ROLE OF ICRISAT IN NIGERIA SEED INDUSTRY DEVELOPMENT

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Introduction

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world. Covering 6.5 million square km of land in 55 countries, the Semi-arid or Dryland Tropics has over 2 billion people, and 644 million of these are the poorest of the poor. ICRISAT and its partners help empower these poor people to overcome poverty, hunger and a degraded environment through better agriculture. ICRISAT is part of the Consultative Group on International Agricultural Research (CGIAR) consortium. The CGIAR is an informal association of countries, international organisations, and private institutions. It is cosponsored by the World Bank, the Food and Agriculture Organisation (FAO) of the United Nations, the United Nations Development Program (UNDP), and the United Nations Environment Program (UNEP). The CGIAR`s main objectives are to sustain food security in developing countries through support to the international agricultural research systems.

Importance of Seed

The need for strong seed programs has long been recognised by national and international organisations, because only with efficient seed programs can plant breeding research lead to improvements in crop production (van Gastel et al., 1997). Considering the recognition of seed as the most important catalyst for the development of agriculture, (Adetumbi, et al 2010, Niangado, 2010, Setimela, et al., 2004), the Federal Government of Nigeria in 1992 promulgated the National Agricultural Seed Decree (Decree No 72, 1992), with the aim to promoting and stimulating increased access to quality seeds of improved high yielding varieties of field and horticultural crops, as well as the development of a dependable seed industry, to regulate and control the registration of released varieties.

Despite these efforts, the benefits of using improved seeds have not been maximized and the performance of Nigeria's agricultural sector is still poor with respect to the fact that quantities of certified seeds are inadequate, production of breeder and foundation seed is low, and seed distribution and information dissemination networks are poor. There is limited capacity and professionalism by seed companies. Improved varieties are released slowly and this enhances the dominance of the low-yielding local varieties. There are incidences of sale of adulterated and poor quality seeds in the market, lack effective of promotion and marketing strategies by seed companies.

Ajeigbe, H.A., Angarawai, I.I., Motagi, B.N. 2014. Paper presented at Seed retreat ``Transforming the Nigeria seed industry in meeting the Goals of Agricultural Transformation Agenda``, 8-9th December 2014, Chelsea Hotel Central Business Area Abuja Nigeria.

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ICRISAT Participation in Nigeria Seed Systems

ICRISAT participation in the seed systems of Nigeria is similar to other sister CGIAR institute and is mainly catalytic and development. The following are the main contributions:

- Assistance to NARS in the production of breeder seeds of released and promising varieties
- Production of limited quantities of Breeder \Foundation seed for distribution to NARS, public and private companies and development agencies.
- Technical advice on seed production to various organisations (public, and private companies, NGOs and cooperatives)
- Monitoring adoption and seed production of released varieties, assessing constraints to seed multiplication and marketing
- Training NARS and seed sector staff in varieties maintenance, breeder seed production, and other areas of seed technology
- Preparation of training materials (slides, audio-tutorials, videos), brochures and seed production manuals
- Policy advice to governments on seed program development to ensure a continuous flow of improved varieties from researchers to farmers.
- Support special seed production projects

ICRISAT Breeding Activities

ICRISAT in collaboration with National partners develop improved germplasm of groundnut, millet and sorghum which have been released in Nigeria for wide cultivation by farmers. However the impact of these materials has been limited by seed production and marketing constraints. To reach the ICRISAT goal of contributing to increasing sustainable food production ….. requires the development of the development of a more effective seed supply system than exists now.

Groundnut: ICRISAT in collaboration with IAR, and other National and International partners have developed and released several improved groundnut varieties [UGA 2 (SAMNUT 21), M 572.80I (SAMNUT 22), ICGV-IS 96894 (SAMNUT 23), ICIAR 19Bt (SAMNUT 24), SAMNUT 25 and SAMNUT 26, for cultivation in Nigeria. Effort is underway to popularize the new varieties with integrated crop management practices (ICM) through the TL-II project, Groundnut Value Chain of the Federal Government Agricultural Transformation Agenda, and the West Africa Agricultural Productivity Project (WAAPP).

Making available the seeds of improved groundnut varieties at right time, place and quantity has been a challenging task. This is because of the low multiplication rate of groundnut coupled with the high seed rate for planting. Despite an existing seed policy that enables higher prices for seed (vs grain), the seed system is weakly developed. The private sector has had little interest in the sector in the past since farmers recycle seed thereby providing little opportunity to recoup investments in groundnut seed. Enhancing farmer awareness of market-oriented improved varieties and marketing opportunities will improve farmer demand.

Sorghum and Millet: ICRISAT in her pursue of research program focused on the improvement of sorghum varieties and hybrids, in collaboration with the Institute for

Agricultural Research (IAR), Nigeria developed and released two sorghum varieties, ICSV 400 and ICSV 111, and two sorghum hybrids, ICSH 89002 NG and ICSH 89009 NG, currently being used within sorghum-based cropping systems. However due to low level of seed company involvement in the sorghum seed production, the hybrids are no longer in the market. Similar collaboration with LCRI-Maiduguri, IAR-Zaria, IFAD-CBARDP and several CBOs, NGOs and private companies, led to registration and release of improved millet varieties SOSAT-C88, LCIC9702 and LCICMV-3 (SUPERSOSAT), and LCICMV-4 (JIRANI).

Yield enhancing agronomic and other crop management practices and best-bet harvesting and post-harvest handling techniques are available and ready for scaling up. Effort is underway to popularize the new varieties with integrated crop management practices through the HOPE- project, Sorghum Value Chain of the Federal Government Agricultural Transformation Agenda, and the West Africa Agricultural Productivity Project (WAAPP).

ICRISAT Experience in West Africa Seed Alliance (WASA):

ICRISAT collaborates with Nigeria to address the various challenges facing the agriculture and rural sectors of Nigeria, visa vie improving food security, alleviating poverty and safeguarding the environment, through work on its mandate crops – sorghum, pearl millet and groundnut. This was evident in the ICRISAT -WASA Seed Project (2007-2012), supported by USAID, which had worked to establish a sustainable commercial seed industry capable of ensuring that small-scale farmers have affordable, timely and reliable access to high quality seeds and planting materials in the area of;

- strengthening the competitiveness of local seed companies and agro-dealers;
- *Agro-dealer Business* identification and t*raining in Product Usage* thereby building the capacity of agro-dealers in product handling and usage by input-supply companies themselves.
- *Demonstration Plots and Field Days:*
- *Seed Marketing Information which* assisted seed companies and associations to establish seed marketing strategies.
- *Seed Business Management Training thereby* building the business capacity of the local seed company managers through training on business planning, supply chain management and marketing.
- linking smallholders to output markets through agro-dealers and farmer producer groups to commodity traders and crop processors to create market pull for farmer production.
- Organization of the production of breeder and foundation seed of Sorghum and Groundnuts in close cooperation with National Breeders.

Other ICRISAT Seed System Development Related Activities

ICRISAT is collaborating with Nigeria's Federal Ministry of Agriculture and Rural Development as well as the National Agricultural Research and Extension Systems (NARES) in increasing the income generation and livelihoods of farmers by increasing productivity and sustainability of commodity-based systems through increased adoption of farmer- and market- preferred varieties across 17 states of Nigeria through sorghum and groundnut value chains of the Agricultural Transformation Agenda (ATA).

Building on the experience gained over the last two years, and on the measurable impact of comprehensive strategy, ICRISAT has signed an agreement with WAAPP-Nigeria project for Breeder and Foundation Seed production, Agro-dealer Business identification and training, seed business management training and Marketing linkages development for sustainable seed industry in Nigeria. Through this project, breeder seeds of improved varieties of groundnut will be produced by groundnut breeders in ICRISAT, IAR Zaria, Bayero University Kano and Federal University of Agriculture Makurdi. Breeder seeds of improved varieties of sorghum will be produced by sorghum breeders in ICRISAT, and IAR Zaria, while foundation seeds of both crops would be produced by seed companies and trained farmers under supervision of the breeders. Federal University of Agriculture Makurdi. Training workshops are also organised on other aspect of the value chains including production and processing.

Conclusions

ICRISAT is making its efforts in collaboration with various stake holders to improve the seed systems of Nigeria through capacity building and linkages of key actors, popularisation of improved varieties to create demand, production of breeder and foundation seeds and improved crop management technologies to reach the small holder farmers in order to boost the production and productivity of its mandate crops in Nigeria.

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