

Public-Private Partnerships to Develop and Deliver Quality Maize Seed (OPVs) to Food-Insecure Farmers in the Hills of Nepal

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Introduction

Maize is the most important food crop in the hills of Nepal grown mainly by small-scale, resource poor farmers. In the hills, where 78% of the maize in Nepal is grown (total maize area-0.876 million ha), the strategic importance of the crop in food security is summarized in the common proverb: "If there is no maize, there is nothing to eat."

Private seed traders so far overlooked hills due to high transaction costs, small market and poor infrastructures. Public sector remained weak to serve resource poor farmers in the hills partly due to decreased public funding and lack of efficiency and equity in the delivery systems. Public sector maize seed supply in Nepal is less than 1% of the requirement (NSB, 2010). As a result, majority of the poor farmers do not have access to quality seed that may improve their livelihoods and food security.

Community Based Seed Production (CBSP) was initiated in an organized way from 2000 under the SDC funded and CIMMYT implemented Hill Maize Research Project (HMRP) with the aim to develop, identify and validate maize varieties and technologies for the benefit of poor farmers in the hills of Nepal. CBSP has been one of the most successful achievements of the HMRP in Nepal (Tiwarei et al. 2010; Domenique et al. 2009; Gastel, 2008 and Mathema et al. 2006).

This paper examines the evolution of public-private partnerships during the last 10 years of HMRP and offers an outline of prospective P3s model applicable in the contexts of hills where market is small, infrastructures are weak and farmers are poor.

Methodology

CBSP groups and cooperatives under HMRP (Number 174) were surveyed during March to December 2010 using outcome monitoring methods. Based on survey information, CBSP groups were categorized into subsistence, semi-commercial and commercial group considering criteria such as annual seed transaction, institutional strengths, infrastructures etc. Five CBSP groups from each category were randomly selected and executives of those CBSP group were interviewed using a structured questionnaire. For qualitative information, case studies of three CBSP groups, one from each category were carried out during August 2011. Descriptive statistics and qualitative analysis were used to see various forms and degrees of public-private partnerships at project and CBSP levels.

Results & discussion

Evolution of P3 in the HMRP's CBSP

Different kinds of P3 in CBSP evolved during the last 10 years of HMRP. The first level of partnerships (1999-2002) developed between CIMMYT and Nepal Agriculture Research Council (NARC). With this collaboration a number of promising maize varieties with improved traits and suitable for the hills of Nepal were introduced and tested using Participatory Varietal Selection methods (PVS). Second level of partnerships (2003-2007) came out when the Department of Agriculture (DoA), joined the initiative. Third level of partnership (2007-2010) advanced where NGOs were on board to disseminate improved maize varieties and technologies. 2011 onwards, the HMRP envisioned the need of private seed companies to participate in the seed production (Fig 3).

P3s impact at community level

Advancement of partnerships at the project level had significant impact on the formation of new partnerships bases at the CBSP level. Farmer Participatory Adoptive Research (FAMPAR) group was created by project to conduct PVS and other trials (1st Stage). FAMPAR groups which showed interest in seed multiplication of the selected varieties were converted into CBSP groups registered under District Agriculture Office (2nd Stage). Matured and motivated CBSP groups turned into cooperative having higher legal and institutional statuses (3rd Stage). Some of the CBSP cooperatives turned out to be community seed company (4th Stage). With increased institutional status from informal FAMPAR groups to community based seed company, there was increased shared capital, infrastructures such as seed collection center, community seed store house, rading machines etc. and partnerships with the traders and other government organizations.

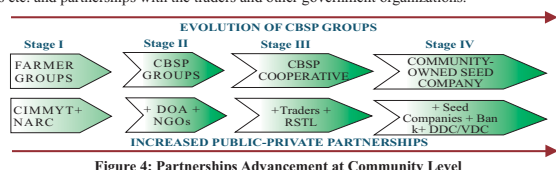


Figure 4: Partnerships Advancement at Community Level



Figure 1: A Typical Maize Production Environment in the Hills of Nepal



Figure 2: P3s Meeting for Improving Maize Seed Marketing in Nepal, 25th August 2011

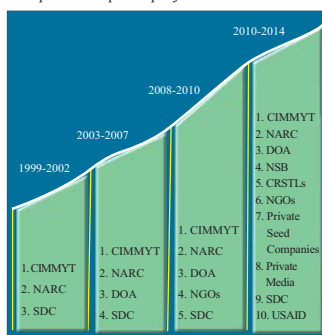


Figure 3: Evolution of P3 in HMRP (2000-2011)

Case 1: Women CBSP Group in Chattiban, Palpa District, West Nepal

DIWO/HMRP (a local NGO) in 2002 approached women farmers in Chattiban, Palpa to conduct maize PVS. Six maize varieties were tested in PVS. From PVS farmers selected Manakamana-3 for higher grain yield, stay green character, tight husk cover, lodging resistant and white grain color. In 2005, women farmers were organized into CBSP Group called Shiva Shakti Women Maize Seed Producer Group with 27 members (male- 8 and female 19). This group is recognized as one of the most successful farmers, group in the district. Besides the support received from HMRP, the group was able to obtain financial supports from Village and District Development Committees (DDC/ VDC) in constructing community seed store house. Seeds are sold after cleaning, grading, tagging and packaging. This group received national and district awards. Some of them include- Award from DADO, Palpa of US\$ 821 (2005); Certificate of Appreciation during District Agricultural Fair (2009), and National Award on the occasion of WORLD FOOD DAY-2010 organized by the FAO and Department of Agriculture (2010). Group members in 2010 earned US\$ 6,900 by selling 7.2 t of improved maize seed.

Case 2: Hariyali Seed Company, a first community-managed private Seed Company in the hills of Nepal

HMRP through TUKI Association (a local NGO) contacted 40 men and women farmers of Thumpakhar VDC-7, SindhuPalchowk district in 2004 to conduct maize PVS and intercropping trials. After a maize season, farmers showed interest in the multiplication of maize of Manakamana-3 variety identified through PVS. Project provided training to the farmers to produce quality seed. In 2005, farmers formed a CBSP group called "Sindhu-Tuki CBSP Group" registered under DADO, SindhuPalchowk. More than 100 farmers (98% female) joined this seed production group until 2007. In 2008, farmers form a cooperative called "Sindhu-Tuki Seed Producers' Cooperative Ltd" registered under government Cooperative Division Office. The CBSP cooperative turned into a Hariyali Seed Company, a first community-managed private Seed Company in the hills of Nepal. Currently 225 farmers are organized into 14 CBSP groups under this Seed Company producing maize seed in 90 ha. They have facilities such as seed collection center, seed store house, grading machine, threshing floor etc. and one agriculture graduate and one Admin-Finance Assistant are employed by Company and Cooperative.

Table 1: Improved Maize OPVs Released in Nepal (2002-2009)

SN	Maize OPV	Yield t/ha	Released year	Germplasm source
1	Mana-3	5.0	2002	CIMMYT
2	Deuti	5.7	2006	CIMMYT
3	Shitala	6.0	2006	CIMMYT
4	Mana-4	6.5	2008	CIMMYT
5	P Makai-1 (QPM)	5.5	2008	CIMMYT
6	Mana-5	5.8	2009	CIMMYT
7	Mana-6	5.7	2009	CIMMYT

Achievements

As a result of these partnerships, seven improved maize varieties were released by the National Seed Board (NSB) for commercial production in the hills of Nepal (Table 1). Several Gray Leaf Spot (GLS) and drought resistant lines introduced from the CIMMYT regional programs in Colombia and Zimbabwe are under testing and four of them including one yellow QPM in process of release.

Likewise, number of CBSP groups and seed production increased significantly from 7 CBSP groups producing 14 t of maize seed in 2000 to 174 groups producing 830 t in 2010 (Ferrara et al. 2011). At least 49,000 maize farmers in the hills of Nepal are benefited from these new maize varieties and technologies (HMRP Half Yearly Report, 2011).

Prospective P3s model

CBSP approach in Nepal has been very successful to produce and deliver quality maize seed to the food-insecure farmers in the remote hilly areas. Well organized CBSP group and cooperative has immense potential to operate as private sector. P3 is a key strategy for long-term sustainability. Each actor in the partnerships must recognize their role in seed system. Fig. 6 presents an outline of prospective P3s model applicable in the contexts where market is small, infrastructures are weak and farmers are poor.

References

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Figure 5: A Maize Farmer in Syangja District in a Cheerful Mode with His Maize Harvest (Sept, 2011)

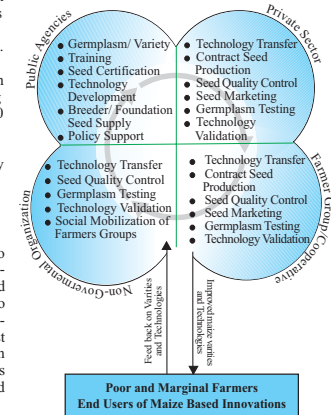


Figure 6: An Outline of Prospective P3s model