

# AGRICULTURAL DEMONSTRATIONS WORK: THE CASE OF RAISING SMALLHOLDER BANANA PRODUCTION IN ZIMBABWE TITLE OF CASE STUDY

<b>Author: Elton Mudyazvivi</b>
<b>Country: Zimbabwe</b>
<b>Sector: Agriculture (Horticulture)</b>

"We have wasted our time...in conducting agricultural and demonstration work...average yields have been ten times the yield on ordinary native lands. The lessons have been preached for Sixteen years, yet the vast majority has made no change..." Emory D Alvord Concluded in 1943<sup>1</sup>. He is widely regarded as "the father" of extension in Zimbabwe due to his pioneering extension work. A year later, a commission on Native Production and Trade for the then Southern Rhodesia observed that "a considerable number made feeble efforts to follow the new methods. But the great majority was indifferent, suspicious or hostile." However, 83 years from the inception of the demonstration approach by Alvord, SNV is convinced that with the right actors, right relationships, right objectives, right methods and approach, demonstration of good agricultural practice holds the promise of transforming smallholder production systems in Zimbabwe. SNV's experiences in demonstrating "best practice" to address marginal productivity and quality levels of banana farmers in Honde and Rusitu Valleys of Zimbabwe supports this vital claim.

In 2007, a livelihoods study by SNV found that 4000 households in Honde and 3000 households in Rusitu Valleys of Manicaland province in Zimbabwe depend on bananas for more than a third of their income, amounting to just over two hundred dollars per household, per year. The same study concluded that it was possible to increase the income four-fold by increasing productivity and quality per acre grown by the average household. This was backed by strong unmet market demand (25 million kilograms) in the formal market, worsened by a 60% drop in commercial supply during the government-backed land reforms. But to take-up this opportunity, a robust and effective method of transforming the mindset and practices of farmers was needed. Informed by experiences of the various extension players in the country, including public and private extension providers, SNV settled for the oldest extension approach. This is the story of how SNV used demonstrations; complemented by other innovative approaches not only to deliver agronomic skills but also to motivate the adoption of best practices in the principal banana producing communities of Zimbabwe.

## CHALLENGE

Since the early 80's, the Government of Zimbabwe encouraged production of plantation crops mainly bananas, tea and coffee. As Mr. Mandiringana, a banana farmer in Honde Valley recalls, "*the government deployed a 'red army of motorcycle mounted extension officers' to advise farmers on production soon after independence*". Tea and coffee took root first before banana production progressively rose with farmers selling to informal markets mainly in Harare. A few farmers were beginning to test the formal market. However, in the late 90's, the public extension system which they had relied upon took a nose-dive before farmers could realize its full potential. In fact, the Department of Agricultural Technical and Extension (AGRITEX) which is the government extension arm under Ministry of Agriculture, received a small budget (4.5% to 7.6% of the total budget between 2001 and 2006) coupled with a massive exodus of experienced staff and lack of technical extension materials. Thus despite clear demand in formal markets, located mainly in urban areas, smallholder farmers could not supply enough quantity and quality of the required varieties of banana varieties at the right time.

<sup>1</sup> Historical Rationale of the Policy of Community Development in the African Rural Areas of Rhodesia, by Gloria C Passmore, Department of Political Science, University of Rhodesia, Salisbury, undated, archive.lib.msu.edu

## CLIENTS

A closer look at production levels showed that smallholder productivity lagged far behind commercial practice. For instance while average smallholder productivity was only 16 tons per hectare their commercial counterparts averaged 14 tons per hectare. This was the result of many inappropriate agronomic practices including: 1) lower than recommended plant populations (1300/ha versus recommended 1900 / ha); 2) multi-stemmed planting stations leading to very small banana sizes (because of lack of sucker control); 3) limited application of fertilizers. From a skills needs assessment, it became evident that farmers needed training in site selection and field layout, planting and plant populations, sucker, weed and pest control, fertiliser application, irrigation, maturity assessment, quality preservation and grading among others. In addition, out of the five varieties grown in the valleys, only two of them was wanted by formal markets (supermarkets, wholesalers, exporters etc). From the two varieties, only thirty percent could meet the qualifying grades in the higher value markets. In the final analysis, the quantity and quality was too low to attract any formal buyers.

Using the value chain approach and based on experience in improving the performance of smallholders, SNV Zimbabwe engaged with the Rusitu Valley Fruit Growers Marketing Trust (RVFGMT) and Honde Valley Fruit Producers Association<sup>2</sup> to address the issues identified and with the view to enhancing their capacity to manage the banana agronomy and business. In line with SNV's strategic thrust to stimulate the development and sustainability of in-country ability for capacity development, other agricultural extension service providers were co-opted to deliver and also learn from the training. These included: Agritex; Honde Valley Smallholder Development Company (HVSDC); Chimanimani Business Trust (CBT); Union project<sup>3</sup>. These extension providers received close mentoring and coaching from a banana expert consultant called Enviro-concepts, hired by SNV to provide "best fit" production knowledge and skills. The consultant had vast commercial experience in banana production gained under the biggest producer in the country.



Fig 1: A consultant teaches the extension team in the field

## METHOD / SNV INTERVENTION

SNV took advantage of the already existing multi-actor and multi-objective scenario of the agricultural extension system in Zimbabwe and pulled the actors together in a coordinated manner to share knowledge and experience, and to work towards an effective and efficient banana value chain. The HVSDC, Agritex, CBT and the Union Project assembled a banana extension team consisting of twelve officers selected on the basis of their motivation levels and aptitude. Each officer was responsible for a demonstration site. By December 2008, SNV had built consensus around developing a banana market chain linking smallholder farmers to formal buyers. Thus any production improvements were to be guided and motivated by the market.

Banana producers in Honde and Rusitu valleys are scattered across mountainous terrain. Just as bulking bananas for the market can be a nightmare, providing extension services can pose many challenges in terms of costs where farmers are scattered across a geographical area. As a result farmers were organized in groups around



Fig 2: A farmer leaving after a demonstration session

<sup>2</sup> Both are membership organisations formed to support farmers

<sup>3</sup> Union Project is a FAO and EU funded project implemented by Zimbabwe Farmers Union, Commercial Farmers Union and has a strong thrust on intensive extension and conservation farming

collection centres, with the help of two local capacity builders-CBT and HVSDC. Group size varied from 25 up to 50 and brought together about 2 000 farmers. This was not without challenges. There were resources for only ten demo plots for over fifty groups and thus the need for selection. The selection was based on accessibility, area potential and farmer motivation levels. The consultant was also able to facilitate importation of improved banana varieties (tissue culture) and other inputs through the biggest banana producer in the country. In the end seven demonstration sites were located in the Honde Valley and three in Rusitu Valley. Each one had about 100 plants. While some plots were sited at a group member's field, other groups (four) chose to locate them at local primary schools.

Once the demonstration plots were started they became exciting forums for learning and information exchange by farmers and students about best practices in banana cultivation and marketing. One woman, Mrs. Mukome of the Risutu Valley was quoted saying "who would have thought that instead of digging a one meter deep planting hole, we can dig only forty five centimeters to plant bananas". "It means I can plant more bananas in a day". All stages of banana cultivation are covered at the demo plots in a period of 13 months. Before each training session with farmers, extension team members were trained by the consultant and equipped with reference material. As training went on, enquiries about tissue culture rose sharply. So strong was the enthusiasm that one old man, Mr Walter Ruwende said "I want to bring the demonstration to my home so I can see it everyday instead of once a week."

As news about new varieties and production practices spread like wild fire in the remote valleys, the extension team had to add alternative ways to accommodate growing numbers of enthusiastic visitors to the demo plots. Learning platforms such as field days and look and learn tours were organized to accommodate farmers coming from far-afield. Even after this, we were clear that there were more, particularly women and children, left out due to the distances. Developing a banana production guide would not only serve those left out, but would remind those trained. SNV facilitated this process using input from the consultant and the extension team's feedback from demonstrations in the field.



Fig 3: Sign at Mandeya demonstration site is hard to miss

By this time, schools with demo plots had begun to teach school children skills on banana production. Thus to build up on this momentum, SNV facilitated the production of banana teaching and learning materials for use by teachers in local schools, with strong participation of local agricultural teachers and officials from the Ministry of Education. The motivation was to have children, themselves future banana farmers, complement the extension team in promoting improved ways of producing bananas.

Alongside training in banana agronomy, SNV was also assisting producers to secure reliable and higher value markets for their bananas. This was in keeping with SNV's value chain approach which emphasizes looking at all stages of the banana market chain from production processes to consumers. This is because without a viable market, farmers could get stuck with excess bananas and lose their investment while their incomes would stagnate or fall. Interestingly, as much as five formal buyers opened up to supplies from the farmers. The new rewards and process of getting products to the market reinforced the demand for banana agronomy skills from farmers.

## OUTCOME

In any agricultural extension mission, the aim is that farmers adopt the demonstrated practice and use it to their benefit. The established plots have demonstrated best practice to farmers who otherwise would not have the information and knowhow. Banana bunch sizes at demo plots are expected at between 25 and 30kgs which is

I feel like carrying this demo plot to my area so that farmers in my place can see this good work" said a visiting farmer at one field day in Rusitu

## IMPACT

significant rise from the average 15kgs in the two valleys. Since the introduction of training in agronomic practices, there has been a remarkable change in attitudes and practices of growing bananas. Farmers are busy rehabilitating their old plantations. The sight of abandoned and multi-stemmed banana planting stations is now remarkably rare. The two organisations- RVFGMT and HVSDC- have not stopped the crusade. They have gone ahead to use their scarce resources to develop eight more demonstration plots responding to demand from the farmers. Farmers have taken full responsibility for propagating the knowledge and skills they have acquired by facilitating free access to their fields by other farmers. While demonstration plots reached out to 2000 farmers, the other complementary methods and learning from each other is estimated to have covered the remaining 5000 farmers and even reached those farmers who were not taking banana as a business. There have been constant enquiries to HVFPA and RVFGMT about the feasibility of procuring clean planting material so as to start afresh.

While it was important for farmers to learn and adopt new and better ways of growing bananas, it was more important to see whether productivity and quality are improving. It was even more vital to see if these changes would increase the income of farmers which was the ultimate objective. There has been a 30% increase in new fields planted using the newly acquired knowledge and knowhow from the demo plots. The majority of farmers express a desire to start afresh with good planting material. Overall, we estimate that so far production has improved by over 33% on the backdrop of rehabilitated plantations and new plantings. As for quality, farmers have reported that using recommended spacing; correct crop maturity assessments, other general hygiene practices and grading have improved quality by 70%. This means that farmers get a higher (about 60% increase) price for a larger quantity of their produce. Buyers have expressed appreciation of this improvement by strengthening supply ties through for example allocating packaging material, transport and technical management personnel for the smallholders. We project that in the next two years, technical knowledge will transform banana production from 21 million kilogrammes in 2008 to 35 million kilogrammes. Associated with quality increases, this implies an annual income of about USD 1000 per household induced by production improvement, itself fueled by knowledge and practices gained through demonstrations complemented by other extension methods. In terms of resources, extension costs averaged USD 7 per farmer.

The experiences in this case give evidence to the efficacy of the demonstration approach to agricultural extension. Other experiences from a joint conservation project implemented by three farmers' unions in Zimbabwe raised yields of maize, sugarbeans, and cowpeas to levels more than three times national averages. In addition, it is emerging that group consumption, pluralistic actor and methodology approaches have the potential to be effective and efficient. Diffusing embedded power inequities between extension providers enhances success but takes more than participation. Other ways like multi-actor approaches, deliberate inclusion of minority groups like school children and local authorities are important factors. Government, Private sector, NGOs and others must acknowledge that pluralistic extension delivery is opportune reality on which to build an efficient approach based on common clear objectives such as the one in this case. Demonstrations are an extension approach that is not commodity specific but has potential to be used across a wide range of commodities beyond bananas. However, as noted by Saito and Weidemann (1990) cited in Haug 1999<sup>4</sup>, an extension system is only as effective as the technology offered. Resources need to be deployed to source best practice technical packages that are "best fit", meaning financially feasible and addressing the most limiting or underlying problems.

## SUSTAINABILITY

Going into the future, demonstration sites in Honde and Rusitu valley will continue to be centres of experimentation and learning for farmers, even incorporating other crops. Extension and school learning materials that were developed in the process such as banana production manual, guidelines for establishing and

<sup>4</sup> Some leading issues in international agricultural extension, a literature review, R Haug, March 1999, The Journal of Agricultural Education and extension

managing demo plots and banana school syllabus will be shared widely with various players. These include the Ministry of Agriculture, the Ministry of Education, the Market Linkages Working Group<sup>5</sup>, other development actors and also with other SNV programmes. Lastly, it seems that practice on the ground is ahead of policy. At this moment, Zimbabwe requires an extension policy that recognizes the pluralistic nature of extension delivery on the ground provides the necessary incentives for agricultural production and monitors the quality of technical packages delivered to farmers.

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<sup>5</sup> Market Linkage Working Group ([www.mlwg.co.zw](http://www.mlwg.co.zw)) is platform that brings together private, public and civic society organisations to promote market access. It operates under the auspices of the Agricultural Coordination Working Group and SCAPEMA. The group is jointly supported by SNV and FAO