Technical Report

Training of IFAD-VCDP Farmers on Rice Seed Production Technologies held at Bida, Niger State from 29th June – 13th July 2025

Group photograph of IFAD-VCDP trainees, APOs and facilitators

Background of International Fund for Agricultural Development (IFAD)

The International Fund for Agricultural Development (IFAD) is a specialized agency of the United Nations established in 1977 with the primary goal of eradicating poverty and hunger in rural areas of developing countries. IFAD focuses on empowering marginalized groups, including smallholder farmers, rural women, and youth, to improve their livelihoods and food security. It provides financial support, technical assistance, and policy advocacy to enhance agricultural productivity and promote sustainable rural development. Over the years, IFAD has been instrumental in advancing rural transformation by funding numerous projects globally, including initiatives in Nigeria.

Overview of the Value Chain Development Program (VCDP)

The Value Chain Development Program (VCDP) is an initiative of the Federal Government of Nigeria, implemented in collaboration with IFAD, to enhance agricultural value chains and improve the livelihoods of smallholder farmers. Launched in 2014, VCDP focuses on developing the rice and cassava value chains in selected states which are critical for food security and rural livelihoods in Nigeria. The program aims to boost productivity, strengthen market linkages, and promote income generation through targeted interventions. Key components of the VCDP include capacity building, infrastructure development, and financial inclusion, with a strong emphasis on youth engagement and gender equality.

Capacity Development of Youths in Agriculture through IFAD-VCDP

Youth involvement in agriculture is critical for ensuring sustainable food systems and addressing rural unemployment in Nigeria. Recognizing this, IFAD-VCDP has prioritized the capacity development of youths across participating states, such as Anambra, Ebonyi, Enugu, Kogi, Niger and Ogun States participated in the training program at Bida, Niger State where we have a well-developed rainfed and irrigated lowland for rice production. The program provides tailored training and practical exposure to equip young people with the skills and knowledge needed to thrive in modern agricultural practices, with a specific focus on rice production technologies.

Main objective

The main objectives of the training program on rice seed production technologies are to build the capacity of youths (male and female) in modern agricultural practices and value chain development, increase income and livelihood.

Specific objectives

1. Enhance participants' understanding of PowerPoint as a tool for knowledge transfer.
2. Provide practical, hands-on experiences to complement theoretical learning.
3. Equip farmers with knowledge and practical skills on quality rice seed production technologies.
4. Improve farmers' understanding of certified seed standards and practices for seed enterprise development.
5. Promote best practices for increasing seed yield, purity, and quality.
6. Encourage the adoption of modern seed production modules for agribusiness scaling.
7. Strengthening linkages between seed producers, seed companies, and public sector stakeholders.

Participants

A total of 40 IFAD-VCDP-supported rice farmers from the eight participating States attended the training. These included:

- IFAD-VCDP-supported rice farmers from the eight participating States: Anambra, Benue, Ebonyi, Niger, Ogun, Taraba, Enugu, and Kogi.
- A total of 8 VCDP staff State-level Agricultural Production Officers.

- A total of 10 AFPI Technical resource persons and facilitators from national and international research institutes and private seed companies.

Methodology

- Sessions were interactive, incorporating quizzes, Q&A segments, and case study analyses of the training.
- Videos were embedded in the presentations to enhance comprehension and learning through viewing.

Training Modules

The training covered eight technical modules designed to provide a step-by-step understanding of rice seed production systems. These modules included (see table below).

Training Modules: Rice seed/paddy production technologies

Serial No.	Description	Training contents
Module 1	Description and importance of quality seed	[Importance of Seed; Requirement for Rice seed/paddy production; Rice Ecology (rice production system); Physical Requirement for Rice seed production; Rice Seed/Paddy Quality; Benefit in Planting Quality Seed/Paddy; Characteristics of Poor Seed Quality; Seed Purity; Characteristics of Good Quality Seed; Good Seed/Paddy handling Environment; Key Steps for Good Seed/Paddy Production; Factors Affecting Seed/Paddy Quality; Sources of Seed; Classes of Seed]
Module 2	Seed/Paddy Health	[Seed Health; Disease Development; Importance of Seed/Paddy Health; Seed Health Management – Field; Seed Health Management Post-Harvest; Assessment of Seed Health; Seed Testing; Importance of Seed Test]
Module 3	Developmental Stages in Rice Seed/Paddy Production	[Developmental Stages and Basis for Quality seed/paddy; Seed/Paddy Development; Growth Stages; Vegetative Phase; Reproductive Phase; Ripening Phase]
Module 4	Field Practices in the Production of Quality Seed	[Site Selection; Factors for Land Selection; Nursery Bed Establishment; Land Preparation; Transplanting]
Module 5	Field and Pest Management for Seed/Paddy Production	[Water Management; Benefit of Water Management; Nutrient Management; Weed Management; Pest and Disease Management – Management Options for Rice Insect (Integrated Pest Management)]
Module 6	Varietal Quality Maintenance and Practice	[Varietal Maintenance; Seed/Paddy Quality Attributes (Physical, Physiological, Genetics); Off-types; Requirements for Seed Certification]
Module 7	Harvest and Post-Harvest Processes in Seed/Paddy Production	[Harvesting; Factors that Determines Harvesting Processes; Harvesting Methods; Tips for Optimizing Harvesting; Threshing; Steps to undertake during Threshing Exercise; Losses During Threshing; Drying; Seed/Paddy Drying Methods; Drying Facilities; Cleaning and Winnowing; Cleaning Process]
Module 8	Rice Seed/Paddy Storage	[Purpose of Storage; Pre-conditions for Storage; Storage Systems; Seed Packaging and labelling; Storage hygiene; Seed/Paddy Deterioration]

Classroom PowerPoint presentations and field practical sessions

1. Classroom Training

- **Objective:** To impart theoretical knowledge and foundational concepts related to modern agricultural practices, particularly rice production technologies.
- **Approach:** Structured PowerPoint presentations are delivered by agricultural experts and scientists. Topics covered include land preparation, seed selection, nursery establishment, transplanting, pest and disease management, irrigation techniques, post-harvest handling, and storage.
- **Materials:** Training manuals are used to enhance understanding and engagement. The PowerPoint presentations are interactive, allowing participants to ask questions and discuss real-life challenges and progress in rice seed and paddy production.

Trainees in classroom session during PowerPoint presentations

Trainees in classroom session during PowerPoint presentations, and Q & A.

Outcome

- ✓ Participants gain a solid understanding of scientific and technological advancements in rice farming, preparing them for practical applications.

2. Field practical sessions

- To provide hands-on experience and reinforce theoretical knowledge gained during classroom sessions. Hands-on the job training through practical sessions in addition to the classroom teaching was organized for the trainees, including Agricultural Production Officers and their assistants. These sessions provided real exposure and hands-on experience in agricultural practices.

Practical activities

1. **Overview of Rice Seed Systems in Nigeria:** Seed classes, certification, and seed value chains development approach.
2. **Land Preparation and Agronomic Practices for Seed Production**: Site selection, soil fertility, and land management. Demonstrations on plowing, leveling, and soil testing to optimize field conditions for rice cultivation.
3. **Nursery management:** Establishment and maintenance of rice nurseries, including seed treatment and spacing techniques.
4. **Transplanting:** Practical sessions on proper transplanting methods to ensure healthy crop establishment.
5. **Seed selection and varietal purity maintenance**: Selection of parental materials and field inspection guidelines.
6. **Good Agricultural Practices (GAP) in Rice Seed Production**: Planting techniques, spacing, irrigation, and weed management.
7. **Water management:** Guidance on irrigation systems, water scheduling, and drainage techniques.
8. **Fertilizer application:** application of fertilizer to optimize yield
9. **Pest and Disease Management in Seed Fields**: Integrated pest management (IPM) strategies and recommended chemicals. Identification of common pests and diseases, along with the application of eco-friendly control measures.
10. **Harvesting, Processing, and Post-Harvest Handling**: conducted practical training on timely harvesting, drying, threshing, and storage of seeds.
11. **Seed certification and quality assurance protocols**: Roles of National Agricultural Seed Council (NASC), tagging, and documentation.
12. **Seed marketing and agribusiness opportunities**: Business models, market linkages, pricing, and seed entrepreneurship

Field Locations

- Training sites were strategically selected within farmers production fields operational areas in Bida, Niger State to provide participants with exposure to farmers level rice production.

Training facilitation

- Experienced scientists facilitated the sessions, guiding participants through step-by-step processes.
- Participants were grouped into teams to foster collaboration and peer learning during the classroom and practical sessions.
- Construction of nursery bed during the practical sessions by trainees
- Land preparation methods using power tiller

Training assessment

- Pre- and post-training assessments were conducted to evaluate knowledge transfer and skill acquisition.
- Feedback from participants highlighted significant improvements in their understanding of value chain processes and practical farming techniques.
- Well-coordinated training modules gave a wide understanding on seed production technologies

Rainfed and irrigated lowland production system in Niger State (a)

Rainfed and irrigated lowland production system in Niger State (b)

Establishment of Rice Nursery beds and seeding by IFAD-VCDP Trainees from the 8 States



Trainees on field operations: land preparations using power tiller


Trainees on field practical operations: transplanting group (a)



Trainees on field practical operations: transplanting group (b)




Anambra State ***Ebonyi State*** ***Enugu State*** ***Kogi State***


Nasarawa State *Ogun State* *Taraba State*

Photos of trainees and their APOs from seven IFAD-VCDP State participated in the refresher training on rice sees production technologies in Niger State

Outcomes

- ✓ Youth participants acquire practical skills that can be directly applied to their farms, increasing productivity and profitability.
- ✓ Increased technical knowledge among participants on certified rice seed production practices.
- ✓ Strengthening capacity of VCDP-supported farmers to produce and market high-quality seeds.
- ✓ Enhanced collaboration among farmers, extension agents, and seed sector stakeholders.
- ✓ Participants expressed commitment to applying skills acquired to scale seed production in their respective States.

Impact of rice seed production training for IFAD-VCDP farmers from 8-IFAD-VCDP State in Nigeria

1. Technical capacity of farmers enhanced

- Farmers gained practical and theoretical knowledge on quality rice seed production including land selection, seed selection, agronomic practices, harvesting, processing, and storage.
- Exposure to eight rice seed production modules empowered farmers with modern technologies and best practices to improve seed purity and yield.

2. Strengthening of local seed systems

- The training contributed to building a pool of trained community-based seed producers who can supply certified and quality seeds to other rice farmers within and outside their communities.
- This supports sustainable seed systems within participating States by reducing dependence on external seed sources.

3. Agribusiness development and income

- Trained farmers were equipped to treat seed production as a commercial venture, promoting seed entrepreneurship.

- Improved knowledge in seed certification and market linkage provides new income streams beyond grain production.

4. Contribution to food security and productivity

- Availability of high-quality seed leads to increased rice productivity, better resistance to pests and diseases, and enhanced resilience to climate variability.
- This directly supports household food security and contributes to state and national rice production targets.

5. Strengthened collaboration and networking

- The training fostered collaboration among farmers across the 8 IFAD-VCDP States, encouraging shared learning, innovation exchange, and potential cross-state seed marketing.
- Farmers from Niger State had the opportunity to showcase their indigenous knowledge while learning from others.

6. Gender and youth empowerment

- Inclusion of women and youth in the training expanded their roles in the rice value chain, equipping them for economic participation in seed production businesses.

7. Economic impact

- The program will contribute to the establishment of thriving agribusinesses, boosting the local economy and creating job opportunities.

8. Social impact

- Empowerment of women and youth through targeted interventions will foster inclusivity and reduce rural poverty.

9. Environmental impact

- Promotion of sustainable farming practices will reduce environmental degradation and enhance resilience to climate change.

10. Sustainability

- By involving youths, the program ensures the long-term viability of Nigeria's agricultural sector and reduces rural-urban migration.

11. Support to IFAD-VCDP Objectives

- The training aligns with VCDP’s goal of promoting inclusive, resilient, and market-driven agricultural development, by increasing the adoption of certified seeds for improved rice value chain performance.

Challenges faced by IFAD-VCDP farmers during the training and recommendations

Challenges

Despite the successful execution of the training, several challenges affected the full participation and learning experience of some IFAD-VCDP farmers. These include:

- Late arrival of participants due to poor road affected early sessions of the training.
- The hot and humid weather conditions in Bida during the training period posed discomfort, particularly for participants from cooler regions.
- Although participants gained valuable knowledge, some expressed concerns about limited financial capacity to immediately implement improved seed production technologies in their communities.
- Climate variability poses risks to crop yields and overall productivity; this should be included in the future plans of IFAD-VCDP to support trainees with water pump for dry season seed production

Recommendations

- Scale up mechanization support and ensure equitable distribution of farm equipment.
- Invest in rural infrastructure development to facilitate production and market linkages.
- Strengthen climate adaptation strategies to mitigate risks associated with climate change.
- Create access to bank loans by linking farmers directly to agricultural development banks

Key Achievements

1. Capacity building:

- Over 40 youths, including Agricultural Production Officers and their Assistants, gained knowledge and skills essential for enhancing agricultural productivity.

2. Improved agricultural practices:

- Participants demonstrated proficiency in adopting innovative farming techniques, this leading to increased efficiency and output.

3. Enhanced knowledge transfer:

- The use of PowerPoint presentations enabled effective communication of complex concepts, ensuring better retention among participants.

4. Strengthened value chains:

- The training will contribute to the development of robust value chains for rice, positively impacting rural livelihoods.

Conclusion

The rice seed production training organized for IFAD-VCDP farmers across the eight participating States of Nigeria namely Anambra, Ebonyi, Enugu, Kogi, Nasarawa, Niger, Ogun and Taraba, marked a significant milestone in the efforts to strengthen Nigeria's rice value chain. The training, held from 30th June to 14th July 2025 in Bida, Niger State, provided a comprehensive platform to equip farmers with the technical expertise, practical skills, and agribusiness knowledge required for quality rice seed production.

Over the course of the program, farmers were exposed to eight critical modules covering the end-to-end process of seed production: from varietal selection, land preparation, agronomic practices, rouging, harvesting, seed processing, packaging, to seed certification standards. These modules were delivered through a mix of classroom instruction, practical field demonstrations, and group learning activities, ensuring deep understanding and hands-on experience for all participants.

The training not only improved the technical competencies of farmers but also empowered them to see seed production as a viable business enterprise. This aligns with the overall objectives of IFAD-VCDP to promote inclusive, climate-smart, and market-driven agricultural development. By strengthening local capacity in seed multiplication, the training created a network of community-based seed producers who are well-positioned to meet the growing demand for certified seeds in Nigeria's rice-producing regions.

The participation of women and youth in the training further enhanced the inclusivity and sustainability of the intervention, enabling these groups to contribute meaningfully to seed systems and agribusiness ventures.