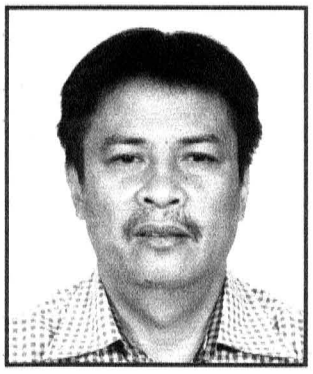

GREEN FARMING STRATEGIC VISION : 12

(Volume 3 Number 6 November-December, 2012)

Seed delivery system: The key for a sustainable pulse agriculture for smallholder farmers

MYER G. MULA*

Scientist - Seed System, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) Patancheru - 502 324 (Andhra Pradesh)

E-mail : m.mula@cgiar.org

Seed is the life-blood of agriculture and the foundation of a successful farming for smallholder farmers. Good quality seeds, which have genetic and physical purity; health standards; high germination and moisture percentage, can increase farmer's production by 20-30%.

The Green Revolution (GR) program has influenced seed supply system in the 70's in vegetables and cereals but not in pulses, which is mainly grown in the drylands. The current seed flow in pulses reveals that marketing and usage from a system of free access and/or exchange is limited to seed growers or seed producers, traders (middlemen) and agricultural government agencies. The flow of planting materials is more on the farming community as farmer seed exchanges and barter is preferred than acquiring seeds by cash. Most often the varieties promoted are the registered seeds or good seeds, limiting the diversity in farmers' fields.

Seed systems vary widely on locality, market availability, and farmer knowledge, and can be informal, formal, or a combination of the two. However, seed system in pulses is currently not well established which has led to poor seed supply, pushing the smallholder farmers to save their own seeds year-after-year or obtain from other farmers (informal seed system). Approximately 80-90% of all seeds used is largely sourced from farmers' own-saved seed which involve saving seed from own harvest, and using seed for re-sowing, sharing, exchanging, bartering and selling. Farmers save seed and use this continuously for 3-4 years with low seed replacement ratio (2-3%) because the proportion of quality seed available each yearis only 10-12%. The varieties used are local landraces, and awareness about improved varieties, seed availability and seed access is poor. Seed is procured off-farm (local markets, relatives, other farmers and government relief agencies) only when necessary as when own seed is not available due to drought, poverty or seed pests/diseases.

The formal seed sector (private companies) can offer only a limited range of varieties and operates within specified quality standards. **Although, the private sector is increasing its pulse share in the market, it is the farmers sector which produces 70-80% of the quality seed.**Private companies mainly respond to commercial incentives on hybrids of high-value seeds but very little in others (*i.e.* pulses). Hence, the existence of developed formal seed sector at the national level cannot guarantee seed security at the community and household levels.

Awareness on the importance in the seed supply system of the farming community should be increased. The farmers' roles in the seed supply system need to be strengthened especially in widening of the genetic diversity in their fields as they become involved not just in seed exchange but also in the improvement and use of their seeds. The system of free access and exchange should be further emphasized to give the farmers full rein on the local seed supply system.

Strategies for effective and efficient seed system for the smallholder farmers

A. Farmer Participatory Seed Production : To effectively be functional, the following must be improved: develop strategies to produce, test, & market; backup institutional support & crop insurance; agreements between farmers & seed agencies; help farmers in adoption of new technology; develop specific models based on geographic and ethnic considerations; implement self-reliance seed programs to decentralize seed business; identify and promote farmer preferred cultivars; encourage seed companies to involve in pulses; encourage policy makers to support pulses seed programs; strengthen capacity of self-help groups; incentives to participating farmers; and develop a quality seed backup program.

There are two models on seed production and delivery that can be promoted depending upon the clients' needs and local situation:

1. **Individual Farmer Level Model** of seed production system where seed sufficiency depicts the farmers to produce own quality seeds.
2. **Community-based seed production model** with the concept of '**One Variety One Village**' where open pollinated crops (*i.e.* pigeonpea) are produce by progressive farmers, NGOs and farmers' cooperatives. This model will prohibit outcrossing thus maintaining the purity, yield and disease resistance of varieties.

B. Integrated Seed Supply System : The combine methods of the formal and informal sectors including local seed supply system are mechanisms to provide seed of new varieties to farmers. The variety use, seed production and storage, and seed exchange mechanisms are the three principal components of a dynamic system that forms the most important seed source for smallholder farmers.

Any seed delivery system requires a regulatory framework as well as a seed policy that considers regulations of an expanding and diversifying seed sector for the benefit of the smallholder farmers engaged in the seed production system.

***Dr. MYER G. MULA** is the Seed Systems scientist of the Grain Legumes Department of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Patancheru, Andhra Pradesh, India. He was the former Regional Coordinator of the High Value Development Program of the Department of Agriculture-Philippines (2004-2007). He has written books like 'Lifting the Level of Awareness on Pigeonpea: A Global Perspective' and published research articles published in the journal of national and international reputes. He has guided PhD students and Research Fellows.