



SMART AGRICULTURE TRAINING REPORT

Arbiis, Afgoye | 1 to 5 September

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Executive Summary

Tacab Green Solutions completed a 5-day intensive Smart Agriculture training in Arbiis, Afgoye, from 1 to 5 September. The training brought together 40 participants from 20 local farms for hands-on learning aimed at raising crop yields and promoting sustainable farming.

Expert agronomists coached participants in four areas:

- Shade-net nurseries to protect delicate seedlings and support stronger growth
- Drip irrigation to use water efficiently
- Best seed planting practices to improve germination and crop density
- Disease and pest protection to safeguard crops naturally and effectively

Training combined classroom sessions with practical work in the field, including the layout and installation of drip lines and the care of seedlings in a shade-net nursery.

Key results:

- 40 participants from 20 farms trained over 5 days
- Participants practiced drip irrigation installation, nursery management and planting techniques on site
- Participants prepared plans to apply the skills on their own farms

This report documents the training design, delivery, learning outcomes, challenges and recommendations.

Background and Rationale

Afgoye, in the Lower Shabelle region, is one of Somalia's important farming areas, with fertile land and access to the Shabelle River. Many small farms still rely on traditional methods, which leaves them exposed to drought, irregular rainfall, pests and disease.

Common challenges for small farmers include:

- Wasteful flood or hand irrigation that uses too much water
- Weak seedlings and low survival when sown directly in the field
- Poor germination and uneven crop density
- Crop losses from pests and diseases
- Limited access to practical training and modern farming techniques

Smart agriculture brings together simple, affordable techniques such as nurseries, drip irrigation and good planting practice to raise yields while saving water and protecting the environment.

Tacab Green Solutions designed this training to give farmers practical skills they can use immediately on their own farms.

Objectives and Expected Outcomes

The goal was to raise crop yields and promote sustainable farming practices among small farms in Arbiis, Afgoye, through practical training.

Specific objectives:

1. Teach farmers to build and manage shade-net nurseries for healthy seedlings.
2. Train farmers to design, install and maintain drip irrigation systems.
3. Introduce best practices for seed selection, spacing and planting to improve germination and crop density.
4. Build skills in preventing and controlling crop diseases and pests naturally and effectively.
5. Encourage farmers to apply and share the skills in their own farms and communities.

Expected outcomes:

- Participants can set up a basic shade-net nursery and raise seedlings.
- Participants can lay out and operate a drip irrigation system.

- Participants apply improved planting and crop protection methods.
- Farms save water and report better yields.

Participants, Location and Methodology

The training took place in Arbiis, Afgoye, on a working demonstration farm, so participants could learn in real field conditions.

Item	Detail
Organizer	Tacab Green Solutions
Location	Arbiis, Afgoye, Lower Shabelle
Duration	5 days, 1 to 5 September
Participants	40 farmers
Farms represented	20 local farms (about 2 participants per farm)
Trainers	Expert agronomists from Tacab Green Solutions

The training used a hands-on, learning-by-doing approach:

- Short presentations explaining each technique
- Live demonstrations by agronomists in the field and nursery
- Practical exercises in small groups, with every participant handling the materials
- Group discussions on farm problems and local solutions
- Daily recap, questions and feedback
- Pre-test and post-test to measure learning

Training Programme

The 5 days moved from preparing seedlings to protecting the crop. The day-by-day split below is a proposed outline; adjust it to the actual schedule.

Day 1: Opening and Shade-Net Nurseries

- Registration, opening, introductions and pre-test

- Overview of smart agriculture and farm planning
- Shade-net nurseries: site, structure, trays and growing medium
- Practical: filling trays, sowing and caring for seedlings

Day 2: Shade-Net Nurseries and Seed Planting Practices

- Seed selection, quality and treatment
- Sowing depth, spacing and timing
- Hardening and transplanting seedlings
- Practical: transplanting seedlings into prepared beds

Day 3: Drip Irrigation I: Design and Layout

- Why drip irrigation: water saving and better yields
- Components: main and sub-main pipes, drip lines, fittings and filters
- Field layout and measurement
- Practical: laying out pipes and drip lines on the field

Day 4: Drip Irrigation II and Disease and Pest Protection

- Connecting, testing and maintaining the drip system
- Common crop diseases and pests in Afgoye
- Natural and integrated pest management methods
- Practical: field scouting and identifying problems

Day 5: Practice, Evaluation and Closing

- Review of all modules and farm planning for each participant
- Post-test and evaluation
- Farmers' action plans and discussion on follow-up
- Certificates and closing

Knowledge and Skills Gained

Participants gained practical knowledge in four main areas, plus supporting farm management skills.

Area	Knowledge and skills gained
Shade-net nurseries	Building a simple nursery, preparing trays and growing medium, sowing, watering and protecting delicate seedlings for stronger growth
Drip irrigation	Parts of a drip system, field layout, connecting pipes and drip lines, testing, maintenance and saving water
Best seed planting practices	Choosing good seed, correct depth and spacing, timing, transplanting and improving germination and crop density
Disease and pest protection	Recognizing common diseases and pests, prevention, natural control methods and safe crop protection
Farm planning	Planning plots, managing inputs, simple record keeping and applying the techniques on their own farm

What changed for participants in practice:

- They moved from sowing directly in the field to raising seedlings in a protected nursery.
- They learned that drip irrigation delivers water at the roots and uses far less water than flooding.
- They saw how correct spacing and planting depth improve crop stands.
- They gained confidence to spot pests and disease early and respond with natural methods.

Photo Gallery



Photo 1: Trainer observing participants laying drip irrigation pipes in the field.



Photo 2: Drip lines and main pipes laid out across the training field.



Photo 3: Hands-on practice: an agronomist coaching farmers on fitting and connecting drip lines.



Photo 4: Trainer inspecting a growing crop during the crop protection session.



Photo 5: Checking seedling trays inside the shade-net nursery.



Photo 6: Members of the training team on the farm.

Results, Assessment and Evaluation

Note: the figures below are estimates. Replace them with the actual test and survey data before circulating.

Indicator	Result
Participants trained	40
Farms represented	20
Participants who attended all 5 days	38
Average pre-test score (%)	30
Average post-test score (%)	78
Participants who set up or demonstrated a drip line correctly	36
Participants who prepared a farm action plan	40

Participant feedback (percentage of respondents rating each item good or very good):

Evaluation item	Rating (%)
Relevance of content to my farm	94
Quality of training by the agronomists	96
Practical sessions and demonstrations	97
Venue, materials and logistics	88
Overall satisfaction	95

Challenges and Lessons Learned

Challenges:

- Participants had different levels of farming experience and education, so sessions needed simple language and demonstrations.
- Setting up drip systems needs materials, pumps or tanks and a reliable water source, which many small farms lack.
- Weather, including rain and heat, affected field sessions on some days.
- Five days allowed limited time to cover crop protection in depth.

Lessons learned:

- Practical field work was the most effective way to teach drip irrigation and nursery skills.
- Mixing participants from 20 farms encouraged farmer-to-farmer learning.
- Training works best when followed by farm visits and access to affordable inputs.
- Daily recaps helped participants keep up with the content.

Recommendations and Follow-Up

Recommendation	Responsible	Timeframe
Follow-up visits to participating farms to check nurseries and drip systems	Tacab Green Solutions agronomists	1 to 3 months
Help farmers access drip kits, shade nets, quality seed and other inputs at affordable cost	Tacab Green Solutions with partners	3 to 6 months
Set up demonstration plots so farmers can see results	Tacab Green Solutions	3 to 6 months
Form farmer groups for peer learning and shared equipment	Farmers with local authorities	3 to 6 months
Offer refresher and advanced training on pest management, soil and post-harvest handling	Tacab Green Solutions	6 to 12 months
Track yields, water use and income on trained farms	Monitoring and evaluation team	6 months
Seek funding to train more farms in Afgoye and Lower Shabelle	Management	6 to 12 months

Proposed indicators: number of farms using drip irrigation, seedlings raised in nurseries, change in yield per area, water saved and number of farmers applying natural pest control.

Conclusion

The 5-day Smart Agriculture training gave 40 farmers from 20 farms in Arbiis, Afgoye practical skills in shade-net nurseries, drip irrigation, seed planting and crop protection. Follow-up support, access to inputs and continued coaching will help turn these skills into higher yields, water savings and more resilient farming. Tacab Green Solutions thanks the expert agronomists who coached the training and the dedicated local farmers who took part.

Annexes

- Annex 1: Detailed daily agenda
- Annex 2: List of participants and farms
- Annex 3: Pre-test and post-test questionnaire
- Annex 4: Participant evaluation form

Prepared by: Nature Care Horn of Africa (NACHA)