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Farmseed

Putting farmers at the heart of the seed system

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SUMMARY

Poor farmers need better and more affordable access to quality seed in order to improve their livelihoods. Over three years, the national NGO Agricultural Advisory Society (AAS) developed an innovative decentralised seed production and distribution system, called Farmseed. Because they operate with a limited budget and staff, AAS formed a strategic network with 64 NGOs and community-based organisations (CBOs), of which half remained viable partners. Teaching their staff to produce rice and quality seed was the main incentive for collaboration. From a large number of rice varieties, communities selected the three most suitable ones during on-farm demonstrations. AAS started selling foundation seed of these varieties in three-kilogram bags to resource-poor farmer groups on a seasonal basis, and trained them in the field. Women's groups received training on post-harvest, while other villagers learnt about quality seed through regular field days and by interacting with the community seed producers. Farmer-produced quality seed easily fetches a 25% higher price than common farm-saved seed. At the same time, community members' exchanges of seed or seedlings for good consumption rice, function more as social glue than as a profit-making business. Once local capacity is built, the system shows promising signs of sustainability by recovering costs through the production and sales of foundation seed. By 2004, modern rice varieties have reached about 20,000 farmers through 2,000 seed producers. Apart from the new Farmseed model, which AAS is now testing for onion and potato seed, this case study offers us some honest insights in the strengths and pitfalls of working with a vast number of local partner organisations.

ACTORS AND NETWORKS

"Rice seed is too bulky for the private sector to be truly bothered about, and the high transportation cost makes a decentralised seed production system a necessity," says Harun-Ar-Rashid, executive director of AAS, which has focused its energy on agriculture and smallholder farmers since 1990. Although Bangladesh is blanketed by the farms of smallholders, organisations that concentrate on them are scarcer than one would expect. That is why it is important to learn how a relatively small NGO like AAS tried to make a difference.

Through many projects AAS has been the driving force in developing a good working relationship with over 150 NGOs and community-based organisations across the country. Capitalising on this strategic network was one of their main reasons for success. But that's only part of the picture. Otherwise, how could one explain that the Farmseed project with a small budget and only about 10-15 AAS staff trained some 7,000 poor farmers and motivated about 13,000 more over just three years?

AAS is unique in having a balanced number of men and women on its staff; all are motivated young graduates from local agricultural universities. They are committed to making this new system of farmer seed production and distribution work, and not just during the project's life cycle. Their eagerness to experiment with pro-poor mechanisms turned AAS into one of the most pro-active partners, implementing nine different sub-projects under the PETRRA project.

Three years ago, AAS engaged 64 partner organisations of which about half still remain in the Farmseed project. As Table 18.1 shows, the partners who stayed with the project were community-based organisations and local NGOs, with ties to the farm communities, but little previous experience in agriculture.

Harun-Ar-Rashid interacts with farmers as much as possible, because they are the ones testing the technologies.

Apart from the elaborate strategic network with mainly local organisations and based on reciprocal respect and mutual benefits, Harun signed official agreements with his former governmental employers. The Bangladesh Agricultural Development Corporation (BADC) was to supply foundation seed, and the Bangladesh Rice Research Institute (BRRI) to provide technical training. Their input strengthened the system.

The stakes are high according to Harun: "The quality control throughout production needs to be ensured otherwise it will be a disaster." If poor quality seed enters at any stage, relationships based on trust will be undermined and farmers will lose confidence.

Table 18.1 Characteristics of partner organisations[1] in Farmseed model

STATUS & PARTICIPATION	NATIONAL NGO	REGIONAL NGO	LOCAL NGO	CBO
Initial number of partners	4	15	31	16
Partners remaining at end of project	1	3	14	13
Drop out rate (%)	75	80	55	19
Number of non-agricultural programmes	High	Moderate	Few/ Moderate (70/30)	Very few
Agricultural programmes	Few	Few	Few	Moderate and small scale
Interaction with resource-poor farmers	Moderate	Moderate	High	Very high
Agricultural graduate or trained field staff	Few	Very few	Very few	None/ Minimal (90/10)
Partnership attitude	Moderate	Moderate	Positive	Very positive
Level of interaction with project	Minimal	Minimal	Moderate	Maximum

[1]Non-governmental organisation (NGO) and community-based organisation (CBO)

Table 18.2 presents the different categories of seed quality. Until the late 1990s, the governmental BADC was the only source of foundation seed, although in theory any reliable source could provide it. By the on-set of this sub-project in 2001, also large NGOs such as BRAC and Proshika produced foundation seed, and passed it on to their contract farmers to rear certified or truthfully labelled seed. A few NGOs have their own seed farms.

Staff shortages at the Seed Certification Agency (SCA) makes that most seed producers cannot get their seed labelled as foundation or certified seed. Instead, they label it themselves as truthfully labelled seed within the provision of the seed law (see Chapter 15). Producers then bear full responsibility with regard to quality. With Farmseed, farmer seed producers produce quality seed, but it is not graded and stored by a third party to be sold as truthfully labelled seed, or certified by SCA to be sold as certified seed. Foundation seed injected into the community becomes a source supporting quality seed production. The seed remains in the community and quality is guaranteed through pressure of the seed producers' peers.

To replicate Farmseed, it is important for an organisation to understand in which niche it can perform best. In the seed sector, smaller NGOs like AAS could best

Table 18.2 Main producers and distributors of rice seed in Bangladesh

SEED CATEGORY	CURRENT PRODUCER	POTENTIAL ADDITIONAL PRODUCER
Breeder seed*	Bangladesh Rice Research Institute (BRRI)	No changes expected
Foundation seed*	Government (BADC) Large NGOs Private sector	Other NGOs with a strong agricultural agenda like AAS
Certified seed*/ Truthfully labelled seed	Government (BADC) Large NGOs Private sector	Regional and local NGOs and more farmer seed producer groups; lack of official certification personnel will result in seed being truthfully labelled, rather than certified
Quality seed	Farmer seed producers	No changes expected
Farm-saved seed	Farmers	No changes expected

*Only these receive certification from the Seed Certifying Agency.

explore a role as foundation seed producer. A small role at first glance, but one of big potential impact for poor farmers.

CURRENT SITUATION OF THE SEED SECTOR

As mentioned earlier, the private sector is mainly involved in producing and selling vegetable seed and only to a very limited extent sells hybrid rice seed from China.

Since the government approved the national seed act in 1997 and signed the new seed rules in 1998, the seed sector in Bangladesh started decentralising production and distribution. BADC still puts its seed on the market via private dealers, but now also large NGOs have captured part of the market and sell seed through their own centres (Figure 18.1).

Until recently, only large NGOs have developed their own seed system, striving for vertical integration of the production process. They sell their seed as part of a credit package at slightly inflated prices compared to the subsidised seed of BADC. In this new system, farmers pay a relatively higher price for the seed, but in return enjoy greater certainty of seed quality and timely availability.

Most poor farmers who are not members of a credit group, however, are not aware of or informed about new varieties and quality seed. To resolve this, AAS developed the Farmseed model whereby foundation seed is provided to poor seed producers through various local NGOs and community-based organisations. The whole approach boosted quality seed exchange between farmers, as will be discussed later.

At the end of the project, AAS started experimenting to see if they could produce foundation seed efficiently themselves. This would further reduce the number of stakeholders in the seed supply chain from four to three.

Farmseed created a shortcut: seed produced by seed farmers became directly available in the community without being channelled back into government agencies or NGOs for processing and marketing. Farmer seed producers are free agents, not hired labourers. They themselves reap the profits from their work and the respect of their neighbours. Peer pressure ensures quality control: they must keep their neighbour-customers happy with the quality of the seed, or go out of business.

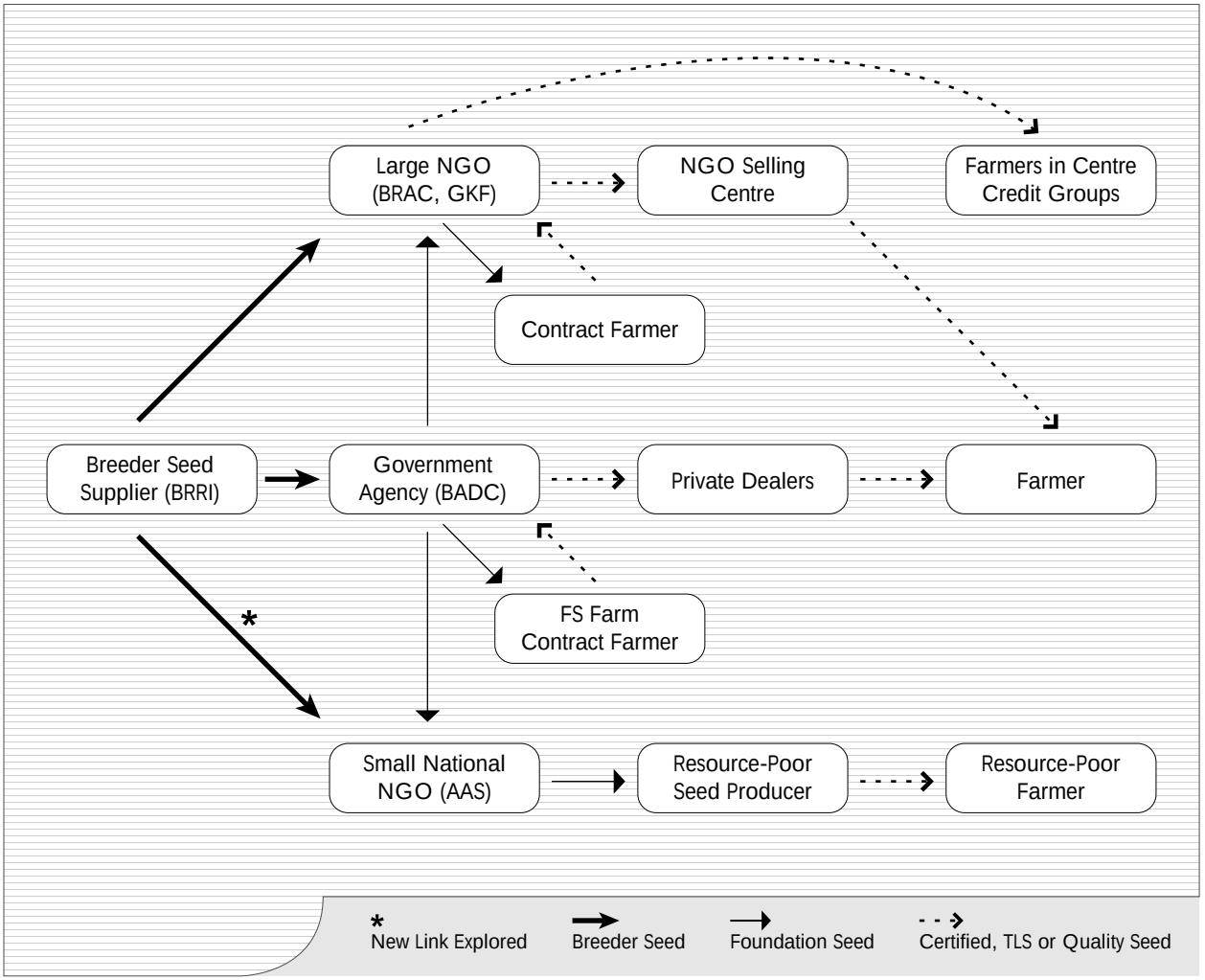

Figure 18.1 Experimenting with inclusion of smaller NGOs in the rice seed chain by AAS

EVOLUTION OF THE MODEL

Historians help us to learn from the past to better understand the present, and avoid making the same mistakes in the future. Archaeologists decipher the life ways of a vanished society by interpreting the remains of its material culture. By describing the past of Farmseed, we can trace significant changes in the philosophy of AAS.

In May 2000, AAS started its first PETRRA project demonstrating modern rice varieties. The PETRRA uptake forum insisted that the emphasis had to be on testing new extension methods, and not just demonstrating technology. At the time, PETRRA had approved about ten projects and its main challenge was to get this new working philosophy across.

During field days at regular intervals, farmers evaluated different varieties. Just before harvest, they expressed their priorities. Of the 18 varieties under evaluation, only three had made the final selection depending on season, soil fertility and field elevation.

The basis for Farmseed was laid; AAS now had a solid understanding of farmers' preferences of varieties. They started training farmers and distributed 10-kg bags of foundation seed, which they purchased from BADC. However, the amount of seed provided proved too high: using one seedling per hill, 10 kg could plant half a hectare. As most fields of poor farmers are smaller than this, they ate at least two thirds of the seed.

Learning from its experience, AAS started to repackage the seed into three-kilogram bags and Farmseed became increasingly recognised as a workable method by project staff and farmers alike. From then onwards, AAS started looking into improving its packaging. Innovations don't just happen; they are made to happen through a concentrated effort.

HOW TO SET UP A FARMSEED MODEL?

Build partnerships and train trainers

Initially, AAS selected numerous partner organisations that were active in five districts in Northeast Bangladesh, all of them local NGOs and community-based organisations. As their staff had little agricultural expertise, training helped build their skills and confidence. In total about 100 staff (including some from AAS) were trained in producing rice and quality seed at the BRRI Training Division. Four batches received classroom and field training for a week, with a tailor-made curriculum.

Build resource-poor farmer seed producer groups

Although many NGOs have set up farmer credit groups in Bangladesh, an important difference of Farmseed is that it uncoupled the link between credit and

inputs. New groups were formed and the community selected its members. Only those who were truly poor were allowed. Farmers were then asked about their interest in becoming trained as a community seed producer. Their wives would be trained as well. Male and female groups were formed with an average of 25 and 28 motivated members, respectively.

Each group selected a coordinator who was not necessarily the same person as the one of the credit group. Group coordinators got enhanced social status, being elected by their community members as smart, trustworthy and to whom they could turn to for advice.

Assess suitable varieties and validate technologies

Foundation seed provides the fuel for the Farmseed engine. Yet, one needs to know whether the engine runs on diesel, petrol or gas. Through on-farm demonstrations, farmers selected the three most promising of 18 varieties by season-long monitoring.

Improved seed storage practices, tested by BRRI, were validated and fine-tuned by roughly 50 women in 25 different villages. Adding one tablet of naphthalene per kg of seed in storage kept the seed free of pests for six months.

Ensure access to foundation seed

Nearly all farmer seed producers requested new foundation seed every season, so ensuring timely access is one of the most important requirements to make Farmseed work. Knowing which fuel is needed doesn't help if there is no petrol station around when you are running empty. Currently, foundation seed can mainly be procured from BADC. Large NGOs already produce their own, but this is used within their own seed production system. If smaller NGOs with a strong agricultural background could purchase breeder seed from BRRI, they could produce their own foundation seed. AAS, along with some other NGOs, is experimenting with this to see if it fits their organisation. This is described in Chapter 17 on the rice seed network.

Resource-poor farmer seed producers cover different age groups. But all are dynamic and motivated to better their lives.

Conduct group training activities

Every cropping season, both men and women learnt about rice and seed production. One training at the community level typically lasted 2-3 hours. Additionally, women-led group extension focused on post-harvest technologies (Chapter 3). In total, about 7,500

members received training (Table 18.3). Later on, and drawing on the experience of the NGO Shushilan, AAS learnt about the importance of training women in all aspects of agriculture, as described in Chapter 4.

Table 18.3 Number of farmers trained under Farmseed

SEX	GROUPS	TRAINING SESSIONS	MEMBERS TRAINED	SEED* PRODUCER	MEMBERS
Men	160	800	4,000	2,000	13,000
Women	125	125	3,500		n.a.
Total	385	925	7,500	2,000	13,000

*Based on performance, the community selects trustworthy high quality seed producers.

Create incentives for all actors

At the start of the project, seed and fertiliser were provided to get poor farmers motivated. The second season, only seed was provided. Once trained, farmers could buy seed from AAS at a price slightly higher than this fixed by the government (BADC). In 2004, seed producers bought their foundation seed at Tk 18 (US$ 0.32) per kg and sold their quality seed at Tk 10-15 (US$ 0.18-0.26) per kg, depending on the season, availability, and purchasing and bargaining power of their clients. Although most seed was sold or exchanged within the community, some took the initiative to sell their seed at markets as far as 20 km from their home.

More than 30 partner organisations contributed about 50 staff members as trainers or facilitators during field sessions, without being paid for it. Apart from the training, no other incentives were given. Once seed producers were established, some of them took over as communication hub between AAS and the other farmers.

In 2003 and 2004, AAS produced 5-10 tons of foundation seed to see if it fits their organisation. If they could produce 20 tons, AAS would be able to recover all its costs and supply seed to its seed producer groups without increasing the price.

"I no longer have to buy, but can actually sell seed," says Shamima Akhter during a village fair in Kishoreganj. "My husband, mother-in-law and neighbours respect me much more now," she concludes with a smile. Shamima was trained by AAS in the women-led group extension project (see Chapter 3).

Control quality

Before harvest, the seed producer groups, AAS staff and other members of the community assess the seed quality during a field day. About half of the 4,000 farmers

trained as seed producers now still produce quality seed (Table 18.3). The quality of their seed easily equals that of certified seed.

Knowing the seed producer eliminates the need for a label. Nikesh Gop, a 26-year old seed producer in Uttar Varuara village in Moulvibazar district illustrates clearly what is at stake: "In boro 2003, my BRRI dhan 28 seed showed poor germination, so I decided not to sell any seed that season. It is better to sell nothing than to loose my reputation in the village." Having learnt how to accurately test seed germination, strengthened seed producers' confidence.

As farmers increasingly became aware that proper drying and storage was needed to maintain seed quality, the demand for plastic drums rose. How AAS dealt with this is described in Chapter 3 on women-led group extension.

Monitor regularly

Receiving feedback from poor farmers, men and women, was made easier by working with partner organisations, especially with the community-based organisations since these are an integral part of the same community. Working with the latter proved more successful than with NGOs.

Let it roll, but keep eyes on the ball

Depending on the variety and local conditions, farmers assigned between 30-70% of their field to seed production. Each seed-producing household used their own specific strategy to produce, store, consume, sell and exchange seed or seedlings. Flexibility is important for farmers in times of distress. Farmers kept about 10-20% of the seed they produced, and sold or exchanged the rest within the community. From its start to 2004, exchange of seed increased from 5% to more than 30% in the project area.

Once the system was established, it was important to keep regular contact with the partner organisations and group coordinators. Foundation seed must be regularly supplied, along with the vast number of ingredients that keep a relationship going. AAS, for instance, involved many organisations in other projects, further strengthening their agricultural capacity.

Bartering in Bangladesh.Women exchange rice grain or seed for various consumables within their community. Not only with their neighbours, but also with village-to-village vendors of hora malsa cooking pots and other consumables.

KEYS FOR SUCCESS

One of AAS's strengths is its small management unit and decentralised offices throughout the country, making it lean,

flexible and able to deliver at low cost.

But their staff also has strong technical expertise in agriculture; Harun has good links to government research and development agencies; and the whole organisation can rely on a well-established network of NGOs and community-based organisations, consciously developed over the past 15 years. Bangladesh is the country of the NGOs, one often hears. The fact is that there are plenty and nearly all lack technical expertise in agriculture, an ideal starting point for collaboration.

On the other hand, recognising your limitations is probably equally important. AAS, having a limited number of staff, continuously tries to liase with trustworthy partners who work with local communities. But despite its long experience in the field, it is still often a matter of trial and error when moving into a new area; only half of the partners remained in the Farmseed project after four years. "Those partners who do not have a sincere interest in agriculture quickly leave, but this is not always easy to tell from the beginning," says Harun. The ones that stayed had strong ties to the community, which AAS needed. Although most lacked agricultural knowledge, they were eager to expand their programme and receive training from AAS.

To develop Farmseed, partnering with community-based organisations worked better than with NGOs, since they live in the community and are farmers themselves, reducing the communication gap with other poor farmers. Besides, and as mentioned earlier on, most NGOs do not have any agricultural expertise.
AAS also reflected on the past to capitalise on its experiences. In the nine PETRRA sub-projects it implemented, the success and lessons learnt from one project were integrated in the others (see Chapters 3, 4, 8 and 9).

Harun is a friendly and respected man who looks after his staff well. He happily takes in every learning experience that arises and that helps build the capacity of his staff members. When two scientists from the UK-based intergovernmental organisation CABI Bioscience recently knocked on his door to try to establish community plant health services, he immediately seized the opportunity and had four of his staff members join in the training course.

AAS is an innovator. It works proactively. Although the Farmseed project still had another year to go, AAS understood that incentives had to be ensured at all levels of the system. For the group coordinators social recognition was enough in the initial phase, but some money would be required to keep them motivated over a longer time. This partly explains why Mr. Harun started exploring the possibilities of producing foundation seed in-house. If successful, the revenues could be reinvested to sustain the system.

DIFFICULTIES, RISKS AND ASSUMPTIONS

Especially in the early stages, capacity building and motivating farmers requires

investment. Under the current mandate, AAS cannot sell anything for profit, so it remains questionable whether a small and cost-effective technical NGO can keep on providing the same level of service to poor farmers without support from the public sector. Surely, AAS would require starter funds to initiate Farmseed in new areas.

Networking is key to the success of Farmseed, yet stronger institutions with more experience in agriculture often stepped out of the partnership. The model may have competed with their vested interests or mutual benefits were not high enough to maintain a synergistic relationship.

Quality control has to be ensured at all levels. In two places, farmers faced problems with bakanae, a seedborne disease that also survives in the soil. It was important to have good links with research institutes and communication with local partner organisations so that seed could be grown in other, disease-free areas. This is one of the reasons why AAS set up Farmseed in Rajshahi in Northwest Bangladesh, where bakanae was not a problem.

Thanks to the swift response of AAS, infested plants are continuously rogued to avoid the disease further developing and spreading to other areas. To strengthen its human capacity in pest and disease management, AAS joined the Plant Health Services Initiative, established by CABI Bioscience (www.globalplantclinic.org).

Farmers can easily be taught to recognise bakanae infested seedlings (they are elongated) and to remove them in the seedbed and field, but not all diseases have such clear symptoms. Basic training in diagnosing plant health problems in the field is often lacking in integrated pest management (IPM) programmes.

Scaling up

Convinced of the potential of Farmseed, AAS recently took this model to Rajshahi using their own limited funds. By testing it in Northwest Bangladesh, AAS anticipates gathering more proof of its nation-wide applicability. In 2004, it started testing the potential of Farmseed for growing onion seed with about 20 farmers, and hopes to apply the model to other crops including potato, garlic and banana suckers.

Conclusion

Over four years, the small yet dynamic national NGO AAS built bridges to both technology providers and poor farmers via 64 non-governmental and community-based organisations. Technologies were validated and adapted; and an effective, low-cost training programme developed.

A major incentive for the partner organisations was the development of new knowledge and skills for their personnel. While AAS had a strong agricultural expertise, few of the partner organisations had, explaining the symbiotic relationships in this strategic network.

Farmseed, a decentralised and community-based seed production and distribution model, developed under PETRRA, impacted on the lives of around 20,000 poor farmers and shows potential for sustainability once the model is established.