

THE ROLE OF SEED GARDENS IN ENHANCING SEED SECURITY AND IMPACT ON USE AND CONSERVATION OF AGROBIODIVERSITY

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The relationship between seed and food security on the one hand, and seed security and conservation of relevant crop genetic diversity on the other hand is generally acknowledged. While the impact of modern varieties on the diversity of the genetic resource base is generally perceived as negative, the experiences in Zambia support existing evidence from elsewhere, showing that modern varieties can also contribute to the diversity being grown and to farmers' food security. This paper presents these experiences and draws some lessons from them that may be relevant for identification of incentives for use and conservation of crop genetic diversity.

The SADC/GTZ project on the promotion of Small Scale seed Production by Self-Help Groups (SSSP) is one of the development agents involved in promoting farmers' access to quality seed in Choma and Kalomo districts in the Southern Province of Zambia with the objective of enhancing local level quality seed provision systems and household food security. The project's approach is based on a two-stage process that entails participatory variety selection and participatory seed production. Up to 1998/99 season, all demonstration trials and seed multiplication plots were hosted during the rainy season.

In 1999 SSSP initiated support for off-season seed production in gardens with farmer groups for modern varieties of open-pollinated maize, cowpeas and greengram. Farmers through project activities have adopted these varieties, supplied by the NARS. Seed supply was however identified by the farmers as a principal limitation in planting crops and varieties of their choice: leguminous crops were frequently lost or of low quality due to storage problems whereas seeds from modern varieties were not available, too expensive or difficult to reproduce. One of the primary objectives for the seed garden project was to gather information on the suitability of seed gardens as an alternative and complementary local level seed supply system.

Seed gardens are meant to act as a source of fresh and healthy seed for the main growing season in summer which starts in November by producing seed during the off/dry season (May to October) using wetlands or other sources of water for irrigation (i.e. dams, stream). The gardens were expected to improve farmer's seed management practices by allowing production of quality seed.

Seed gardens, set up during the off-season (winter) in frost free areas that can easily be irrigated or have enough residual moisture have demonstrated to be invaluable for (i) bulking of quality seed for farmer selected varieties for next crop production cycle (ii)

training farmers in variety purity maintenance when there is minimal opportunity for contamination (iii) verification of seed variety genetic purity and physiological quality, in particular for vigour and germination capacity.

The establishment of seed gardens to develop a reliable source of good quality has proved effective in enhancement of the use and conservation of agrobiodiversity by farmers at farm level. The following elements pertaining to the seed garden project and critical in enhancing the use and conservation of agrobiodiversity have been identified and discussed in the paper.

- Suitable crop and varietal characteristics (meeting farmers' needs)
- Management of seed quality and health
- Improved seed security and maintenance of seed diversity
- Community cooperation
- Food security enhancement
- Enhancement of crop and variety diversity
- Enhancing farming systems diversity

Major lessons learnt

- The use and conservation of seed of modern varieties is enhanced by active participation of farmers in variety selection at the farm level.
- Cultivation of modern varieties does not necessarily lead to the disappearance of local landraces and can contribute to rural food security.
- NARS technology (modern varieties, production off-season) and conditions (wetlands in winter season) may be existing and adapted to local level use and contribute to seed security.
- NARS support of community-based seed programs is critical for the success and sustainability of such programs
- Successful seed production at farm level is facilitated through active well-established CBOs that are essential for effective community cooperation.
- Training and learning through experimentation form essential components in the development and adaptation of technology, and thereby to the use and conservation of crop genetic diversity.