

## The new *Kamayoq*: Developing farmer-to-farmer extension services in Peru

### 1. Background to the new *Kamayoq*

In the Peruvian Andes during Inca Empire of the 16<sup>th</sup> century the “*Kamayoq*” were special advisors on agriculture and climate. They were trained to anticipate weather patterns and were responsible for advising on key agricultural practices such as optimal sowing dates. Today, in the same region, resource-poor farmers struggle against physical isolation, inadequate access to resources and a climate so extreme it can bring drought, floods, frost and hail all within one growing season, and a “new *kamayoq*” is showing potential to be part of the solution.

The skills and equipment resource-poor farmers require to respond to the challenges in the Andes, and to take advantage of potential market opportunities, have been beyond the means of the Peruvian department of agriculture. Public sector services have been in decline since the 1980’s and services to farmers have suffered. This situation led to the emergence of some private extension provision, supplying products and advice to large commercial farmers. The challenge that remained was how to fill the gap of service provision in those many farming communities in the Andean mountains, particularly in the high altitude areas (over 4000m) where they are amongst the poorest and most vulnerable in Peru, and depend almost entirely on alpacas and native potatoes. Despite the obvious need, these resource-poor farmers have had little access to any kind of technical support.

### 2. Developing service providers - Training the *Kamayoq*

Since 1997 Practical Action (formerly ITDG) has been working with resource-poor farming communities in the Peruvian Andes, exploring alternative approaches to extension service provision. The starting point was the needs of smallholder farmers’ in the highland valleys where they keep a few livestock and grow some maize, potatoes and beans for home consumption. Getting a good understanding of their technical requirements, gaps in their knowledge, problems they were facing with their crops and livestock (e.g. pests and diseases; breeding problems; access to inputs) was essential. Part of the initial (qualitative) study was to understand how the advice and inputs could be delivered and paid for, and whom farmers would respect and value. The model that developed is based on the training of local farmer-to-farmer extension agents known as *Kamayoq*. Practical Action (formerly ITDG) established a *Kamayoq* training facility and to date over 140 *Kamayoq* have been trained of whom 20 per cent are women. The *Kamayoq* training facility is based on the following:

- Trainees come from and are selected by the communities where Practical Action (formerly ITDG) is working. One of the key criteria in the selection process is the

willingness (and ability) of the trained farmers to provide services to their communities.

- Training is provided in Quechua, the local language. Instructors include Practical Action staff, experienced *Kamayoq* and technical experts from regional institutes.
- The course lasts eight months and involves attendance for one day per week. The emphasis is on practical learning and training occurs at different field locations and only occasionally in a classroom.
- The course focuses on local farmers' agricultural and animal health needs including: identification and treatment of pests and diseases of agricultural crops and livestock; better animal husbandry methods, particularly breeding; and irrigation via the use of a network of drainage channels.

### **3. How the *Kamayoq* created demand for their advice**

The *Kamayoq* are equipped through their training to anticipate and address farmers' veterinary and agricultural needs. During their training the *Kamayoq* are in very close contact with the community, which has the important effect of creating trust and making them responsive to their clients right from the start. They gradually build up their client base in the community as their reputation for providing timely and effective advice grows. Farmers pay their new advisors in cash or in kind (e.g. labour, food products). The initial trust the farmers place in them has to be quickly rewarded with evidence of results. Resource poor farmers, like any client, are primarily interested in the benefit i.e. how they will increase their yields and their income. Practical Action estimated that initial average increases in income were typically around 15% as a direct result of technical assistance from *Kamayoq*. Creating a market for technical advisory services has been dependent on both providing a supply of competent advisors (the *Kamayoq*) and creating a demand for the advice by sensitising farmers to the possibilities i.e. creating awareness of the range of services and their associated benefits. *Kamayoq* are encouraged to offer independent, objective advice and to keep their knowledge up-to-date through attending refresher courses, dedicated radio programmes and videos.

### **4. A challenge for *Kamayoqs* - providing quality, impartial advice**

An important source of income for *Kamayoq* is the sale of animal health products, accompanied by advice on how and when to use the product to maximise its effectiveness, with other useful tips on animal husbandry to ensure better overall livestock management and productivity. This model is common all over the world and has proved to be a commercially viable way to deliver advice to farmers. Critics of this approach are concerned that commercial considerations may over-ride other options, whereby extension providers lack objectivity, resulting in reduced choice to farmers. The *Kamayoq* model is seeking to address this by ensuring the *Kamayoq* are able to offer a range of options and explain the pros and cons of each. A radio

programme for *Kamayoqs* not only helps to keep them informed but also creates expectation amongst the farmer-clients on the type and quality of services they can receive.

## 5. The success of *Kamayoqs* - Evidence of Impact

The success of the *Kamayoq* model can be seen at different levels:

- The increased and/or sustained demand for the technical advice by farmers
- The demand from *Kamayoq* for refresher and new training
- Uptake of the *Kamayoq* approach by other organisations.

### 5.1 Benefits to Farmers

The benefits to farmers of increases in production and income are clearly linked to technical advice. For example a recent study in the highland valleys amongst dairy producers showed extremely encouraging “before and after” results. The farmers were clear about the difference that advice had made.

#### **Box 2 Farmers increase income from dairy livestock**

##### **Technical Services provided by *Kamayoq*:**

- Feeding regimes and supply of food supplements
- Milking techniques (such as twice-a-day milking)
- Udder care and hygiene
- Dosing for parasites (98% now dosing compared to 42% before).

##### **Outcomes:**

89% farmers reported that mastitis is now effectively controlled.

Average daily milk yield increased from 6.26 to 8.68 litres.

Monthly milk sales increased by 39%.

A strong link between high levels of dosing for parasites and improved milk yields was reported.

From a 2005 survey of 10% of the *Kamayoq* clients - 220 farmers in 25 villages.

The advice on crop production techniques has shown even more dramatic results. A pilot survey in the Huisachani community in Cusco in 2005 indicates that income from crop production has increased by 73% after receiving technical advice (80% of those receiving services were surveyed).

There is good evidence that farmers are working with *Kamayoq* to find new solutions to old problems, as in the boxed example below.

#### **Box 3 *Kamayoq* advice helps farmers beat animal diseases**

In 30 communities where the *Kamayoq* were active, mortality rates among cattle fell dramatically, partly due to jointly looking for solutions that work. A good example of this process of “Participatory Technology Development” has been the discovery of a natural medicine to treat the parasitic disease liver fluke. Over a

three-year period, the *Kamayoq* and local villagers experimented with a range of natural medicines until they discovered an effective treatment that is also cheaper than conventional medicines.

One study by Practical Action in 2003 highlighted that the women who received technical advice from the *Kamayoq* have increased their income as a result of breeding guinea pigs and pigs, producing improved cheese and sowing bio-vegetable gardens. The women who become financially independent also gained more autonomy and decision-making powers.

## 5.2 Viability of *Kamayoq* businesses

It is important that the new technical advisors, the *Kamayoq*, are able to develop viable service businesses. They need to keep their services sharp and relevant and be continually up-dating their “ offer” and looking for new ways to bring business benefits to their farmer clients.

Evidence that this is a realistic ambition is partly supported by a survey of the *Kamayoq*'s new earning power, shown by the table of incomes below.

Box 4 Service provided by the <i>Kamayoq</i>	Average monthly income from that service
Cattle feeding advice	US\$88
Animal health services	US\$ 200
Irrigation technical advice	US\$ 300 <sup>1</sup>

Source: Preliminary Impact survey ITDG April 2005

The *Kamayoq*'s demand for inputs, such as up-dating their training, are an important indicator of the future sustainability of the services. This has been happening in an ad hoc way. For example, *Kamayoq* are linking together in informal support networks where they can share ideas and knowledge and access services e.g. new information and products. They also feedback to the *Kamayoq* training facility on the particular services in demand and what further training they would like. This in turn helps the *Kamayoq* training facility to continually adapt and develop its training programme for new entrants too.

## 5.3 Up-take of the *Kamayoq* approach by other organisations

The *Kamayoq* model has been tested in different contexts over a period of 8 years and the results have been extremely positive. Other institutes and organizations

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<sup>1</sup> This is not a regular income and depends on the incidence of irrigation projects that demand this type of service in the region of Sicuani or outside. This service is demanded by projects and institutions.

that have a mandate to provide technical assistance to farmers (e.g. National Agricultural Research Institute, National Service for Animal Health and International Fund for Agricultural Development) are exploring using the *Kamayoq* model. The model has the following selling points:

- There is evidence that a viable market for technical assistance services can be developed in challenging contexts.
- The impact of the services on the target groups (resource-poor farmers) can be high.
- The level of investment is minimal but must be of high quality (lessons from the *Kamayoq* schools).

## **6. Challenges for the future of the *Kamayoq* model**

The challenges of developing more and better technical advisory services through the *Kamayoq* approach include:

### **6.1 Scaling up**

There are still thousands of resource-poor farmers in Peru without access to technical advice and inputs. Taking the *Kamayoq* model to ever more challenging contexts is slowly happening. Practical Action started in the highland valleys and then took the approach to the higher reaches of the Andes, where livelihood security is dependent on alpacas and native potatoes.

As the model is developed, adapted and taken up by others there is a challenge to ensure that the quality of technical training and service delivered by *Kamayoq* remains to a good standard. Resources such as videos, technical booklets and content for radio programmes will help to ensure this happens.

Getting a better gender balance and recruiting more women as *Kamayoq* is a challenge. As women acquire better skills for livestock and crop management then they are more likely to be considered for the training programme, but issues of acceptability by the community will take time and specific efforts to address.

### **6.2 Levels of subsidy - how much, for how long?**

The *Kamayoq* model of farmer-to-farmer extension is largely an unsubsidised approach to service delivery. The service model is “pump primed” by subsidising the cost of the training at the *Kamayoq* training. The initial success of the *Kamayoq* showed that it is possible to establish technical advice services that are in-tune with the needs of smallholder farmers so that even resource-poor farmers will become customers, thereby creating a viable market. However, each new *Kamayoq* training facility requires funding, whether by donor agencies or the government.

### **6.3 The future of existing *Kamayoq* training facilities**

The sustainability of the existing facilities depends on their ability to be responsive to the on-going needs of *Kamayoq*.

Practical Action is exploring how to broaden the focus of the *Kamayoqs'* work. Like most conventional agricultural extension provision, the *Kamayoq* have worked predominantly on improving and increasing production at the farm level. The next step is to consider how the *Kamayoq* model could be developed to provide farmers with the business services they need in order to benefit from emerging market opportunities (e.g. market information, market linkages, processing skills, packaging). In the example of alpaca they can play a role in helping the community to understand how the market chain works and assess their options for developing the existing, or possibly new, linkages. However, this idea needs testing since it may be unrealistic for technical extension workers to become market facilitators too.

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