

Farmforce

a tool in the right time for traceability

Composition of a 10% sampling and analysis of beans and peas entering the European Union from 1st January 2012, placed Kenya vegetable industry market share in the EU on a hanging balance. This was as a result of some beans and peas being found containing some sprays beyond the Maximum Residue levels (MRLs) of not more than 0.02 parts per million. In this milieu Syngenta Foundation for Sustainable Agriculture (SFSA) started offering an innovative web and mobile system, named Farmforce, for managing smallholder farmers producing horticultural crops for export.

"Farmforce is an integrated mobile/ web traceability platform used to manage small scale farmers to enable them access market and adhere to the protocols set for the fresh produce export market ensuring farming risk such as MRL are strictly observed", says Faith Kamenchu, Farmforce Project Manager at the Syngenta Foundation for Sustainable Agriculture.

Farmforce makes it easier for exporters to work with small scale farmers in outgrower schemes. It makes certain that the exporters contracted by overseas chain stores to supply fresh fruits and vegetables are assured of consistent good quality produce, fair transaction costs and most importantly traceability by the smallholders farmers.



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Via this real-time monitoring and tracking system, Farmforce provides a holistic pathway for tracing all activities involved in the growing cycle of horticultural crops and GlobalGAP related information. The app captures data on disease, pest detection, the prescribed chemicals and comparison of inputs used against warehouse stock levels. It also records the maximum dose/hectare, application date, pre-harvest interval (PHI), spray application interval, target pests, yield forecast, environmental hazards, clearance dates for each farmer's block, the specific sprayer and personnel for each operation.

According to Faith, Farmforce facilitates the connection of smallholder farmers to lucrative international markets, giving them an opportunity to earn a stable income. Using the platform it is possible for farmers to meet safety requisites, compliance, social and sustainability standards which many a times lock out these farmers from external markets.

Farmforce has been in operation since May 2013, has been taken up by many companies in Kenya and many more in Africa, Asia and Latin America. They have recently formed a partnership with GlobalGAP and are now a PIP/COLEACP service provider. This relationship increases the reach of the system; reduce the cost of adopting the system for companies in Kenya and the rest of the Africa-Caribbean-Pacific countries. As a result many companies are taking up this innovation which is digitizing and reducing the amount of paper work involved in well organized farming ventures, making traceability very empirical.

"In a day the technical assistants are able to visit fields and capture data for twenty farmers. Let's assume an out grower has more than 50 groups, with more than 70 members growing different fruits and vegetables. Managing their planting, scouting, chemical applications, fertilizer

applications, harvesting and financial information on paper is very complex and cumbersome. Farmforce circumvents this by creating an 'all under one roof' data entry and management experience", Faith demonstrated.

This technology is primarily being used by horticultural exporters such as Kenya Horticultural Exporters (KHE). "These large-scale companies invest a lot of money, recruiting small-scale farmers to produce for export and when there is a problem such as contravention of MRLs, they incur a lot of losses, which are channeled down the whole export value chain. Farmforce is the valuable tool for reducing risks by making this process efficient, reliable and transparent" notes Spencer Morley, Farmforce Implementation Manager SFSA.

Companies that have embraced the technology begin by training their agronomists and technical assistant(s) (TAs). The TAs act as the main intermediaries between the exporter and the contracted farmers. This group is sent to the field to register farmers on Farmforce. Farmers' profiles include a photo, names, national identity number, mobile number, village, as well as specific GPS coordinates of the farmer exact locales. The farm acreage and the number of blocks a farmer has are also captured. At a later time the TAs capture planting records, expected harvest time, harvest projections, chemicals used, reason for application, and the pre-harvest intervals among other details.

"When this data is captured through the TA's mobile device, it is then synchronized posted and hosted in the company's (web) online database which is accessible by the company management. The mobile application is used by the TAs and works both online and offline. Data can be captured even in areas without mobile network coverage and when one gets in a network enabled area, they

are able to synchronize the captured information" says Faith.

There is a common problem in the industry of field officers avoiding going to the fields thus giving wrong information and non-existent farmers to show they have been working. With Farmforce there is no room for this as the company management can look on the website and immediately see which TAs have been capturing what data, where, and for which farmers or blocks. With the farmers' profiles, exporters are better placed to manage the smallholders. Scouting work is eased. When unknown disease strikes, the TAs take photo of the affected plants, upload them online and the problem is acted upon promptly by agronomists who can deploy preventive, inoculation or curative measures promptly.

When exporters contract smallholders, they sponsor them for GAP trainings, provide them with inputs and some startup capital which are deducted from the harvest sale. This is an expensive undertaking and the risk involved high. At times unscrupulous farmers may sell part of the harvest to middlemen or side-buy outside the scheme to buffer their yields.

If this happens, exporters can find that they don't meet the projected targets, thus incurring losses or they end up collecting crops which another farmer has grown using

unapproved pesticides. "Since every exporter is in a contract with a certain client who has specified chemicals to be used at specific rates and the harvest to be done at distinct pre-harvest-interval, side-buying flouts this standard. Many a times tracking this with paper is impossible. But by logically and systematically capturing data, Farmforce smartly predicts farmer yields and projections, which allows the exporting companies to identify where farmers may be selling their raw material to brokers or when they are buying from outside sources", reaffirmed Faith.

By simplifying the management of smallholder outgrower schemes the Syngenta Foundation and the Farmforce team hopes to make it easier for exporting companies to work with and expand outgrower schemes. This is of critical importance to the success of the exporting companies and small holder farmers. The team hopes that in the future the companies that effectively use mobile technology to efficiently work with small holder farmers will have a critical competitive advantage over rivals, in Kenya and abroad, who are still using a pen and paper based systems. Kenya is a center of technology innovation and horticultural production. It is hoped that the combination of these two attributes will combine in form of Farmforce and others for the advancement of the Kenya as a whole over other global competitors.

