

Highlights

CIAT in Africa

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Scaling up varietal dissemination

Improving farmers' access to seed of researcher-developed varieties is key to improving crop productivity. Yet, scaling up varietal dissemination is a formidable task confronting researchers, extension workers and the formal seed sector throughout the developing world. This problem is especially acute for self pollinating (e.g. common bean, groundnuts, rice) and vegetatively propagated crops (e.g. sweet potatoes, cassava) and crops with limited seed demand (e.g. indigenous vegetables, forages, open pollinated maize). Seed production of crop in these three categories is unprofitable and therefore unattractive to seed companies for several reasons: uncertain and fluctuating demand caused by competition from farm-saved seed, low multiplication rates (grain legumes), transportation and storage difficulties (soybean, root and tuber crops) and strong regionally specific preferences (grain legumes, indigenous vegetables).

CIAT proposes six steps for national research programmes to catalyze the process of scaling up the dissemination of new varieties:

- Prepare promotional materials
- Estimate seed demand
- Develop a strategy for seed multiplication
- Identify partners for dissemination
- Develop action plan with partners
- Follow-up for support to extension and feedback to research

Prepare promotional materials

Promotional materials should be developed for different categories of users, including farmers, extension workers, NGOs and community-based organizations (CBOs), traders (local and regional export oriented) and the formal seed sector. The type of information provided and how it is presented must be user specific. Technical bulletins and brochures are appropriate for extension

agents, NGOs and the formal seed sector. These materials should provide information on varietal characteristics, range of adaptation and limitations, and suitability to areas of the country.

For promoting new varieties with farmers, traders, CBOs, local government agricultural authorities radio and newspaper announcements, radio jingles, cartoons and comics, posters and drama performances are appropriate channels. Messages provided through these media should include the name of the variety (use a local name if possible), yield, cooking time, growth habit, days to maturity, other positive and negative characteristics, range of adaptation, suitability to neighboring countries, and very importantly, where seed can be obtained.

Estimate seed demand

1. Identify main bean growing areas (BGA, e.g. from CIAT Bean Atlas), number of farm households and percent of households that grow beans.

Example:

Population of District A (from statistics bureau)	=	1,500,000
rural population	=	80%
	=	1,200,000
average family size	=	6.0
therefore rural households	=	200,000
% bean growers	=	75% (from farming systems survey)
bean growing households	=	150,000

2. For each BGA, estimate target to be reached in one year (e.g. 20% of households).

Example:

To reach 20% of bean growers with $\frac{1}{2}$ kg seed needs $150,000 \times 0.20 \times 0.5 = 15$ tons

3. Estimate seed needs for each variety.

Example:

Variety 1 (market grain type) is estimated to be popular with 80% of people. Reaching 20% of target with $\frac{1}{2}$ kg seed will need:

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15 tons x 0.80 = 12 tons.

Variety 2 (new or non-market type with attractive features), expect adoption by 40%. Then seed needs = 15 tons x 0.40 = 6 tons.

Develop a strategy for seed multiplication

The essential first step is for each breeding programme to produce regularly adequate amounts of foundation seed. Scaling up activities depend largely on the availability of seed – an obvious point but requires meticulous planning and negotiation with non-research partners. There are several institutional arrangements for multiplication of bean seed: seed multiplication by the formal seed sector, seed multiplication by contract farmers organized by research, NGOs, development project and informal seed multiplication by farmers. A multiple varietal release strategy may call for seed multiplication by many partners. National research programmes should catalyze seed multiplication by making formal sector seed producers aware of new varieties, providing information on seed demand and facilitating seed multiplication by organizing training on seed production. Organizing a meeting of partners who might be involved in seed multiplication is a good way to develop a strategy for seed multiplication.

Identify partners for dissemination

To scale-up varietal dissemination nationally requires many diverse partners. Some partners are obvious – the government extension system and agriculturally-oriented NGOs/CBOs, national farmer associations and community-based seed projects — although each has its drawbacks. Extension systems usually cover the whole country but are often under-resourced; NGOs and CBOs operate only in specific locations. It is therefore important to explore a range of other partners such as NGOs/CBOs working on health, nutrition, home economics and income generation, health and nutrition projects, rural development projects and traders' associations. Establish contact with potential partners through correspondence as well as invitations to field days, workshops and other events. It takes time to develop a working relationship with institutions that are not agriculturally oriented.

Develop action plans with partners

A one- or two-day stakeholders' workshop is a good way to begin planning a national scaling up strategy.

Prepare well in advance, and try a newspaper announcement to widen the participation by organisations not known to research. Organise the workshop in conjunction with a field day to

demonstrate the new varieties. At the workshop, ask each organisation to summarise their activities, aim to get their commitments for decentralised multiplication and dissemination, agree on seed pricing and the seed needs for each organisation. Map and assess this coverage of bean growing areas. Commit your programme to delivering seed on time.

Follow-up

National research programmes should follow up dissemination activities by their partners in four ways: advise partner institutions on any technical problem; guide them in monitoring their seed activities; collate their information at national level each season; and carry out with partners selected adoption and impact studies that help refine the orientation of future research.

Simple monitoring tools to be developed with partner institutions should aim to provide the following information: amount of seed disseminated by variety, season and location, method of dissemination, and positive and negative feedback from farmers and other users. This information should be compiled seasonally by the dissemination partners, but remember that a research person may need to make personal visits to their offices to obtain this information.