists and technical staff. Reinforcement of prejudice and stereotype of "ignorant farmer".	Empowerment of farmers, while learning to reclaim and manage their resources in a sustainable manner. Extraordinary success also empowers project staff.

(83.)

Sustainable solutions

How can development be sustainable, if "solutions" are brought in from outside, creating, or strengthening the reliance on "experts"?

Which capacities would have been strengthened in such an essential area as the capacities to solve new problems?

Evidently, a participant in a contest must know how to outdo the others. This requires *socializing information, making information accessible to all*; information about winning innovations, and about clarity of understanding reached by others, for example. Socializing information means frequent exchange between farmers, so they can see the best examples, talk and share their findings, right where it all happens, take some seed of a great species, see the right tools, learn how to handle them, and where they are sold, etc. It is also necessary to use different media: written testimonies, pictures, radio. The farmers, who manage their resources best, should tell about their experience and about how they achieved their excellent results.

It may be possible to have *mutual learning* (⁷¹), without motivators, but mutual learning isn't possible without intensive interaction, which therefore is quite central. That interaction is to be stimulated through contests and throughout the contests. *Consequently, Raymi is not just about contests, it is **competing to share**, going forward together.*

The position and role of each person in society is the result of the capacities (s)he was able to develop or build. Each person, each organization constructs its own potential for action, by acquiring capacities, generating new ones based on the existing. This is how people will be able to adapt successfully and dynamically to rapidly changing realities.



Raymi, the instrument: a means to an end

The UN Millennium Development Goals place high demands on any project. As for those goals, which are in line with the themes that illustrate Raymi in this book: Eradicate poverty, natural resources reclaimed and sustainability.

In the introduction of this book, the question is asked –can it be done? Conventional methodologies have it that “contributing to” poverty reduction and sustainability would be enough (typically without specifying how much that contribution should be). Of course, a project that eliminates poverty in some remote corner of a country, *contributes* to eradicating it in that country and the world. But the project should *eliminate* poverty in that corner.

(84.)

Getting there, or contributing...

Flying across the ocean can only be done, if there is a flying machine that will get you on the other side. A machine that “*contributes to*” getting you there, will not do the trick. *It must reach the other side.* Anything short of that is not enough.



A good example of adapting the instruments until it is capable of “getting you there” is the history of Unu Kamachiq Raymi (see paragraph 3.1), designed to introduce improvements in field irrigation. It appeared to be a success, no doubt it contributed, as many people learned the techniques. However... nobody applied the innovations, which meant that the instrument had to be improved. Field irrigation is just a detail. Eradicating poverty is a greater challenge. Getting there is vital.

“*Contributing*” to eradicate poverty in the project area, is not enough. Poverty should be eradicated. The same applies to sustainability (⁷²). *Contributing* is like the flying machine getting half way across the ocean...

⁷¹ “Mutual learning” is understood as a collective process of renovation of capacities, and includes socialization, interiorisation, exteriorisation, application and association.

⁷² Sustainability on two fronts: both ecological, and outputs of the project.

“Contributing” to eradicating poverty in the project area would imply that the combined contributions of projects X, Y and Z should eradicate it all. In that case, which one is responsible? If they all are, none is. If the combined impacts of X, Y and Z eradicates poverty in the project area, then there is no reason why one couldn’t, wouldn’t, combine XYZ, and be responsible for the results.

If a dollar a day is poverty, so is a dollar twenty.
--

Raymi is an instrument, a means to an end. These “ends” should be clearly defined, be meaningful, and the projects’ responsibilities should be unambiguously defined and assumed. The methodology used by the project should be capable to deliver. If not, it should be modified, or replaced by another one, which can get you on the other side.

Those demanding goals, purpose and outputs should be acknowledged and the *means* (one of them maybe Raymi) to reach these ends must be judged in that light. If purpose and outputs cannot be reached, the *means* shouldn’t be “adjusted” by downgrading goals, purpose and outputs and be satisfied if the project only “contributes”.

The *instrument should be adjusted* to accomplish purpose and outputs fast and cheap. To come back to the image of the flying machine and the ocean, the ocean shouldn’t be made narrower if the machine can’t get to the other side, instead the machine, the instrument, should be improved and be made faster and cheaper.

Comparison between projects provides us with valuable information (see Text Box ttr: “How fast is fast”) about present benchmarks on these issues. It also shows the order of magnitude of the difference between methodologies.

(85.)

**How fast is fast ?
How inexpensive can “fast” be ?**

Table 2 shows three bench marks for quality of projects established by DEXCEL based on comparison of the best projects identified in Peru and Bolivia.

Table 2		
Comparing projects		
Criteria	Level 5	Aprox. Level 1
% adopters post project	> 30%	20%
Years of presence	< 4	10
Staff requirement	< 50	1,200

“% adopters post project” is based on all families within the project area.

“Years of presence” refers to the number of years needed to surpass the essential Framework of Contents. The **Staff requirement** is expressed in person-month per 1000 families, considering all families within the project area. “Staff requirement” is a first indication of the costs involved and can therefore be used to roughly compare project costs.

Table 2 shows that Level 1 requires about **24 times** more staff than Level 5.

(73)

Comparison between projects, as in Text Box ttr (How fast is fast”) provides interesting insight. For example, it was found that projects that only “contribute” (at best) to eradicating poverty and to sustainability typically perceive the population as a problem. Instead, projects of Level 5 (see Table 2) are capable of eradicating poverty and perceive the population as part of the solution, as a major resource for development. Invariably, such projects used Raymi.



Distribution of roles

Any efficient methodology for development should make maximum use of all available resources, which are:

- The projects own resources: money, time, methodologies, know-how, plus
- The resources of the population: knowledge, know-how, in a word, their capacities: their cultural wealth, including a variety of resource management techniques, social organization, creativity and imagination.

In other words, the population forms part of the solution. Consequently, the projects’ resources *plus* the ones of the population should be mobilized for development.

The population is often regarded as being part of the problem: their vision of the future is short-term; their organizations are weak, etc. However, it is possible and vital to take a look

⁷³ Data are taken from the DEXCEL Quality Certification Programme.

from a different angle to visualize the *resources* of the population. Any methodology for development should consider these resources and figure out how these can *contribute to people's own development*, which is what development is all about. And if people can contribute, involving more would mean to have more resources available.

These considerations define the roles of the project to a very large extent. The first question is therefore: **How can the population be mobilized for their own development?** What are the *mobilization factors*? Probably the most important one is the improvement of family income.

The population is part of the solution, not the problem
--

According to the above, the following five items define the roles of the project:

- (1) Identify systematically, by system analysis, the "Framework of Contents", which are essential issues, the guidelines to raise the families' income. This way, people can be oriented towards a vital mobilization factor.

The Framework of Contents directs attention towards:

- (2) The collective development of capacities, based on those families that possess the best specific know-how and other capacities to manage certain resources; these are the so-called **pioneering families**. They possess and generate the "**Specific Contents**".
- (3) Finding the pioneering families is therefore imperative.

To generate more and better Specific Contents, it is essential to:

- (4) Facilitate *exchange* and "*mutual learning*" between *pioneering families* and the rest of the population.
And
- (5) Provide *motivators* for learning, generation, application and improving Specific Contents.

The exchange (plus motivators) will ensure that all families of the community will start experimenting and innovating. The few pioneering families will therefore no longer be unique after some time. That is why it is necessary to continue to look for new pioneering families, which possess new and better Specific Contents. These families must be found, and the process continues. Generation of Specific Contents must be continuous and cumulative, but not repetitive; there will always be new and better solutions, as well as new and more complex problems to be solved.

The key to mobilizing the population is "**motivation**". Who gets inspired without motive? The population must be highly motivated to assume at least the most essential roles of an effective and efficient development programme. The essential roles of the population in a development programme, are:

- Search for solutions that satisfy in the best possible way, their felt needs and wishes.
- Experiment with, and create new solutions.

We would like to remind you of this simple logic: the more people involved in searching, developing and experimenting, the more likely it is to find valuable Specific Contents. An example:

PAC-II, European Union project in the Bolivian highlands of La Paz, found that only two families knew how to reclaim the natural rangelands under the extreme climatic conditions (4000 meter -12000 feet high- with only about 300 mm of erratic rain annually). That is only **two families in a rural population of about 15,000**. Each one of these families had original, different and valuable solutions for different conditions. One is the Flores Family (see Text Box ttr: "People have capacities to invest...").

This shows that Specific Contents may be adequate to address the possibilities of one family, but they do not necessarily fit another. A variety of different Specific Contents must be developed and found, and become available to others also. The more people involved, the greater the variety of Specific Contents to be found, exchanged, and also, the lower the cost of the project per family, and therefore, the higher the efficiency.

History shows that power is for those who generate and use their own knowledge.

José de Souza Silva

(86.)

Change of role is resisted but turns out to be positive

The role of the project's field staff changes dramatically when Raymi is adopted. Juan Carlos Soria, co-Team Leader PAC-II (Patacamaya, Bolivia), remembers:

"Not all extensionists could adapt to the change, or to their new functions, in spite of the fact that many had a background as Aymara farmer. There was opposition; they felt humiliated when an *Unu Kamayoq* ⁽⁷⁴⁾ came to teach field irrigation techniques."

"The most capable extensionists quickly understood their new role and participated to introduce *Pachamaman Urupa* (Raymi) and started to find those special pioneering families. They found that these people knew things that were unknown elsewhere, not even in the agricultural research stations of Bolivia."

"Many expressed their commitment to *Pachamaman Urupa* at the end of PAC and took the concepts and methodology of Raymi to other institutions, which adopted Raymi as their own methodology." ⁽⁷⁵⁾

"The change turned out to be very positive for the extensionists, they were no longer servants of civil engineers or collectors for the credit programme. Instead, they became facilitating agronomists, and regained the initiative in agricultural activities" ⁽⁷⁶⁾

The change was also quite positive for the field staff in another sense: they were in demand:

- When PAC-II closed, most extensionists were hired by Strategies for International Development, SID-Bolivia, for their newly acquired skills. They introduced Raymi in this NGO and continued to apply it in Bolivia, under the leadership of Abraham Borda, who later took Raymi to SID-Guatemala.
- Similarly, in Peru, MARENASS hired staff from PRODERM, already familiar with the new role Raymi requests from them, reducing the initial resistance and bringing valuable experience to the project.

⁷⁴ The *Unu Kamayoq* is a traditional field irrigation expert from Arequipa, Peru. *Unu* = water; *Kamayoq* = guide, leader.

⁷⁵ In: Bourliaud, López, De Zutter, 1997, p.63.

⁷⁶ Alain Peigné, 1993.

(87.)

The magic of redefining roles

Are these projects “*participative*”? No. *They are much more than that. What are they?* Raymi opts for the people, for strengthening the local actors, their capacities, and their relations with others. This makes it necessary to change our language and revise concepts. The usual norms no longer fits, it confuses, distracts, deceives and hinders understanding of what actually happens. Experience shows that the pre-established roles start to change due to the extraordinary development, altering all roles of all actors.

The basic actors of rural societies –families, groups and communities- are invigorated and jump out of their typical role of “beneficiaries” and emerge as proud owners of initiatives; their relations multiply and so does their capacity to propose and negotiate. This forces all actors to redefine their roles and behaviour.

During the past 20 years, efforts multiplied to redistribute the roles of the state, the private sector, and central and regional governments, inspired by ideologies, international organizations, and governments.

Projects using Raymi promote a different process, which is open, without pre-determined criteria, practice-based, learning by doing. Let’s look at it from the perspectives of the communities and the state.

From the state’s perspective and its policies: the state will and should develop the communities and families, who are the “beneficiaries” that need “strengthening”.

The projects using Raymi set out with a different outlook and as a result families and communities don’t behave as “beneficiaries” but rather as partners, with obligations and rights, and communities express pride in keeping their side of the deal. This is the result of a change in paradigm: it is not the State that develops the rural areas; instead, the people take on that role, from within.

Experience with Raymi appears to show that this process of reversal of roles is one of the greatest hopes for rural development, as long as we do not adhere to old dogmas and definitions. This is a basis of strength, vitality and sustainability, because here we find a crucial condition through which the different sectors can finally meet, understand each other better, join forces, each with its own interests, values, and culture.

(Adapted from: De Zutter, 2004, p.129-140)

(88.)

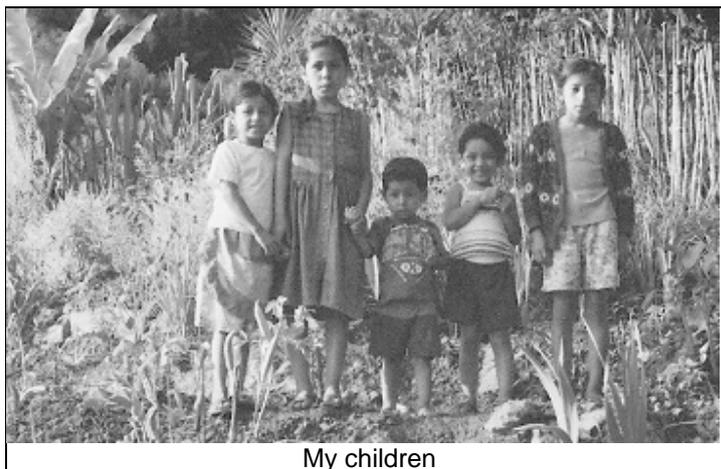
“We won the contest!”

Mrs. María Luisa Herrera

Santa Elena, San Cristóbal Verapaz, Guatemala

June 28, 2002.

In the year 2000 we participated for the first time in a contest. Our group had a vegetable garden and worked on it individually on soil conservation. We won the first prize which was a *marimba* (traditional instrument). I won the first prize for what I had done. They gave me 4000 Quetzals.



My children

I worked hard and dedicating two days a week to the vegetable garden: one day to work with the ladies of my group, teaching them everything that I know and was learning, and the other to work in my own garden, making compost and terraces for soil conservation. It is true that I could show a lot to my friends. They were happy, learning a lot in the process. We did a lot and ultimately won a prize too. That was only fair, I felt.

I remember that we started out with 60 families in this contest, but there were only 36 after some time. They were very happy with our work. My participation was important, because I was always there and never missed a day. I think that was an important factor in winning the first prize. Also one of my daughters won a second prize, because she really did so well.

When I started with this programme, I did not think I would win. What I wanted was to learn something new, how to plant, how to avoid spending so much on chemicals and to get a good harvest. That is what inspired me.

The group also did not dream of winning the *marimba*. Well! They gave it to us and said: “you do what you want to do, but you take this *marimba*, it is yours!”

Participant of a contest of ALA 94/89, Alto Verapaz, Guatemala



Raymi and Gender issues

In this book, we speak about “families” and “farmers” as the “farmer-family” is the basic economic unit in the context of rural communities.

The farmers’ production system is based on a division of work by age and gender. This implies that men and women perform specific tasks and therefore also possess the know-how needed to manage that part for which each is responsible. It is therefore only logical that capacity development must be directed to those who have the experience and responsibility for certain tasks, and that includes both men and women.

It can be seen in the communities that contact with their outside world is typically dominated, monopolized actually, by men. This happens, even when Raymi requires very little contact with the project staff.

(89.)

Positive discrimination

How can *women* profit from it all?

From the very first contest, Unu Kamachiq, in PRODERM (Cusco, Peru), participation of women was encouraged. In this case, it was announced in the “rules and regulations” that “female teams”, representing their communities, would also receive one kilo of onion seed. Several such teams participated and two out of four received the first prize.

In PAC-II, Bolivia, the rules and regulations indicated that the community would get extra points if their “*qholliri*” (traditional leader) was a woman.

MARENASS also took several measures in positive discrimination to favour women, in different ways. First, by strengthening their capacities in areas in which they were weak, for example, in their relations and contact with the outside world, and within their own community, positions of leadership and representation, etc. Secondly in strengthening their role in the economy of the family.

There is also a positive discrimination towards traditional knowledge and know-how, and their specialists: the contests favour what people can do with local materials, resources, and techniques, which are readily available and are less costly.

The gender focus of Raymi is “integrating” and not “isolationist”. Its strategy is therefore oriented to intensify participation in the capacity development processes of both men and women alike. There must be a “positive discrimination” in favour of women as it is the men who tend to come forward in contacts with projects. Women need their own “space”, which is not necessarily exclusive, to strengthen their capacity to participate.

Women play a vital role in resource management. This role refers to rangelands and livestock management, production and management of seeds and planting material of all crops. Women therefore should play a major role in the most important changes of resource management, and reclamation of degraded ones. The required changes do not involve extra

work, quite to the contrary, it usually leads to a reduction of their workload. Changes are typically based on a better understanding of what is done, and how and why present management practices need to change. For example, one of the main issues of reclamation of the extensive rangelands is rotational grazing, instead of the indiscriminate grazing which is prevalent now. It “simply” involves changes in answers to the daily question: “where do we take the animals today?”

Special contests may be organized for women about rangeland and livestock management (twice a year, and each should last six months), production, selection and storage of seeds and planting material, production of trees (firewood, fine wood and fruit bearing). Each one of these issues is key to productive, economic and environmental reclamation. They are all related to biodiversity and are essential for the sustainability of life in rural communities:

- Recovery of the very extensive natural rangelands (and with it, the possibility to produce more meat). Fodder production increases rapidly once recovery is underway, eliminating the competition between grazing and forestry. Consequently, extensive woods can be planted, assuring future income;
- Production, selection and storage of seeds and planting material of all crops (and with it, preservation and development of valuable genetic variety of all types of crops);
- Genetic quality of livestock, through control of reproduction, selective extraction, selection and exchange of breeding animals, etc.

The importance of these issues can hardly be over-estimated. Women must be considered as the major force in reclaiming resources, the environment. They are vital to sustainability.

(90.)

Women liked it

It was found that women liked the Pachamaman Urupa programme of PAC-II (Raymi), because it focused on their problems, gave them an opportunity to express and act upon their own ideas and experience. It gave them an important role, and made them proud of their identity as Aymara women.

(PAC-II. In: Van Turnhout, 1997)



(91.)

Concepción and Lidia proudly show seeds of 10 different species of native grasses, which they harvested to improve many hectares of their degraded rangeland.

(Participants of Pachamaman Urupa, PAC-II. In: Van Turnhout, 1997. Cover page.)

(92.)

**“It is more for us, the women,
Because we take care of the animals”**

Mrs. Aida Mamani de Quispe

Community of Collana Norte, Aroma, La Paz, Bolivia

58, married, with 6 children.

I have been working in the handicraft workshop for several years, and since two years work with “Pachamaman Urupa” (⁷⁷). Now we are doing well. The women work a lot, since they also work in the handicraft shop to make rugs. And the *qholliris* (⁷⁸) tell us “you also have to work with Pachamaman Urupa.” So we, the women, are also working in that programme. That’s why we have double work.

But we like it. It is our calling. From our grandfathers’ time we called it “Pachamama” (Mother Earth), so we like the name Pachamama. That’s why we thank PAC a lot that they help us, and also that they have taken *qholliris* and also *kamanas* as leaders. With them we learn a lot.

We want to learn about livestock, cows, how to raise them, how to improve them. They have also taught us how to stop the soil from washing away. The rivers would take it all away. We do this using those stones, and call it “*takanas*” (in Aymara), like steps, or terraces in Spanish. All that is Pachamaman Urupa, the *qholliris* have been teaching us.



We have learned to improve our animals and now we are improving their pastures, how to care for them and how to keep some in reserve.

This programme is meant more for us, women,

because we care for our animals. We plan where to graze them, where they are now, and will be tomorrow.

(PAC-II. In: Van Immerzeel and Cabero, 2003)

⁷⁷ “Pachamaman Urupa” (Day of Mother Earth, in Aymara, a native language in the highlands of Bolivia and Peru). It was the name of the programme of PAC-II using Raymi.

⁷⁸ “Qholliri” a traditional authority in Aymara communities, leader in a particular issue. They had an important function in the families “Pachamaman Urupa” programmes.

(93.)

Women manage rangelands

It was the women who improved grazing practices, implementing rotational grazing, inspired by Pachamaman Urupa of PAC-II.

Exalta says: “nowadays we do it different, more divisions. It is better now, because what they ate during the rainy season is already coming up now.”

Alberta (from Ancoaque) said that her grandparents used rotational grazing, but that she does it even better now. She divided the plains into eight parts, and she also has her “*canchones*” (plots). “The animals stay one month in the plains, than they go to the other side. We calculate the amount of grass to send the animals into the mountains.”

(PAC-II. In: Van Turnhout, 1997, p.73)

(94.)

“It is for the children”

Mrs. Aida Mamani de Quispe

Community of Collana Norte, Aroma, La Paz, Bolivia

58 years, married, with 6 children.

It is not for the prizes, but because we believe that we should gain knowledge ourselves, to teach our own families, because we, as farmers, we don't want to lag behind. As the years pass by, we want to learn more and more, for the well-being of our children, and to improve our animals.

In the community of San Nicolas we have seen how they irrigate, and how they make terraces on the hillside, how they control the rivers, and the gullies. We didn't know these things, there were gullies everywhere, and nobody could show us how to control and use them.

I am doing these things now. First around my house, and also over here. In a group we are doing these things also. We planted *chillihuas* (a native *Festuca* species) here, and also at home. In the mornings we work here and in the afternoons near our home. After the *chillihua* we have planted alfalfa, and we have seen how it grew big and strong.

It is very good to work with the family, for the children. We, women, don't have anywhere else to make money, not one *boliviano*. That's why we make rugs in the mornings, and in the afternoons and on holidays, we build terraces, improve our animals, we collect dung and store it carefully. Our animals don't give much cheese, as we say, as we don't have improved animals. We don't have Dutch variety of cows, not even among the group of *qholliris* ⁽⁷⁹⁾. We want to own those kind of milk cows, because they give more milk, and therefore more cheese. Our cows give very little milk now, hardly a litre and half a day.

It is enough what we have learned now, how to care for the rangelands, how to store the barley. With all that we can also have good milk cows. In the coming years we will improve more.

Before we did not put any demarcations in the rangelands. Now we have 24 separate pastures. We make a grazing plan: what are they eating today? And other months, what are they eating then? That is already reserved for them. And what they were eating during the rainy season, that is already sprouting, that is our reserve. We have been learning about all these things from the *qholliris*. So, we can improve ourselves now.

With all this, we can leave something for our children. This is all for the children. Besides, there is good food, more milk and cheese.

(PAC-II. In: Van Immerzeel and Cabero)

⁷⁹ *Qholliri* = authority over technical issues in the community, with an important role in the contests, assisting all participants.

(95.)

Confidence building, transparency and clear rules

“Gaining people’s confidence” is thought to be all-important, so they will adopt the projects’ solutions. In contrast to this vision of *using* people’s confidence, is the idea of “*having faith*” in the people. Neither option reflects what defined relations between the communities and the best projects using Raymi: it is “*sincerity*”.

Transparency, clear and explicit rules are essential to reach healthy, *sincere* relations with the communities, avoiding mutual distrust in decision making, and in financial issues.

Transparency and clear rules start with selecting good staff: public announcement of vacancies, an independent panel for selection using explicit and well-defined criteria.

Sincere relations also start with transparency of information about the projects, their characteristics, their budget, rules, from the very start of the project, including the first presentation in the project area and municipalities.

Transparency in qualifying results and budget allocation for the best results, rather than being based on requests and “needs”. This includes referees (who are representatives of the communities) qualifying contests. In other words, transparency goes both ways: the decisions of the project must be transparent, and also the ones taken by the communities about how money transferred to them (the prizes) is used.

Confidence and trust are basic criterion and must be generated through clarity and transparency of actions and decisions between project and population. The project staff should never be referee in the contests.

Families and communities will then work and compete enthusiastically as confidence contributes to generate the basic dynamics that so impress visitors of the communities.

(Adapted from: De Zutter, 2004)



Raymi and eradicating poverty

Extreme poverty can be measured by people’s consumption. People are considered to be clearly poor if their consumption is less than a dollar a day. Eradicating poverty, the paramount Millennium Development Goal, must result in a figure that is definitely greater. If a dollar a day is poverty, so is \$1,20 or \$1,50. Eradicating poverty is about an increase of at least 500%, not just for some weeks or months, but for years to come.

Are there any businesses with potentials for such a tremendous increase in net results? Are the poorest of the poor now involved in such a business? Is there enough room to accommodate the millions of people in increasing their businesses to such a degree? There had better be, otherwise eradicating poverty would not at all be possible.

Some only hoped that their projects could increase the poorest peoples' income with 20% or so, and see this as being a step in the right direction, just a small step, hoping that "other organizations would also contribute". "The combined effects should result in eradicating poverty, to some extent at least". Almost everyone agrees that "it would be a long process". A bleak picture indeed.

Experience with Raymi offers a brighter one, showing that there is a business opportunity that can multiply incomes of the poorest of the poor. Better still, they are already involved in it. Besides, there is plenty of room to accommodate millions. Some interesting examples are given in this book:

- Mr. and Mrs. Morán Tzalam, from the community of San Lucas Chiacal (in Guatemala) could increase productivity of their maize 12 times, and grow organic coffee and other commercial crops on the land they no longer need for growing maize (see paragraph 3.3).
- The Renato Morales Colil family from Chile multiplied their livestock production by five times and their crops two-fold. (See Text Box ttr)
- The Roa Muñoz Family, Sector Camaguey, Toltén, IX Region, Chile, doubled their livestock production. (See Text Box ttr)
- Mr. Valentín Huayhuasi, Qholliri (traditional leader) from Milla, Aroma, La Paz, Bolivia, calculates that he can irrigate 15 times more with the new techniques he learned. (See Text Box ttr)
- Milk production in Muñapucro multiplied by "at least four or five". (See Text Box ttr)

All these examples are about reducing recurrent costs, while reclaiming resources and increasing productivity.

(96.)

**I multiplied my livestock production by five times
And
I multiplied production of potatoes, wheat, barley and oats two-fold**

Testimony of The Renato Morales Colil family
"Lonko" (traditional leader), Community of Manuel Antonio Jaramillo
Raquincura, Pocollán, Toltén, IX Region, Chile.



Winner of the first prize in the contest "Who takes best care of the Earth!"
Programme Araucanía Tierra Viva.

January 2005

My fields were unproductive

Our grandparents left the fields unproductive. We had natural pastures and crops. Neither the pastures nor the crops produced much. I started planting "artificial" grass (clover and *ballica*) for

the first time in 1995, to improve the soil. The extensionists recommended this. They were

from PRODAC (Communal Development Programme). I have 11 hectares.

Livestock: FIVE times more

At that time I had four cows (they were not mine, only in my care). With the “artificial” grass, I could increase the number of animals. After some time I had 29. But that was too much. I have 20 now, including calves, a bull and cows. That is just about right.

I grow all their feed here. I sell the calves when they are around 150 kg and I can sell 8 per year.

Crops: TWO times more

My soil improved due to the “artificial” grass and this improved productivity of my crops. We plant potatoes, wheat and oats. When the fields were unproductive I harvested 140 bags of potatoes per hectare. Each bag weighed 70 kg. That is 10 Tons per hectare. Now I can harvest 250 bags of 80 kilos each, per hectare. **That is 20 Tons per hectare.** In other words, I doubled the production of potatoes. The same is true for the yields of wheat, barley and oats.

About half my income comes from the crops, the other half from livestock.

We have 11 hectares, and only four hectares with crops (potatoes, oats, barley and artificial grass). The rest is still natural (degraded) pastures. I want to change all natural pasture with artificial grass. Then I could have even more animals; I am improving little by little.

(Programme Araucanía Tierra Viva. In: Van Immerzeel, Cabero and Wiener, 2005)



(97.)

I DOUBLED my livestock production

Testimony of the Roa Muñoz Family
Sector Camaguey, Toltén, IX Region,
Chile.

Programme Araucanía Tierra Viva.

January 2005

We put our animals in stables in May. They stay there until Mid September when the winter is over. This is profitable. They grow better and change their fleece earlier.

My father, Don Heriberto says: "I only used to keep the skinniest cows inside during the winter. That's how I discovered how different that is from keeping the animals outside." That was in 1993.

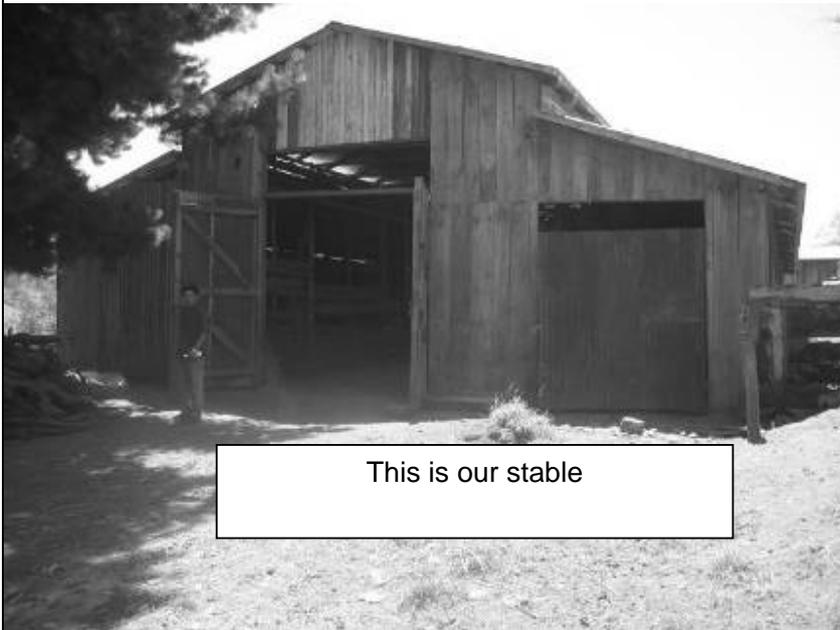
The cows that are kept inside during the winter have better parturition, because they are stronger. They also get pregnant earlier than the cows that stay outside all year round. There is almost two months difference. They also produce more milk, about 100% more. When they are outside, they produce about 5 litres per day, but when kept inside they give 10 litres per day in the winter.

My father started this new trend about ten years ago. He constructed a stable of 13 x 20 meter and 5 meter high. That was in 1993. He did this on his own, without subsidies.

This is how I use the manure

The animals produce a lot of manure when they are in the stable. I collect it all and leave it to ferment for about three months. Of course, I protect it from the rain, and I cover it with plastic, so that it gets warmer and ferments faster.

I use the compost in the pastures. I can increase the production of grass by 100%, from 300 to 600 packs per hectare (mostly clover and *ballica*). This is how my pastures can last for about 6 years. If I don't apply compost, it only lasts about 3 years.



This is our stable

I see the animals of the neighbours left to stand outside in this cold winter. I feel sorry for them, but also for the people who lose the better part of their production due to this.

I don't buy bales of hay. I produce all I need myself. My pastures with *ballica*, *ovillo* and clover produce very good fodder. I not only feed this fodder, but also give the animals a mix of oats and potatoes in the winter, twice a

day. The animals like that a lot. Now I have no space for more animals.

I can only keep the oxen, the cows and the bull inside. The young animals have to stay outside. They eat a bit of grass, and I also give them hay.

We have 30 hectares, of which 15 are rangeland, and 10 still with (degraded) natural pastures. I also have 2 hectares of land for potatoes.

(Programme Araucanía Tierra Viva. In: Van Immerzeel, Cabero and Wiener, 2005)

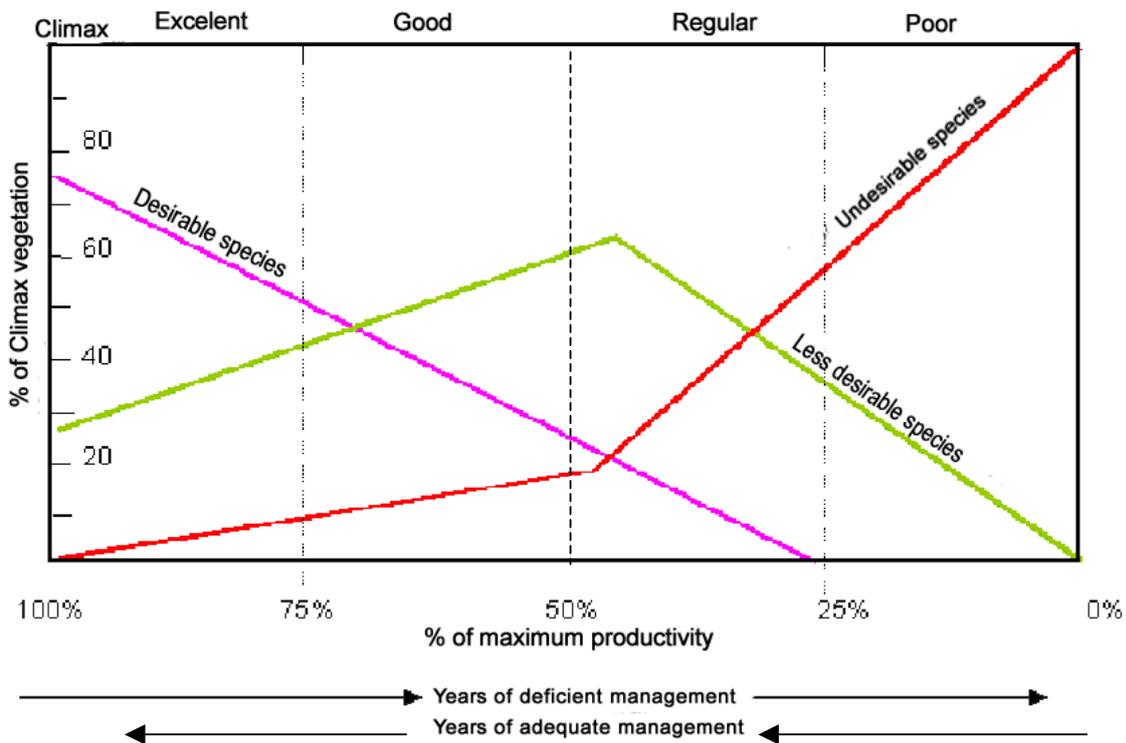
The required knowledge and know-how to achieve such improvements can often be combined, increasing the options even further:

- The examples from Chile (Text Boxes ttr and ttr) illustrate that it is possible in that region to multiply livestock production by five times, by improving pastures, and by another two times by keeping the animals inside during the winter. Productivity of average farmers can thus multiply 10 times, by combining all that knowledge, as Roa Muñoz did.

This is an important aspect of knowledge management: connecting, combining, people's capacities.

The above are just a few examples of what is shown in general terms in Figure 6. It illustrates that productivity of resources decline due to deficient management. Productivity can be close to zero after many years of such poor management (Bottom right hand corner of Figure 6)

Figure 6
Condition of Pasture and Productivity



Source: Presentation of Dr. Martín González and W.H.M. van Immerzeel, 1994, La Paz, Bolivia

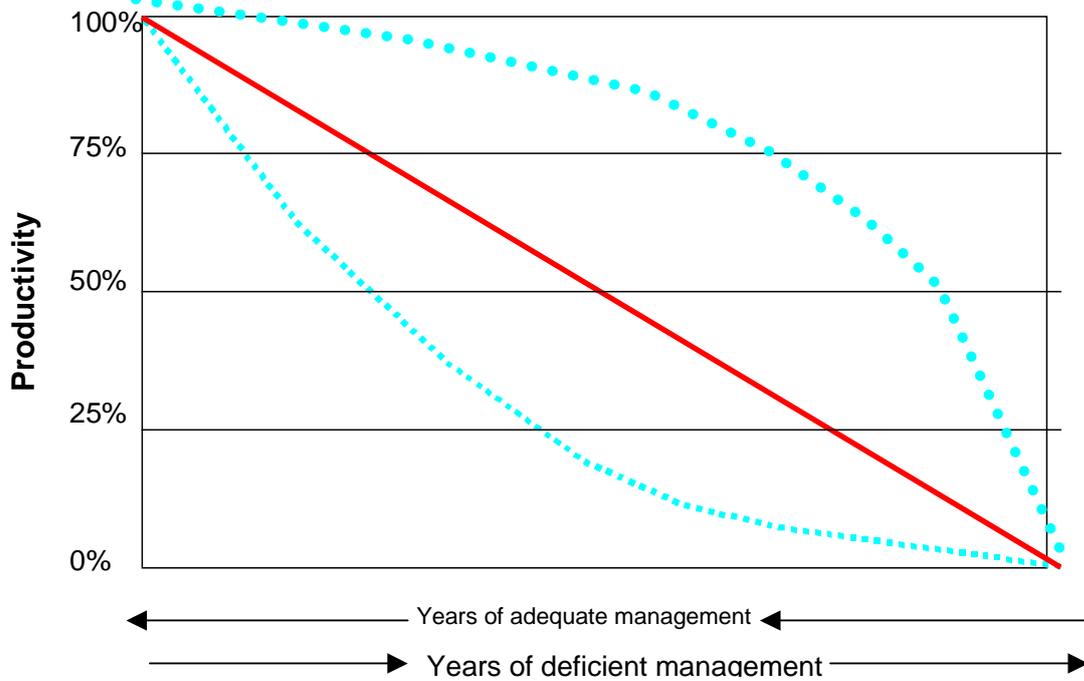
Figure 6 also shows the composition of rangelands as a function of management. After many years of deficient management, there are no plant species left which animals can feed on. There are only undesirable species.

Years of deficient management doesn't just affect rangelands; it affects all natural resources, including even the most productive irrigated, cultivated areas.

Figure 7 illustrates how productivity and quality of management are linked for natural resources in general, be it rangelands, or agricultural land. It also shows that it is possible to boost productivity in severely degraded areas, simply by changing management practices. Importantly, *much of it is not about investments*; it is about day-to-day decisions of management, such as where the animals should graze today. Will the animals sleep in stables or out in the cold? Such decisions depend on the farmer's knowledge and know-how,

and about what (s)he knows and understands of degradation and reclamation. Improving management practices may also lower the costs and labour requirements, while production increases. Recurrent costs of external inputs are also likely to decrease.

Figure 7
Percentage of Maximum Productivity in relation to management practices



Degraded landscapes have suffered decades of deficient management. Productivity in such landscapes is close to zero, as Figure 7 illustrates. By making simple changes in management practices will therefore mean that present levels can be multiplied by 10, 100, or even more, as is illustrated in the examples given above.



(98.)
Productivity and management are linked

Fodder production on these vast salt plains is zero. Planting “Kauchi”, a salt loving palatable plant, can reclaim these areas and provide excellent animal feed within about two years.

Emphasis must be placed on natural resources management, as long as there is a tendency towards degradation. The relative importance of other activities may become greater, once recovery is underway.

Can it get worse? These plains are over 4000 high, cold, dry and saline. Absolutely nothing grows on them. And still, reclaiming them is highly profitable. The farmer in the pictures is checking the growth of *Kauchi*, which he planted just recently.

Kauchi

Farmers have discovered this and are now reclaiming many hundreds of hectares in Bolivia with this wonderful plant.



...from zero productivity to grazing land, capable of producing income from next year and for generations to come...if managed properly

(PAC-II)

It is hard to predict how a change in management will reflect in improved productivity. It may follow the straight line, or one of the dotted lines in Figure 7 (“Percentage of Maximum Productivity in relation to management practices”), or some other trajectory. What matters, is that productivity can increase sharply from near zero, to many times the present value. Consequently, people’s consumption and income can increase with similar factors. And also, the number of people living of the land can increase after such a management change, reversing the migration tendency typical of desertification. (See Text Box ttr: “Patacamaya shows its potential”).

The roads to poverty and back, to desertification and back, can be simulated. This makes it possible to define the contents that can make recovery happen (the Framework of Contents).⁽⁸⁰⁾ There are two groups of simulation programmes that should be used in conjunction: ecological and economic ones. Different programmes are available. For example: WEPP⁽⁸¹⁾.

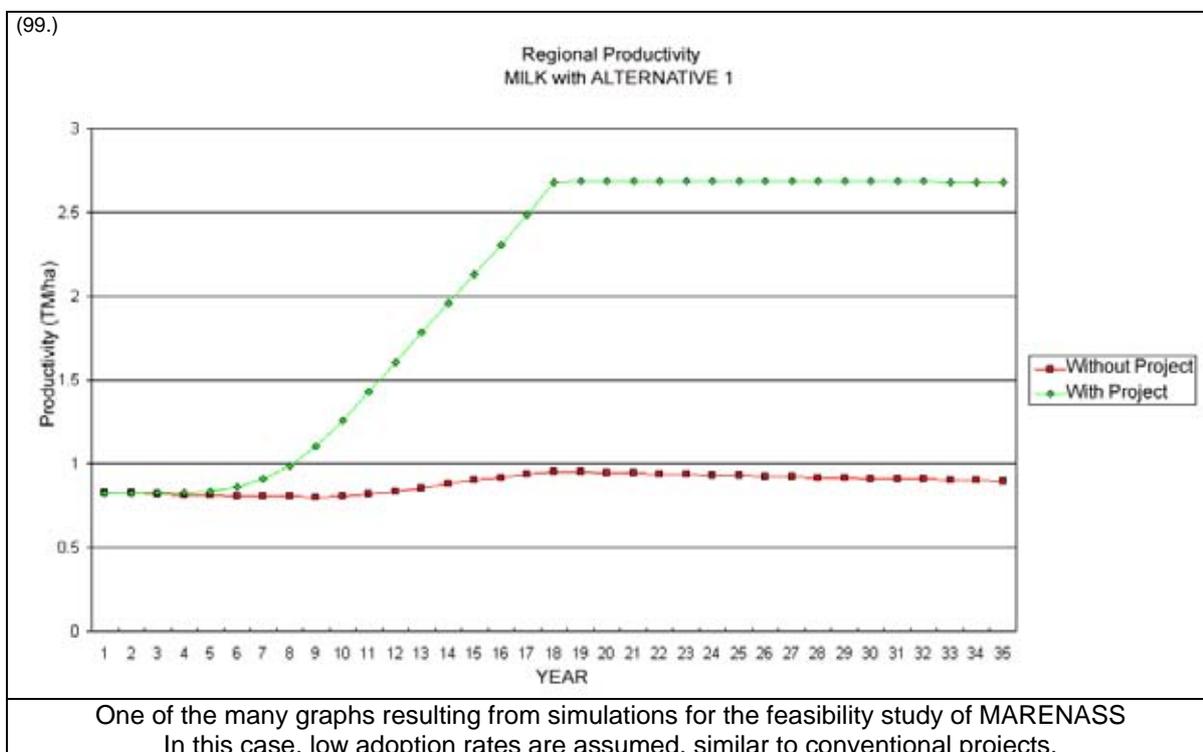
⁸⁰ See also: Quiroz, R.A. et.al. 1995.

⁸¹ From: “Agriculture Research Service” of the “United States Department of Agriculture”. See: <http://topsoil.nserl.purdue.edu/nserlweb/weppmain/wepp.html>

WEPP can be downloaded from the Internet. The model can simulate crop growth, climate, soil fertility, erosion, and other factors. Simulated results of productivity, erosion, soil fertility, etc. can be monitored every year, as a function of the selected management strategy. The generated data can be used as input for a model that simulates the local and regional economy (such as LADERAS).

The optimum management strategy can be determined by repeating the process with different management practices; “optimum” in ecological and economic terms. That management strategy is the so-called Framework of Contents. Also, the ultimate outcome of the present management forms can be estimated, including migration. The difference between the two scenarios is an indication of the potential available to a project aimed at capacity development. ⁽⁸²⁾

The realities of extreme poverty in combination with environmental degradation therefore offer an important opportunity. Productivity can multiply if capacity development is directed at specific, critical issues.



One may wonder, of course, about the importance of other economic activities in rural areas, such as tourism, handicrafts, cheese making, and so on. All such activities may certainly be interesting options, worth exploiting (later). However, it is hardly likely that their growth

⁸² Why are these programmes not yet converted into a computer game, capable of graphically showing the results of resources management by the player? If you do well, the communities grow. If not, you'll need to migrate to the jungle, and start again. Such a programme could be a great tool to enhance understanding the impact of day to day management practice, for farmers, project staff, and politicians, who now believe that some regions of their country are simply hopeless.

potential is comparable. Reclamation must be done anyhow, because resource degradation will drag down all economic activities if it is allowed to continue. Reversing it offers “business opportunities” with great potential, fuelling all others. That’s why emphasis should be placed on natural resources management, as long as there is a tendency towards degradation. Evidently, the relative importance of other aspects may become more important, once the recovery phase is well underway.

(100.)

Computer simulation Models and productive fallow

It is well known that the fields are left infertile after some years of crop rotation. It takes long years of (unproductive) fallow time for land to recover its fertility. Many projects try to increase productivity of crops, as this would improve the farmers’ economy.

Crop rotation was simulated with EPIC (Erosion Productivity Impact Calculator), including the unproductive and fallow land. Data of the simulated fertility levels of the soil was generated. It showed the loss of fertility during the years of crops and also its slow recovery while lying fallow.

Then, with the same model, different management strategies were tried for each crop and also for fallow period. The introduction of native grasses or alfalfa during fallow time was found to speed up the recovery of soil fertility. The improved fertility greatly increased productivity of all other crops (as the Roa Muñoz family demonstrated in practice, see Text Box ttr: “I DOUBLED my livestock production”). Besides, large amounts of forage were also produced during fallow, which is another major change compared to the traditional, unproductive fallow.

This exercise corrected our idea about how to improve agricultural productivity. It proved to be rather simple: introduce a fodder crop during fallow (plus proper management), replacing the traditional unproductive fallow.

Van Immerzeel, Lessons from the Feasibility Study MARENASS, 1994

(101.)

Patacamaya shows its potential

A more desolate place as Patacamaya on the Bolivian highlands is hard to imagine. Over 4000 metres above sea level, cold, and very dry with vast salt plains and dunes (see Text Box ttr: "Productivity and management are linked"). People are extremely poor and migrate to La Paz, the capital of Bolivia, and also to Argentina, Chile, and the jungles.

PAC-II started in 1993 with Raymi (two years before the end of its existence) to prioritise reclamation of the severely degraded soil.

Only seven years later, in 2000, milk production had multiplied by 20. Farmers who used to ride an old bicycle, and considering migration, were now driving pickup trucks; migrants return to their communities to take advantage of the new opportunities. And former extensionists of PAC-II bought land to start a profitable business.

One of the spin-offs of environmental reclamation in Patacamaya (which has only started) was the development of the town: several agro-veterinarian retailers have appeared, agencies of different banks opened office, karaokes and restaurants have multiplied, and there are several rental businesses of farm equipment.

Such a boom in business enterprises is due to the new future that people created by reclaiming their natural resources.

(PAC-II)

(102.)

Nature: Poor People's Wealth The Importance of Natural Resources in Poverty Eradication

The "Friends of the Earth International" convincingly describe the direct link between environmental degradation and rural poverty. They provide examples from all over the world: Chile, Cameroon, Ghana, El Salvador, Paraguay, East Timor, and Colombia. The "Friends of the Earth" detail the cycle of over-exploitation of the environment, loss of cultural, political and economic self-determination, inequity, hunger and poverty.



Community-based natural resource management has enabled people to gain access to and control over these resources, thereby realising the possibility of poverty reduction.

See also: <http://www.eldis.org/cf/rdr/rdr.cfm?doc=DOC19271>



Productivity of these rangelands is extremely low

(103.)

Simple measures: many times more production

The contests inspired many families to harvest the seed of native grasses, plant them, and even transplant some species, such as *chillihua* (below).

Pride and joy
 Mr. Abraham Mamani proudly showing his reclaimed dry rangeland. Tumarapi, Pacajes, La Paz, Bolivia. He was a participant of Pachamaman Urupa, of PAC-II.



Transplanted *chillihua* and other palatable species.

(104.)

Repetition of contests multiply the impact

The first two contests of “*Pachamaman Urupa*” in Patacamaya achieved that each family improved an average of 0.10 hectares of rangeland (these contests last 6 months each). Very little when compared to the vast areas. People had seen the best experiences and advantages of their efforts before the third contest started. When the referees evaluated the results, it showed an average of 3 hectare per family of improved rangeland. Thirty times more than the total of the first two contests.

This increase shows the result of accumulative and progressive learning and logic of the contest, as well as learning and enthusiasm of the participants.

(PAC-II. Wiener, 1994)

(105.)

The contests inspired many families to harvest seed of native grasses

Mr. Claudio Molla, Kamana from Patacamaya (local leader, associated with the contests), tells:

“We never planted native grass. People know these things, but they just let the wind blow away the seed. But from last year, all this has changed. For example in the contest of 1993, the grass seed they harvested, are planted it in 1994. There is more production of grass where they actually planted them.”... “Inside the furrows, the grass grows very well. It is still green”

Mr. Serapio Huarachi, Community Alto Putuni, La Paz.

Kamana (local leader, associated with the contests)

“Last year I tried to plant native grass on 300 square meters, nothing else. That was the first time. Now I have about half my land planted with grass. Where there is no *chillihua*, I put it there. I do that”.

(PAC-II. Wiener, 1994)

(106.)

Computer simulations models and the definition of Framework of Contents

During the feasibility study of MARENASS I was very impressed with the usefulness of the simulation models.

I knew that overgrazing was one of the biggest problems of natural rangelands (which makes up over 90% of the total area). I also knew, or rather, believed, that reducing the number of animals was needed to solve the overgrazing. However, simulations of soil reclamation by changing management, showed something very different. First, reclamation only requires different grazing practices and a few other cheap measures. Second, reclamation is so fast that there is so much fodder after about two years, that animals cannot eat it all. It takes five years or more before the number of animals is finally sufficient to take advantage of the huge amounts of fodder.

If only a few communities would reclaim their rangelands, they could simply buy animals from neighbouring areas to increase their numbers to match the amount of feed. However, if many communities reclaim their rangelands, people must wait for the number of animals to increase naturally, as there would not be so many for sale.

What a difference from what I thought I knew!

This finding drastically changed the Framework of Contents: instead of trying to have people reduce their flock (which would have been next to impossible), the focus should be on reclamation and management of rangelands. Simple changes are enough to reclaim them.

Van Immerzeel, Lessons from the Feasibility Study MARENASS, 1994

(107.)

I can irrigate **twelve** times more land with the same 15 litres !!

Mr. Valentín Huayhuasi

Qholliri (traditional leader) from Milla, Aroma, La Paz, Bolivia

Participant of Pachamaman Urupa, PAC-II

"With irrigation, I get more production, I have plenty now".

Then he explains how important learning the irrigation techniques from Arequipa was for him: "Here we get 15 litres per second, and that was just enough to irrigate $\frac{1}{4}$ hectare. We wasted a lot of water. In Arequipa, they irrigate three hectares with 15 litres. Now I also do that."

Mr. Valentín Huayhuasi participated in the irrigation contest and won the irrigation-training course in Arequipa.

(PAC-II. Wiener, 1994)



The main hope of a nation lies in people developing their capacities.
Adapted from Erasmus of Rotterdam

Chapter 5

The three key issues: People's capacities, motivation and performance

Effectiveness and efficiency in eradicating poverty requires the improvement of performance⁽⁸³⁾ of many thousands of families and their organizations.

The key issues to accomplish such a daunting task are people's "capacity" and "motivation" (see Figure 8). The depicted relations between motivation, capacity and performance apply to a family, but also to its organizations.

With Raymi, the project aims to influence and improve critical *capacities* as well as *motivation*. It also requires families and their organizations to monitor their *performance* periodically, by determining the results of the contests. Such a "performance test" reorients families and organizations toward the experience they identified as the most relevant or promising. The project can and should use the "performance test" (the contests) to improve and (re)orient their capacity development efforts.

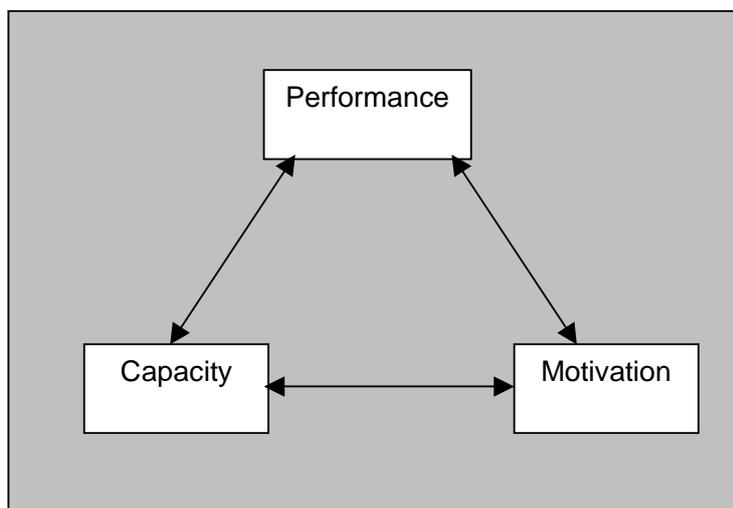
In this chapter we will look into the role of the project to influence (1) critical capacities, (2) motivation and (3) monitoring and evaluation of performance⁽⁸⁴⁾. We believe that much of the success of the projects using Raymi comes from influencing all three key issues of capacity development.

⁸³ Performance is reflected primarily in effectiveness and efficiency to achieve goals.

⁸⁴ Adapted from: Horton, 2004.

Figure 8

The relation between motivation, capacity and performance ⁽⁸⁵⁾



(1) Critical capacities

“Capacity development” is fundamentally different from programmes that supply (“transfer”) products and services, such as infrastructure and technical assistance. The aim of capacity development is to promote development of *people* and their organizations. This has far reaching consequences for the distribution of roles between project and population (see Chapter 4). It implies that outsiders can not do capacity development including such outsiders as projects and their staff. *Capacity development has to come from within* (See Text Box ttr: “Hands-off – Hands-on”).

(108.)

Capacity development: hands-off – hands-on

People from outside cannot do capacity development. An outside agent or promoter can *encourage* or stimulate capacity development or deliver information. However, (s)he cannot –and should not- take the lead. Leadership should emerge from within the organization and members of the organization should do the required work. Families and communities can benefit from outside knowledge and advice, but basically, they should be in charge. In other words “**hands-off**”. “Participation” does not begin to describe this requirement.

Capacity development goes way beyond participation

Capacity development implies acquiring and applying new knowledge. Learning based on experience is therefore at its core. Capacity building is “**hands-on**” and practical for the families and their communities.

(Adapted and translated from: Douglas Horton, 2004)

The need for the “hands-off” approach contradicts the conventional perception of projects, which see themselves, their services and products, as **essential components** of

⁸⁵ Adapted from: Horton, 2004.

development. Capacity development requires a different outlook, where essential components of the process come from within. **Outsiders can only play a role as catalysts.**

What is an essential component? And what would be a catalyst? We will explain it, using the bengala flare as illustration. The bengala flare is an explosive chemical reaction of a mixture of iodine crystals and aluminium powder, in equal amounts. This mixture reacts violently, producing a beautiful lilac-coloured flame, popular in fireworks. The reaction doesn't begin just like that. A tiny drop of water is enough to set off the explosion. It can start the reaction of one gram of iodine and aluminium. A drop of water is also enough to explode a truckload.

Iodine and aluminium are the essential elements. They are both needed to sustain the reaction. If there is a lot of aluminium and little iodine, the process will stop as soon as the iodine is gone. Instead, water is just the **catalyst**, the "spark" that ignites the explosive mix. It plays no role once the reaction starts.

Conventional projects often perceive their investments and interventions (money, staff, etc.) as essential elements of development. Such development will continue while the investments last, just like the bengala flare, which will burn until it runs out of one of its essential elements. After that, the process cools off, no matter how careful the retreat.

The development process will not just "cool off", its impact may even be cancelled when environmental degradation continues, for example because the project was unable to change management practices of sufficient families in critical issues (the ones within the Framework of Contents).

Instead, imagine that the project would "only" be a catalyst of the development process, and that only a tiny drop would be enough to reforest large areas. Impossible? May be. But PAC-II in Bolivia tried and gave up its conventional tree production: closed its communal forestry nurseries and sacked two of their three nursery staff. At the same time, PAC-II managed to increase tree production from a few thousands per year to 600,000 in the first year of the tree contest, as part of the Raymi programme "Pachamaman Urupa". Besides, it ensured that more than 50% of the transplanted trees survived the first year (normally, almost all would be lost). And there are still families producing trees 10 years after PAC-II closed.

(109.)

10 years ago there were no trees, for many miles around...



...and their daughter had migrated to La Paz. Now, with resources reclaimed by her parents, she is back, with her husband finding a better living in her own community.

Mr. and Mrs. Mamani & daughter at their farm in Tumarapi, Pacajes, La Paz, Bolivia. Rangelands reclaimed, trees planted, making new plans to continue improvements, 10 years after PAC-II closed. Their reclaimed pastures allowed them to change from unproductive sheep to milk producing cows. Colourful birds, they'd never seen before, now nest in their trees.

The projects' investments should be conceived as **catalysts**, and not as essential ingredients of the development process, while the population assumes reclamation of their economy and resource base, within their possibilities and limitations. This implies that the project should not pay for any action or provide inputs, as construction of terraces, fencing, etc.

(110.)

Help hurts

In PAC-II an extensionist promised plastic bags to the participants of the tree production contest in his area. The cost is so small that it has no bearing on the budget. However, these bags could not be delivered due to logistical problems. This seriously limited tree production in that particular area, as people waited too long for the bags to transplant the saplings.

When the bags finally arrived, the saplings had grown too big to be transplanted and most were lost. Families, who were promised no help whatsoever, produced hundreds, even thousands of trees, improvising with their own resources.

One can be certain that people will do profitable investments in case the project manages to keep the focus on the essential issues (those that are within the Framework of Contents) and

when people have to bear all costs ⁽⁸⁶⁾. In that case, the impact of the project would not be cancelled by advancing deterioration of the natural resources. People will continue after the project is gone, the process does not go cold, as the project was just a catalyst and not an essential component.

Preparing that explosive mixture...

Evidently, the investments of the project can only be a catalyst if there is a mixture as explosive as iodine crystals and aluminium powder. This mixture must be prepared carefully, and consists of:

- **extremely degraded resources**, which can be reclaimed by
- people with the right capacities to reclaim them (the “**critical capacities**”).

(111.)

A visible budget to mobilize

An interesting element to highlight is how the IFAD-Peru projects showed their budget and used it to mobilize families and their organizations. In other words, the budget is not a resource to reach certain “object-objectives”, it is perceived as a lever to stimulate the local actors.

This is quite special and the impacts show that this policy works: it is very different from the common tendency to “hide” the budget and only spent something when the project staff considers that it is interesting and worthwhile; rather, be open about the available budget and agree on the rules of its use, and have people develop their preferences, initiatives, their projects.

(De Zutter, 2004)

(112.)

The project as facilitator...

Inductor, facilitator... What characterizes MARENASS? No word describes it clear enough. So, let's see what it does.

The project provides resources and opportunities to the local actors. Not solutions. These must be found, experimented and implemented by these local actors. That's what the resources are for, “enlarge” their views, combining, connecting, people's capacities and experiences, to develop new capacities.

(MARENASS. De Zutter, 2004, p.153)

Raymi: with people and nature

⁸⁶ Some find this unfair, especially when the project has the resources to meet all such costs. However, the impact of the project's resources depends on how these are used and distributed. The argument here is about achieving the greatest and most sustainable impacts and how the projects' resources can be used to this end. The argument is not about not using them. And remember “help hurts”, See Text Box ttr.

Critical capacities

Severely degraded, but recoverable resources have an important attribute: present productivity (almost nothing) is insignificant if compared to what it could be. This is *the* great potential people can tap into, *if they know* how to help nature to recover itself. The explosive mix consists of the **potential** to be reclaimed **plus** the **capacities** of the people to do so. Only a catalyst is required to make such a mixture explode.

Consequently, the fundamental tasks of the project, throughout its presence, are:

- (1) **Prepare the explosive mix:** Find people that already have the capacities to reclaim resources and spread those capacities to the rest of the population.
- (2) **Apply the catalyst:** contests with attractive prizes are the most efficient and effective catalyst we know up to now. They provide additional motivation. The prizes should be for those families and organizations that performed better than others. Such an approach stimulates local investigation and experimentation, leading to innovation and steady improvement of people's capacities. Investigation and experimentation are entirely done by the people themselves. *The project is in **no way** involved in it, other than motivating it through contests with good prizes and having the pioneering families show off their outstanding results (Remember: Hands-Off).*

Several projects that applied Raymi and promoted contests, invested in prizes, etc. but forgot, or did not know how to prepare that explosive mix. In other words, they did not achieve that people could (re-) construct knowledge, know-how, their organizations, their future, and profit from the potential of their resources. Such contests usually promote some "solution" (eradicate poisonous plants from deteriorated rangelands, construct terraces anywhere, seeding alfalfa, etc.) instead of stimulating creativity and have each individual family decide which management practices best fit their conditions. That is, these projects trained and transferred technology, but failed to tap into, and multiply, the major resource: people's capacities, their creativity and imagination.

"Knowledge is limited. Imagination encircles the world." (Albert Einstein)

(113.)

"Transfer" or capacity development

In the hope to bring economic growth and development, many efforts have put emphasis on the *transfer* of physical and financial resources, accompanied by a *transfer* of knowledge and modern technology as a means to bring development and combat poverty.

This strategy was certainly successful in some cases, but often it was not, and even created dependency. Such efforts failed in the absence of local capacities capable of managing and maintaining the installations. Besides, the social groups could not continue their development, once the external agents were gone. The development process "cooled off". Budgets for this kind of cooperation is dwindling, quite rightly so, as achieved results hardly justify the investment.

It is therefore essential to build capacities of individuals, families and their organizations to initiate and sustain local development. Capacity development is capable of generating local development and eradicates poverty, as the projects using Raymi have shown.

increasing their performance, while enhancing capacities. Extremely poor people have strong motives to do whatever they do and try, including desperate ones, such as a better future for their children and survival.

Motivation is a drive that comes from within. However, it can be influenced in a number of ways, as indicated above. It was found that powerful motivators are: cash prizes, honour, transcultural bridges, and direct knowledge about concrete and achievable economic results. The most powerful motivator is a combination of them all, as is used in Raymi.

Clear indications of the effectiveness of such combinations are numbers about participation in contests, which in many communities of PAC-II was well over 60% within two years. The participation increased as people took notice of results, even when the project's budget restrictions made it necessary to reduce the prize money. (See Text Box ttr: "Prizes of the contest drop as participation multiplies").

(115.)

Prizes of the contest drop as participation multiplies

Not all communities participated in the first two years of "Pachamaman Urupa" (Raymi). Participation was always voluntarily. Now, with the fifth contest, (starting in September 1994), the prizes dropped by about 55 percent compared to previous contests due to budget restraints, but participation of the communities has increased by almost forty percent. The new communities did not want to participate before, but changed their mind after seeing the results of their neighbours. The value of the prizes didn't matter that much. ⁽⁸⁸⁾

(PAC-II. Van Turnhout, 1994)

An example of how motivating contests are, is the EU Programme Araucanía Tierra Viva, which launched farmer contests as its very first project activity. In spite of being new, and in spite of the many farm subsidies in Chile, 30% of the rural population participated in the first contest. The second contest (starting in June 2005) is expected to mobilize over 50%.

MARENASS also offers interesting testimony of the motivating potential of prizes (See Text Box ttr: "Benefits obtained from contests and the importance of the prizes").

⁸⁸ Note: that's why representatives of neighbouring communities may be invited to participate in exchange visits or become referee in the contests.

(116.)

Benefits obtained from contests and the importance of prizes

The amounts paid in cash prizes by MARENASS are small if compared to the effort the winners invested and *very* small if compared to what all farmers invest in the contest. Estimates of the area of Pacucha (Ayacucho, Peru) show that, the participating farmers invested 9 US dollars from their own resources (winners plus other participants) for each US dollar paid by the project (for all contests during one year).

The families work with their own resources to improve their plots and they do this, competing with their neighbours to establish who applied the best combination of practices. At the same time, the organizations compete among each other to show which manages their resources best.

Among the effects of the awards are:

- They are capable of mobilizing important investments of the farmers (labour, material, land and money), improving their lives.
- Money from the prizes is invested. Several winners indicate that they bought seeds for forage (white clover, alfalfa and others); not one example could be found among thousands of winners, of poor investment of the cash prizes.
- Development and generation of new contents, based on understanding of the processes of degradation and reclamation.

(De Zutter, 2004)

Investing in “motivation” makes it possible that an outside agent, such as a project, generates capacity development processes. It makes the “hands-off” approach not only possible but also effective and very efficient.

(117.)

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Great publicity for the contests, announcing the cash prizes, is very motivating
(Programme Araucanía Tierra Viva)

(118.)

The challenge: Capacity development

The main challenges of projects aimed at capacity development consist of:

- Facilitating access of families and their organizations to all kinds of information, knowledge, know-how, and technology. Not just any kind of information of course, it must serve them to improve their agriculture, their businesses, their lives. It must serve them to grow in their rural, regional and national realities.
- Motivating application and experimentation, so people apply the innovations they have seen, heard or dreamt about. Judgement and understanding grow when knowledge is applied to the particular conditions, as do self-esteem.

I do...

I hear and I forget. I see and I believe. *I do and I understand.* (Confucius)

What we have to learn to do, we learn by doing. (Aristotle)

Skill to do comes of doing. (Ralph Waldo Emerson)

(3) Monitoring and Evaluation of performance

As indicated above, the three key issues in capacity development are motivation, performance and of course, people's present capacities. In the previous lines we have discussed two of the key issues. Now let's look at performance.

Performance can be used to improve motivation and people's capacities, by *monitoring* and *evaluating* it regularly. We will briefly look at monitoring and evaluation. Every family and each organization should carry out their own monitoring and evaluation regularly. But remember: hands-off. The project can stimulate this vital function, again, through contests.

All those participating in a contest, will compare their performance with that of others, particularly with the winners. Participants and non-participants alike will check if the referees took the right decisions. By doing so, people will learn if and what they could have done better and are likely to improve their performance next time around.



(119.)

The referees are honoured guests

The community of Colchani receiving the Committee of referees for the contest of Pachamaman Urupa of PAC-II August, 1994.

Picture: L.van Turnhout

(120.)

With trumpets and drums

The community of Maska (Paruro, Cusco, Peru) receiving referees and guests for the very first irrigation contest. PRODERM, June 1988



Farmers' representatives monitor performance; they are the referees.

The projects M&E

Monitoring and Evaluation of performance is required for two reasons: to report on achievement of targets and goals and to provide a basis for improvements in capacity development.

As for the achievements, financiers usually ask for well-defined objectives and targets and want to follow the implementation of the project. However, capacity development is unlike conventional projects where construction and transfer processes allow complete control over the output. Capacity development is harder to control or predict than transfer processes.

In a sense, capacity development is a trip into the unknown, as the project does not have control over outcomes. For example, distributing the budget in the form of prizes means that the project cannot determine what their resources will be invested in (though it shows confidence in the farmers capabilities). Such a project can exercise even less control over farmers' contributions.

The opposite is true, if seen from another perspective: conventional projects are riskier, as they invest their money in what is not yet there and what may fail, while awarding a prize is done only when the results are tangible and everywhere. Only the best receive a prize. The prize is typically only fraction of their investment.

For example, a contest on tree production can include in its "rules and regulations" that each participant must produce a minimum of 1000 seedlings (estimated value US\$ 1000) and have at least five different species in their nursery. Thousands can participate. The number of participants does not affect the budget. Only a few winners will receive a prize (about US\$ 100 each). The project invests in publicity, exchange with traditional tree producers, some training and prizes, but in a sense, has no control over what happens as it doesn't pay anybody to do anything.

The prizes are only awarded if there are winners. Consequently, there will be hardly any expenditure before the trees are produced. The total investment of

the project is a fraction of what it would have been if it had produced the trees with paid staff in its own nurseries. The “results” of the tree contest in terms of trees produced, can be reported to the financiers, and is gathered in minute detail, by the referees of the contests (farmer representatives).

Frequent and detailed evaluation of performance of families and their organization allows the project to gather the data requested by the financiers that show what the farmers achieved through the capacity development efforts of the project. (This is almost like showing what the project did, however, it didn't, shouldn't, do a whole lot...but it achieves much more. See Text Box ttr: “Those kilometres are meters, I suppose...”).

The second need of the project for monitoring performance of families and organization is to provide a basis for improvements in capacity development. General contests such as “who cares best for the Earth”, where farmers judge other farmers, provide everyone with interesting details about what other families did to improve their enterprise. It is an excellent opportunity to learn from experience; it provides quick and frequent feedback to the project, participating families and their organizations.

Monitoring performance gives the project the opportunity to improve capacity development: The data produced by the referees can be compared with the “Framework of Contents”. This provides possible new orientations for the farmer exchange programmes, as it becomes apparent which contents have become general among the population, and which are still missing. Also, new opportunities may be identified to reduce recurrent production costs, or increase productivity.

(121.)

Terraces can serve us too

“The *comunarios* (community members) from Ayzacollo (Aroma, La Paz) showed the field staff of PAC-II the centuries old and disintegrating terraces. It was decided in a communal meeting to reconstruct them: “if they served our ancestors, they can serve us too”.

The terraces occupied a complete hill. After they were reconstructed, the community decided to make a sanctuary to Mother Earth on top of the hill. The whole area was declared a “nature reserve” to allow vegetation to recover. Hunting and collecting eggs of wild birds was forbidden. The entire area became a refuge for wild animals, as people were worried that there were less and less animals every year.

The management of PAC-II was surprised by this new initiative, which had started as restoring ancient ruins.

(See Text Box ttr: “Communities retake their responsibilities”)
(PAC-II. Van Turnhout, 1997,p.75)

(122.)

A budget to invest with the poor

A key aspect to understand the impact obtained by the projects applying Raymi, including the IFAD-Peru projects, is the way they take advantage of their budget.

Since quite a number of years, a simplistic idea is growing, which divides society into two parts: there are those actors with economic capacities, and with whom one can invest. On the other hand, there are the poor, qualified as “economically not viable”. Many small farmers are in that category. One can only spend money in “social compensation” and on “basic needs” for these poor people.

Instead, the projects using Raymi choose to consider the poor as economically viable and productive, with their own ventures and dreams, with their assets and organizations. Yes, these projects stand out, as they conceive their budget as capital to be invested in feasible enterprises... of the poor, with the poor, by the poor.

As MARENASS, PAC-II and many other projects using Raymi demonstrated, investing in extremely poor rural communities is very profitable. The evaluations have shown that the families attain food security, improve quality and quantity of their production, increase their assets, learn to sell their produce, develop their own capacity to invest, increase their contribution to the economy, and pay more taxes. In other words, they increase physical, financial, and social capital, in addition to growing in knowledge and know-how.

In other words, social, economical and cultural wealth is created, *to the benefit of the nation*.

The feasibility of the investments becomes evident in increased production and circulation of goods and services. The dynamism continues after the projects retreat from the communities.

(Adapted from: De Zutter, 2004)



Annex 1: Transcultural participation

(123.)

The colonial syndrome and transcultural participation

One of the characteristics of Latin American societies is the “Colonial Syndrome”, a social impediment, mostly affecting the indigenous population.

Transcultural participation is one way to overcome this impediment: the project’s activities must take place within the cognitive, symbolic and institutional universe of the farmers. It also demands the participation of project staff in the culture of the population, which is the area where project and farmers meet.

Transcultural participation supposes the selection of certain “**transcultural bridges**”, which are elements, activities or actions characteristic for the culture of the farmers. It is an important motivator and matches the aims, concepts and parallel objectives between project and farmers and can therefore facilitate cooperation and capacity development.

Transcultural participation therefore should become the instrument through which capacity development is implemented. Transcultural bridges provide the implementing mechanisms.

(Van Immerzeel and Núñez del Prado; 1994)

The coming together of two worlds and cultures, through Raymi, was already described after the first experience (⁸⁹) and continues to be seen as a key element that partly explains the effectiveness of Raymi (⁹⁰). The encounter occurs on all relevant levels of human development: ideological, sociological and technological.

Social articulation always follows a sequence of growth, which starts with *identity*, followed by *coordination* between different elements, and it culminates in *centralization*. This implies that actions must be taken to strengthen, in the first place, peoples *own identity*, and then provide mechanisms to coordinate between the different levels of the social organization, starting at the lowest level towards the higher ones. According to this logic, the lower organizational levels should receive the highest priorities.

When *identity* is at the basis, the social system will become more effective if it is strengthened. This will improve performance. “Strengthening identity” in the case of indigenous farmer communities, means strengthening their *cultural identity*.

The above-sketched procedure makes it possible to exploit all mechanisms of social action. Also, viability of the cultural institutions of the farmers improves as social organization is closely linked to culture. In other words, the farmers’ culture and development is strengthened, by tackling the social organization in a systemic way.

⁸⁹ Van Immerzeel and Núñez del Prado, 1991.

⁹⁰ De Zutter, 2004, 141-151: “Key 9: *The result, Meeting of worlds and cultures*” describing the IFAD experience. The meeting of worlds and cultures is perceived as a “result”. It was an essential part of Raymi, from its design in 1987.

Raymi uses the basic aspects in human development, that is: the ideological, sociological and technological factors.

- The ideological factor is constituted mostly of principles, values and concepts.
- The sociological factor is composed of roles, reciprocity systems of rights and obligations.
- The technological factor consists of sequences and procedures to obtain specific objectives.

These three factors have different characteristics in each culture. Specific “transcultural bridges” are “tools” to overcome cultural barriers, which exist in multicultural realities, in which many projects operate. These “bridges” are activities, actions, proper of the culture of the communities and which have important motivational impacts.

We distinguish three different kinds of bridges

- Ideological bridges.
- Sociological bridges.
- Technological bridges.

(124.)

IFAD bridges

The “bridging of worlds” is appreciated in IFAD projects in Peru as key to their success: “reaching out and respect for traditional local cultures was achieved by putting an Andean mark on the activities, by using certain names (contests ‘*Pachamama Raymi*’) and roles (*yachaq, yachachiq*)”, celebrating certain moments ...”

(De Zutter, 2004, 141-151)

Ideological bridges

The first contest of the European Union project ALA 94/89 in Guatemala was called “***Qa chajeej qa tuut ak'al***”⁽⁹¹⁾ an expression of the conceptual baggage of the Poq'omchí culture. The name ***Pachamama Raymi***⁽⁹²⁾ was adopted in the Quechua area of the Andes. Both refer to Mother Earth, an essential element of their ethnical perception of the universe of the Andean and Central American populations. It is associated with femininity, fertility, production and abundance. The main resources come from her and are in her care: the earth, water, crops, seeds, animals, and trees, even people. They all *belong* to her, are part of her. A similar concept in the western lexicon would be “ecosystem”, missing however, the sacred meaning it has in the native cultures.

The *purpose*, of the contests can and should be an important ideological bridge: “care for Mother Earth”, awarding prizes to the best. This shows respect for Mother Earth, not just through rituals, but also through work and effort. The productive activities are important contents in capacity development and their purpose is “caring for Mother Earth”.

⁹¹ "Let's care for our Mother Earth" in the native language Poq'omchí.

⁹² *Fiesta* of Mother Earth in Quechua, the language of the Inkas.

(125.)

That name: Pachamaman Urupa lets us remember ...everything...

Mrs. Uvaldina

Community of Colchani, Aroma, La Paz

Some families from Colchani, with Mrs. Uvaldina (extreme right)
Participants of Pachamaman Urupa of PAC-II



“My grandfather, he loved the *Pachamama* (Mother Earth), but it was forgotten. That name of the contest, it reminds us, and it makes you think how it was, the techniques, the dances also. The young people dance *cumbias* now. We used to dance with *polleras* (traditional, heavy, long skirts of baize), we had woollen hats, and we made them ourselves. I have an underskirt of baize since I remembered the dances. It’s much warmer. And those who didn’t have a *pollera* of baize, were reminded of the *polleras* by the dances, which

Pachamaman Urupa brought back to us. Now we use them again, the *polleras*. Even the young girls make them now, because they want to have them too. For example, we will all wear the *pollera* again for the celebrations of this Christmas, because of those contests... It woke us up.

I will make *polleras* again, because we prefer our traditional clothes. I want that, because we are farmers. We have to use our indigenous clothes, of our grandparents, and shouldn’t forget these; our forefathers made and used those clothes of baize. It is cheaper than buying. I will start weaving. My children will do it too. The girls can spin, and the boys too. By just watching they will learn weaving also. ... We were forgetting these things, our forefathers, our clothes, and our traditions. I want to practice it again. The most beautiful thing was the *aguayos* (large scarf) from the old days, with their birds, and hawks, very beautiful. That should not get lost. It costs time. But we can do it. I always loved it. But I had forgotten.”

“Talking about Pachamama, I have changed to rotational grazing. And it has taught me something special. ...Now I have fodder for the animals, also for the winter.”

(PAC-II. Van Turnhout, 1997,p.59-60.)

Sociological bridges

The rural communities have traditional leaders, which play significant roles. We refer to such roles as “guide”, or “leader” of certain activities. Examples in Quechua are: *Kamayoq*, *Qollana*, and in Aymara: *Ipiri*, *Kamana* or *Qholliri*. Their leadership and authority can and should be used in the contests.

Technological bridges

This kind of bridges refers to the specific technological content and the people, places and form of interaction: *farmer-to-farmer exchange of technology*.

The farmers learn their technology directly from other farmers; in practice and within the context of normal daily practice.

The methodological procedure of Raymi has several advantages:

- Technology is transmitted horizontally from farmer-to-farmer, eliminating, or rather, avoiding all obstacles that hinder the vertical transfer of technology from extensionist to farmer.
- Learning is practical. This coincides with the traditional way of knowledge exchange, where tacit knowledge flows easily.
- Exchange takes place in a context where participants can directly see the technology associated with all other elements of the productive process. This allows the farmer to appreciate the full significance of the technology in a real context.
- The farmers are exposed to the essential aspects of the technology, under real circumstances to confront real-life situations. This avoids the problems associated with conventional training. Besides, it allows the farmers to appreciate a number of tools and “tricks” which are used with the particular technology.



(126.)

Reclaiming the salt plains

Farmers of the Community of Chica Belen, participants of Pachamaman Urupa of PAC-II, made many kilometres of widely spaced furrows, and planted *kauchi* a salt loving plant and great fodder.

The result after just a few months can be seen in the middle of the picture. On the right the completely bare salty soil, as the entire salt plane used to be.

If managed with care, these plains won't stop producing fodder and will sustain many.

(PAC-II. Picture: Van Turnhout, 1997)



Annex 2: About instruments

Raymi is sometimes referred to as a “toolbox”, containing several instruments, among them are contests, field trips, intensive training courses, and others. Evidently, these are just tools. Using them wouldn’t necessarily mean that something is being achieved. Just as treating a pile of wood to the tools of a carpenter, doesn’t necessarily result in some usable piece of furniture, no matter how much time, wood, nails and glue was spent. Several projects and NGO’s have used some instruments from the Raymi toolbox, but little came out.



Harold S. Geneen (1910-1997)

(127.)

A three-sentence course on business management

“You read a book from the beginning to the end. You run a business the opposite way. You start with the end, and then you do everything you must to reach it.”⁽⁹³⁾

Harold Geneen

Manager of ITT from 1959 to 1977

He turned a faltering ITT into a giant conglomerate.

Development efforts should be *intentional*: as Harold Geneen tells us (Text Box ttr): to get where we want to go, we need to determine where that is. In other words, far more important than any specific tool, we need a clear picture of what the result of our efforts should be. Tools are just a means to get there. If they aren’t, they don’t serve the purpose, and can be discarded.

We all know the first rough outline of the picture that shows what should be achieved: no poverty, natural resources reclaimed and sustainability. Once we acknowledge this, we need tools and whatever else, to get there, at the lowest possible cost. If our existing tools aren’t capable of getting us there, we may need different ones.

The demands placed on projects in rural areas are clearly spelled out in the Millennium Development Goals and include results such as: no poverty, natural resources reclaimed and sustainability, in the shortest possible time. As we know from experience in several projects, the shortest possible time is three or four years.

If you are planning for a year, plant rice, if you are planning for a decade, plant trees, if you are planning for a lifetime, *build people’s capacities*.

—adapted from a Chinese proverb

Formidable and verifiable results are demanded in a nick of time. A greater contrast with conventional, open-ended projects, can hardly be imagined.

⁹³ Harold Geneen, 1985, p.35. “*Managing*”, Avon Books, New York.

These first rough outlines can become more specific by determining the “Framework of Contents” (see: 3.5).

Tools are required to clarify the picture further, to find the specific contents, to find the pioneering families among thousands.

Tools are required to achieve that over 50% of the population adopts the innovations of these pioneering families within the shortest possible time. The 50% is based on the requirement of attaining sustainable results (see paragraph 3.3). Tools are needed to have everybody experiment and find better solutions.

Still other tools are needed for constant verification, to check if the effort will have the desired outcomes, and if the picture still reflects it, and if the other tools are up to the mark or need to be improved.

The next picture of where we should be heading will need to be prepared, and the process starts all over again until the project goals are reached.

It must be detected –through Monitoring and Evaluation- if you achieve what must be achieved. It may be necessary to adjust, eliminate or add better tools.

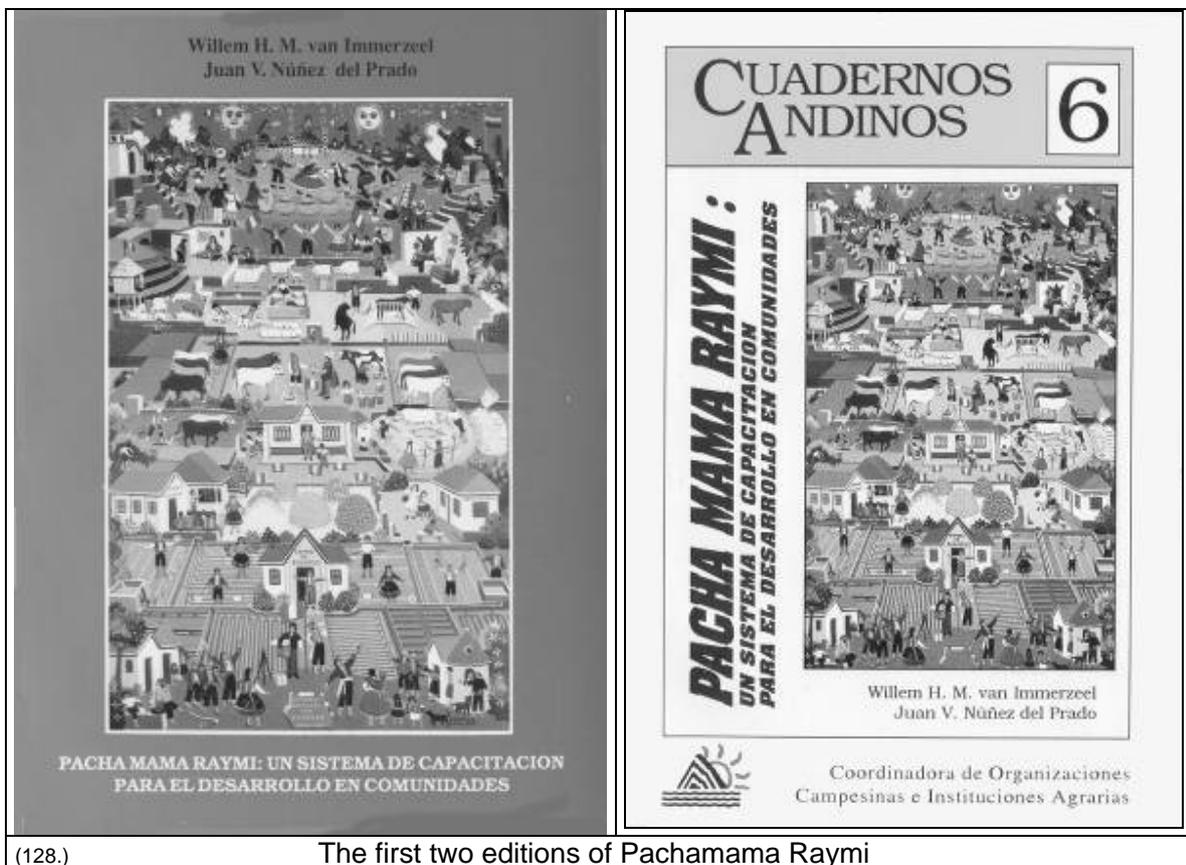
<p>In the development effort, we are used to being judged on intentions and effort, because of disappointing results. Projects using Raymi show that magnificent results can be obtained fast. It therefore becomes necessary to be judged on results.</p>
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Annex 3: Publications about Raymi

As the years went by, and experience and Raymi grew, several organizations published books about Raymi. The first one was: "Pachamama Raymi, a system of learning for development", by Willem H.M. van Immerzeel and Juan Víctor Núñez del Prado. It was published by PRODERM in 1991, the project where the methodology was designed and tried out. ITDG distributed the book in Lima, and IFOCC in Cusco.

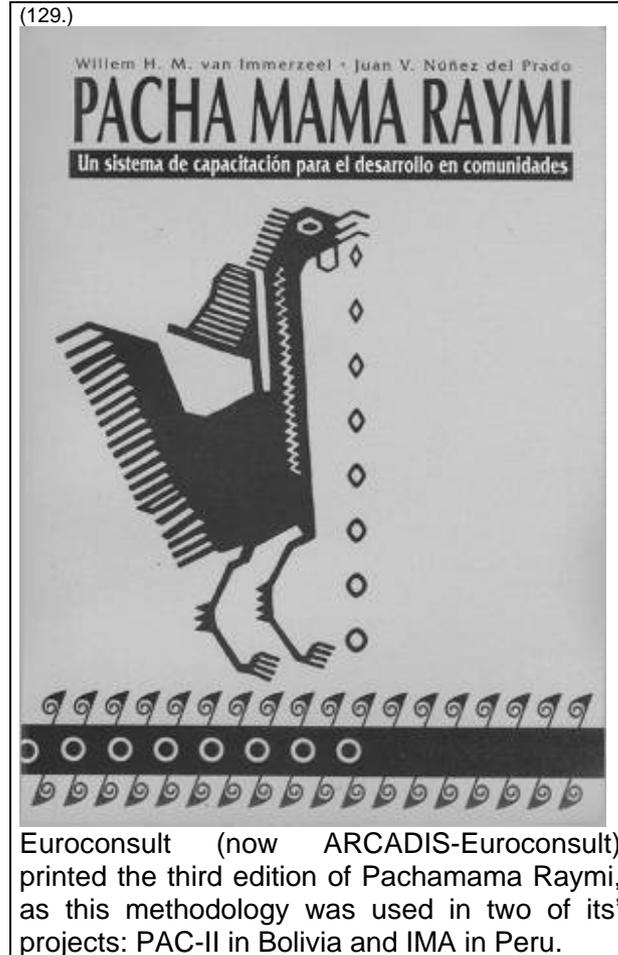
Later, two new editions of this book were published. The second edition appeared in 1994, financed by "The Coordinator of Farmer Organizations and Agrarian Institutions" (Coordinadora Rural, Lima), to be distributed among it's members.



(128.)

The first two editions of Pachamama Raymi

(129.)



In 1999, Alain Peigné and Carlos Medinacelli wrote "Pachamaman Urupa, a Guide to a farmer-to-farmer methodology for learning" for CICDA / RURALTER. Alain Peigné, a consultant, did the very first evaluation of the implementation of Raymi in PAC-II, and Carlos Medinacelli had been co-team leader of the Patacamaya area (with Willem van Immerzeel) when Raymi was introduced in PAC-II. This guide is available at: www.dexcel.org, "links".

The European Union organized the workshop: "Identification of Supply and Demand in Training Methodologies in Projects of the European Union" in Latin America (Arica-Chile, March 27-28, 1995). In this workshop Raymi was identified as the most effective methodology of the EU in the Region. The EU therefore requested PAC-II to write a manual for other projects. The author was Juan Carlos Soria, co-team leader of the Patacamaya area (with Willem van Immerzeel). After PAC-II closed, he continued in the same function, in POST-PAC. The title of the manual is: "Pachamaman Urupa, a farmer-to-farmer methodology to learn natural resource management", June 1995.

In 2001, ARCOTRASS-GTZ, consultants to Plan Meriss Inka, published their experience with Raymi to improve field irrigation and irrigation management in the mountains. Willem H.M. van Immerzeel wrote the original document (when he was working with ARCOTRASS-GTZ in Plan Meriss Inka); it was edited and adapted by Luis Urteaga. José Alfonso Heredia prepared the final edition.

Around the same time, Raymi was introduced in a project of the European Union, this time in Guatemala, requested by Huub van der Zel, the co-Director of the Rural Development Programme in the Department of Alto Verapaz, ALA 94/89. Willem van Immerzeel introduced Raymi through backstopping missions. In 2002, requested by DEXCEL and GESTRES, Van Immerzeel documented the experience with Raymi and introducing "permaculture" (sustainable agriculture). The title is: "Courses or Contests, comparing two methodologies to care for the Earth".

Raymi generated a number of projects of relatively high quality (quality = efficiency + effectiveness). This motivated DEXCEL to write a number of manuals and guides, all freely available at: www.dexcel.org. The first one was financed by MASAL (a COSUDE project) and had several reprints: "Pachamama Raymi, the *fiesta* of learning". The Programme Araucanía Tierra Viva (financed by the European Union and the Government of Chile) published the second edition of this book.

The Programme Araucanía Tierra Viva in Chile requested DEXCEL to prepare a new and updated edition of this book, which appeared in August 2005. ("Learning from the best, local knowledge management for development").

The Programme Araucanía Tierra Viva also requested DEXCEL to prepare a manual for their field staff. This manual "Learning from the best" was published in January 2004. All DEXCEL publications are available at: www.dexcel.org.

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	Glossary
ALA 94/89, or ALA	The Rural Development Programme in the Alta Verapaz, Agreement between the European Union and the Government of Guatemala (1996-2002). It adopted Raymi in its programme for introduction of sustainable agriculture, after finding that a conventional methodology could not produce the required results. It published a book about the experience (Van Immerzeel, 2002)
ALTERTEC	"ALTERnativas TECnológicas" Technological Alternatives, a Guatemalan NGO.
Anchoring of innovations	Term used to describe an advanced state of adoption. The adoption increases rapidly from this point onward. A project can be confident that innovations will continue to spread once this point is reached. It is one of the sustainability criteria of project output and a target in a development programme. See: "critical mass"
ARCADIS Euroconsult	International consultancy company, with its headquarters in Arnhem, The Netherlands. ARCADIS Euroconsult implemented two projects using Raymi in Latin America (PAC-II and IMA-Peru), and was involved in a third (ALA 94/89, in Guatemala).
Ayni	Generous reciprocity (Quechua). It is Pan Andean institutionalised concept, on the basis of which all social relations of traditional Andean communities are organized.
BWDB	Bangladesh Water Development Board
CADEP José María Arguedas	NGO with its headquarters in Cusco, Peru. It used the irrigation contests similar to Unu Kamachiq Raymi in several of the communities where it operates.
Capacity development	Process through which knowledge, know-how, skills, talents are acquired or created, which translate in new capacities, and allows the person or groups to improve and unfold their potential.
CEDAP	NGO Centre for Agricultural Development, in Ayacucho, Peru. It adopted Raymi early on (1992).
CIAT	International Centre for Tropical Agriculture
CICDA	International Centre for Cooperation in Agricultural Development (France).
CIP	International Potato Centre (based in Lima)
Cognitive approach	Learning based on the knowledge already available in the person, allowing <i>assimilation</i> of contents. These need to be re-structured and modify the cognitive structure of the person. That is when the technique can be re-invented, that is, adapted to the local conditions, and consequently applied.
Composturas	Field layout and arrangement of furrows to facilitate irrigation. The techniques pre-date the Inka era, and originate in the North Coast of Peru (Mochica and Chimu cultures). Extensive areas can still be seen in the desert with pre-Inka <i>composturas</i> . See: Unu Kamayoq.
Contest	A contest allows someone to obtain a prize by demonstrating the result of its skills; it allows determining those persons in a systematic way.
Contraction	Reduction of the number of people that adopted an innovation due to declining incentives. (Over) estimated at 20% of the population. The target of adoption should be the critical mass + the contraction = 30 + 20 = 50%.
Critical Mass	Minimum mass capable of sustaining a nuclear reaction. Term used in training programmes to describe the minimum adoption rate required producing the "explosion" in number of adoptions. It is (safely) estimated at 30% of the total population.
Cuerda	440 m ² . 16 cuerdas is a "manzana", which is 0.7 hectares
Desertification	Denotes interrelated economic, social and ecological processes associated with degradation, culminating in a virtually uninhabited desert.

	The process is about the dwindling resource base , the increase in poverty, migration and social destabilization and typically affects entire regions larger than one particular country.
Development	Is understood as a steady and endogenous improvement of living conditions of a group of people. It is the process of growth of people's capacities to mould their future.
Development project	Is a mechanism through which one tries to strengthen the ways in which the population increases their resource base, their productive infrastructure, technological capabilities and their most efficient forms of social organization, for production, with an integrated management of their environment.
DEXCEL	Development & Excellence, organization promoting excellence in rural development. It created and introduced certification of NGOs. Also contributes to quality in development through publications. See: www.dexcel.org
Effectiveness	The degree in which an organization achieves its goals.
Efficiency	The degree in which an organization achieves lowering its costs while maintaining its output.
EPIC	Erosion Productivity Impact Calculator. Computer model simulating crop growth, erosion, nutrient and water flows. See: WEPP, LADERASS, WOFOST.
ESAGRI	Division of GESTRES (Gestão Estratégica Espírito Santo, S.A.) entrusted by the European Commission to execute the ALA Project 94/89. GESTRES is part of the <i>Grupo Espírito Santo (GES)</i> .
EU	European Union
Euroconsult	See: ARCADIS Euroconsult
Evaluation	Appraisal of the information generated in Monitoring; it is emitting judgements about what happened, compared to what was planned, with the aim to conduct the project, correct its course. Evaluation is comparing what is and what should have been, to determine which action should be taken in the light of the facts.
Explicit knowledge	Explicit knowledge is objective and rational and can be expressed in words, text, numbers, formulas, graphs, etc. It can therefore be transmitted rather easily, for example, in written form. See: Tacit knowledge
Explosion	Rapid adoption. It occurs after the "critical mass" is reached. It normally occurs about 20 years after the first introduction of an innovation. The conditions for the explosion can be created within 4 years. See: Critical Mass, Contraction.
Framework of Contents	Main and essential issues to improve the incomes of the population in a sustainable fashion. It provides a clear orientation to guide a development project. It translates the system focus in specific issues.
GESTRES	International Consulting Company, with headquarters in Lisbon, Portugal. See ESAGRI.
HEIA	High External Inputs Agriculture. Its introduction is associated with the transfer of knowledge. See: ToT, or T&V.
IAA	NGO in Cusco. The first NGO to use Raymi in its programme, after PRODERM had implemented it.
IFAD	International Fund for Agricultural Development
IFOCC	Institute to promote commercialisation in rural areas in Cusco.
IMA	Institute for the Environment and Water Management. Cusco based. Heir to PRODERM.
IPSWAM	Integrated Planning for Sustainable Water Management, a project under the BWDB, financed by the Government of the Netherlands and implemented through ARCADIS Euroconsult, Arnhem, The Netherlands.

ITDG	Intermediate Technology Development Group. A charity, which works with poor communities to develop appropriate technologies.
Kamachiq	The learning that produces experts (Kamayog). In the beginning of the design of Raymi it had the meaning of <i>fiesta</i> (contest) to prepare experts.
Kamayog	Expert in some productive activity. (Quechua)
Knowledge management	The capacity to learn, improve tacit and explicit knowledge and generate new capacities on the basis of one's own experience and that of others, to answer to the needs of individuals and communities in their development. Also: emerging academic discipline.
LADERAS	A simulation model designed for conditions and challenges in mountainous areas faced by technical assistance. The model can assist in estimating the economic impact of land reclamation activities <i>ex-ante</i> ; and contribute to identify the most relevant issues, which allow the definition of priorities. Available at: CONDESAN, CIAT, CORPOICA, Colombia. It was used to identify the Framework of Contents of MARENASS and formed the basis of its Feasibility Study. See: WEPP, EPIC, WOFOST.
Learn-from-the-best	Methodology for capacity development, also known as "Raymi" or "Pachamama Raymi".
MARENASS	Project financed by IFAD and the Government of Peru. It was the first project, which used Raymi from its design (implemented between 1998-2005). It is generally considered to have been unusually successful.
MASAL	A programme financed by Switzerland and the Peruvian Government, promotes Raymi among its many "allies" in Peru, financing different aspects of Raymi for each one. MASAL also financed a publication of a manual of Raymi
Monitoring	Registering, elaboration, internal publication and documentation of information about the implementation of the project, in a planned and systematic way.
Mutual learning	"Mutual learning" is understood as a collective process of renovation of capacities, and includes socialization, interiorisation, exteriorisation, application and association.
Natural diffusion	Increase of adoption of a certain innovation, in the absence of external incentives.
NGO	Non Governmental Organization
Pachamama	Mother Earth in Quechua. Keeper of all living things, goddess of pre-Columbian and present day veneration. It is the only contemporary traditional deity of truly Pan Andean reverence. Pachamama is the equivalent of "ecology". However, she is considered sacred and therefore has a much greater emotional value as "ecology".
Pachamama Raymi	<i>Fiesta</i> or day of the Mother Earth in Quechua, a native language in Peru, Bolivia and Ecuador. "Learning from the best", or Raymi used to be called "Pachamama Raymi" See Raymi.
Pachamaman Urupa	<i>Fiesta</i> or day of the Mother Earth in Aymara. It was the name of the programme of PAC-II, through which it implemented Raymi during the last two years of its existence, and immediately afterwards, in all Post-PAC programmes of La Paz, Oruro and Potosi. See Raymi.
PAC-II	A European Union sponsored Programme for Auto-Development of Farmers in La Paz, Bolivia. Two similar programmes existed at the same time in Oruro and Potosi. PAC-II implemented Raymi two years before its close.
Permacultura	Concept used by ALTERTEC, see "Sustainable Agriculture".
PISA	Project for Research in Andean Agricultural and Livestock Systems
Plan Meriss Inka	Project in the highlands of Peru aimed at improving irrigation, financed by the Peruvian government and KfW, with technical assistance from GtZ.
Polder	Flat land protected from flooding by embankments and drainage structures.

POST-PAC	EU financed rural development programme, which came after the PAC programmes closed. See PAC-II.
PRODERM	PRODERM, the "Rural Development Project in Micro Regions" of the Department of Cusco, financed by the European Union and Dutch Development Aid (1979 - 1991).
Programme Araucanía Tierra Viva	Rural development programme in the IXth Region of Chile. Based in Temuco. Financed by the European Union and the Government of Chile. It used Raymi from the start of its activities, and published several documents about the methodology.
Qholliri	The Qollana in Aymara Communities. Pachamaman Urupa of PAC-II mobilized these leaders.
Qollana	Traditional Quechua leader of superior and widely recognized skills. It is a key function in the contests of Raymi.
Quintal	45 kilograms
Rate of adoption	With Raymi: the percentage of the population that dominates issues contained in the Framework of contents. In T&V: percentage of the population, which applies a specific technology, or practice, which the project wishes to transfer.
Raymi	Raymi means <i>fiesta</i> in Quechua. It is a methodology for capacity development, using local knowledge management, contests, and intensive exchange. Contests are held between families and between their organizations and are organized by the population; prizes are sponsored by the project. Families and communities that manage their resources best can be identified in a systematic way through these contests. Also called: "Pachamama Raymi" and "Learning from the best". In the Andes, Raymi was the name for all events of the ritual calendar of the Inkas. The word also applies to collective labour for mutual benefit, which would end as a <i>fiesta</i> , with music, food and drinks.
RURALTER	Journal for Alternative Rural Development, published by CICDA.
SID	Strategies for International Development. American NGO, which made Raymi its main methodology. It started its activities in Bolivia around 1994.
Specific contents	The best specific knowledge and know-how to manage some resource. It consists of explicit and tacit knowledge, and can therefore not be dissociated with the person possessing it
Sustainable Agriculture	We use the term "Sustainable Agriculture", "permaculture", "organic agriculture", without distinguishing the subtle but relevant differences between them. They all are about agriculture with few external inputs, also known as LEISA (" <i>Low External Inputs Sustainable Agriculture</i> ").
T&V	" <i>Training and Visit</i> ", common training methodology, having many variations. Its main characteristic is that a technical person helps farmers through frequent and regular visits, to solve their problems, based on his technical knowledge, and with the aid he can receive from different experts.
Tacit knowledge	Tacit knowledge is within the person. It is "know-how" and is generated while doing. See: Explicit knowledge.
Tacit Knowledge	It is the "know-how"; it is having certain "competence". This kind of knowledge is generated through experience; it is personal and not explicit. Transferring it to others is complicated. It is acquired by learning, experience. This knowledge shows in performance and the capacity to answer efficiently to new problems and challenges. Also known as " <i>work process knowledge</i> ".
Tarea	One <i>tarea</i> (or <i>cuerda</i>) is 440 m ² . 16 <i>tareas</i> is a <i>manzana</i> . One <i>manzana</i> is 0.7 hectares
ToT	Transfer of Technology. ToT is a process by which technological "packages" are developed by highly educated professionals in central, and well controlled environments, such as research stations, laboratories, etc.

	These are transferred for adoption to farmers. ToT forms part of a vertical focus on technological change, where development, adjustment and diffusion all have one direction: from top to bottom.
Training and Visit system	T&V. A training system designed for transfer of knowledge. The name is derived from a technical person visiting families (about 80), carefully selected among some 800 to help them solve their problems. See: ToT.
Transcultural bridges	Elements, activities or actions characteristic for the culture of the people. It is an important motivator and matches the aims, concepts and parallel objectives between project and farmers and can therefore facilitate cooperation and capacity development. We distinguish three kinds, according to the basic aspects in development: Ideological, Sociological and Technological bridges.
Transcultural participation	Transcultural participation is the instrument through which capacity development should be implemented in an intercultural setting. Transcultural bridges provide the implementing mechanisms. The project's activities must all take place within the cognitive, symbolic and institutional universe of the people. It demands the participation of project staff in the culture of the population, the area where project and farmers meet.
Unu Kamachiq	The first irrigation contests were called Unu Kamachiq. (Quechua) Unu = water. See: Kamachiq.
Unu Kamayoq	"Guide of the water", specialists in field irrigation in Quechua, the Inka language, heirs to pre-Inka gravity irrigation techniques, which are extremely efficient and labour saving, as yet unrivalled in the world. See: Composturas and "Unu Kamachiq".
WEPP	Computer model. Water Erosion Prediction Model, based on weather generation, infiltration theory, hydrology soil physics, plant science, hydraulics and erosion mechanics, Agriculture Research Service of the United States Department of Agriculture. See: LADERASS, EPIC, WOFOST.
WOFOST	Computer model of agricultural production, weather, soils and crops. See: Van Keulen and J.Wolf. See: WEPP, LADERASS, EPIC.

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