

What role  
for Dutch seed  
companies?

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# Better vegetable seeds for smallholder farmers

SMALL FARMERS  
BIG DEAL



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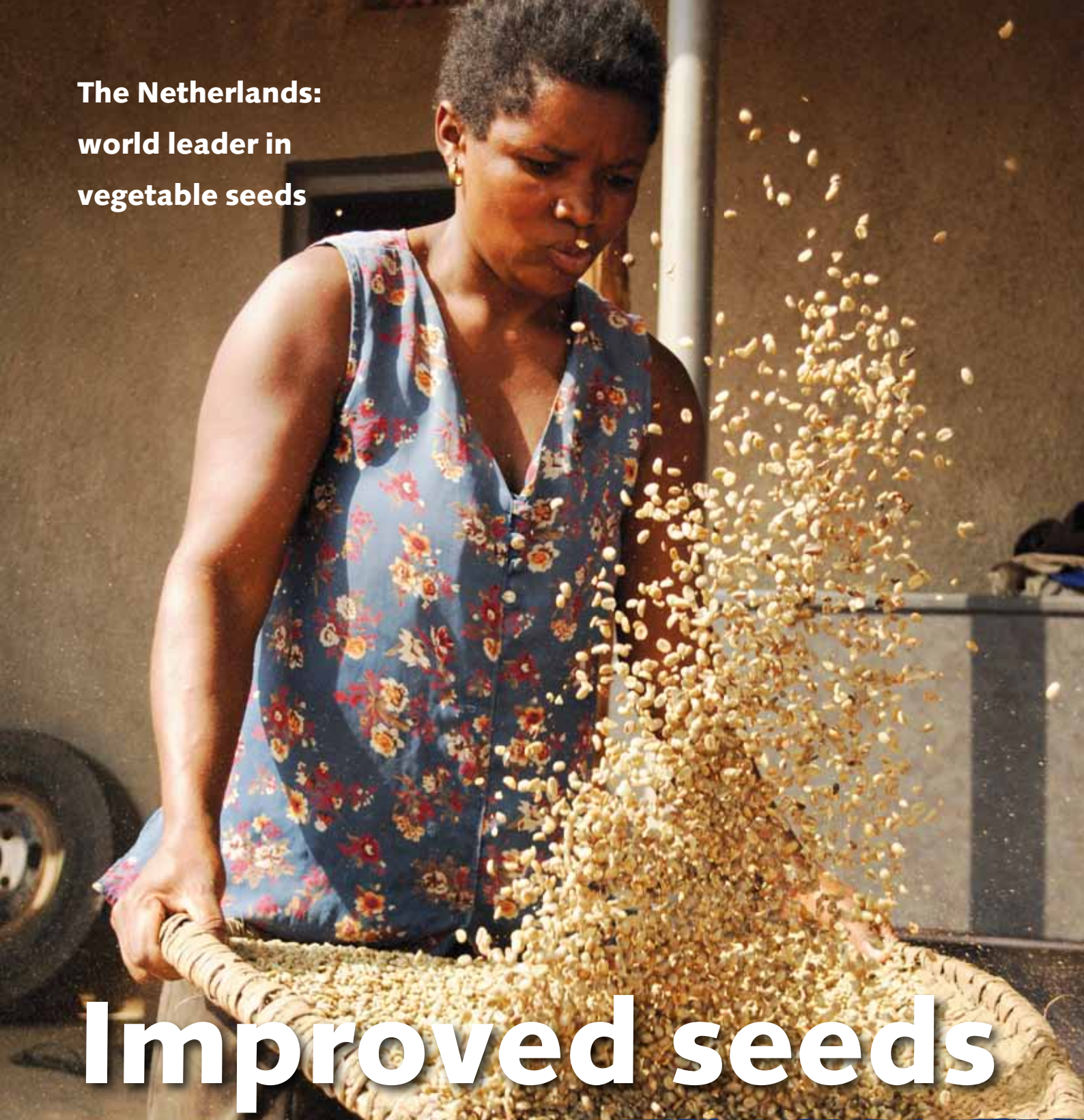
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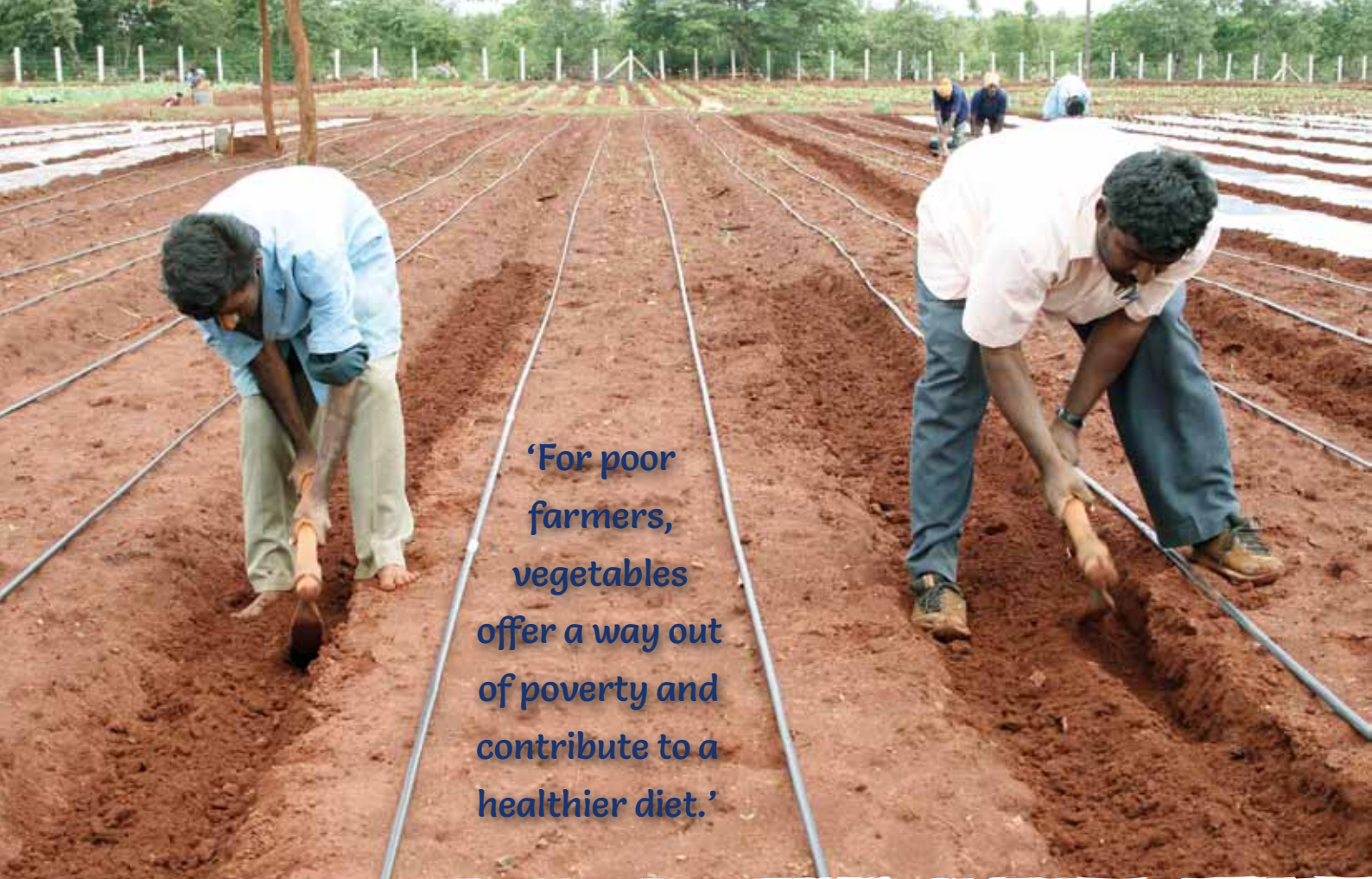
A woman with short dark hair, wearing a blue floral-patterned sleeveless vest, is shown from the waist up. She is holding a large, shallow, woven basket filled with small, light-colored seeds. She is pouring the seeds from the basket, and a large stream of seeds is falling from her hands, creating a dynamic, blurred effect as they fall. The background is a simple, slightly out-of-focus outdoor setting with a wall and a metal pipe.

**The Netherlands:  
world leader in  
vegetable seeds**

# Improved seeds

*do not reach the smallholder farmer of their own accord*

Home to seed improvement companies of different sizes, the Netherlands is a world leader in the area of vegetable seeds. Many of these companies also invest in developing countries. Do they pay enough attention to smallholder agriculture and horticulture? Do they contribute to improved production and better earnings for millions of farmers? Do the companies work together with farmers' organisations and cooperatives? Or are their improved seeds simply too expensive for local farmers? We have been looking for answers.



**‘For poor farmers, vegetables offer a way out of poverty and contribute to a healthier diet.’**



## Access to Seeds Index

In February the first Access to Seeds Index was released. This new Index measures and compares the efforts companies undertake to provide access to seeds to smallholder farmers in developing countries. The Index is a list of companies that will be published every two years.

Ido Verhagen, director of the Access to Seeds Foundation that produces the Index, says that there will, in fact, be three lists: one of global players in agricultural seeds, another one of vegetable seed companies and finally one of regional companies in East Africa. What exactly will be measured?

Verhagen: ‘We’re looking at various criteria. For instance, whether or not the company has a strategy in this area. Whether it has a seed improvement program that is targeting small farmers in developing countries; whether it has good distribution and marketing and is involved in training and capacity building for these farmers.’ The affordability of seeds also plays a role, as does the building of a local seed sector. Another criterion is the way in which companies deal with intellectual property and patents, as Verhagen explains. ‘In Africa, for instance, companies can be more lenient with patents that they would enforce strictly in Europe or the United States.’

All these criteria are the result of conversations with farmers and others during a Round Table Conference in Addis Abeba. For more information, go to: [www.accesstoseeds.org](http://www.accesstoseeds.org)

Traditionally, the Netherlands has always had a strong horticultural sector. Similarly, the government has been an avid investor into seed improvement research and extension work for farmers and horticulturalists. This has resulted in a strong sector and has similarly strengthened individual companies that specialise in seeds and starting materials. Today, the Netherlands can still boast of strong collaborations among farmers, horticulturalists, companies, researchers and the government, for instance in the Topsector Horticulture and Starting Materials. This public-private partnership and its numerous collaborations with non-governmental organisations and farmers’ unions is also known as the Dutch Diamond. Thanks in part to this approach, the Netherlands is a world leader in vegetable seeds. 60 per cent of applications for plant breeder’ rights in the vegetable sector at the European Union’s Community Plant Variety Office [[www.cpvo.europa.eu](http://www.cpvo.europa.eu)] are deposited by entities from the Netherlands. Many companies are expanding.



## Small farmers, Big Deal

With this magazine, Agriterra begins a debate about the role of the Dutch vegetable seed sector in strengthening horticulture in developing countries. This magazine and the debate are part of its new campaign, *Small farmers, Big Deal*. During the two years of this campaign, Agriterra will be in talks with companies, agriculture and development organisations and the Dutch government.

The campaign's central idea is that cooperation between companies and smallholder farmers and their respective organisations will benefit all. More cooperation with farmers' organisations will offer companies that are investing in developing countries a higher certainty of delivery, good quality products or more efficiency in the supply chain. But cooperation also contributes towards professionalising agriculture in developing countries and, by the same token, a healthy economic development. Agriterra helps farmers' organisations and co-operations in

their efforts to professionalise. As a result, these organisations become better partners for companies looking for collaborations.

With this campaign, Agriterra is calling upon agrifood companies, the Dutch government and knowledge institutes to assign a more prominent role in their work to farmers' organisations and cooperatives in developing countries. It also advocates a more prominent role for these organisations in Dutch trade, aid and investment policies. The Bill & Melinda Gates Foundations supports the *Small farmers, Big Deal* campaign. Every year, a couple of new themes will take centre stage. In 2015, the campaign was launched with a paper entitled '*Beyond fair trade. Smallholders as business partners.*' The second theme is seeds.

[www.smallfarmersbigdeal.org](http://www.smallfarmersbigdeal.org)  
[info@smallfarmersbigdeal.org](mailto:info@smallfarmersbigdeal.org)



Photo Bayer

Most of these companies also invest in developing countries, for instance in order to market seeds. Companies may, for instance, sell their seeds through their own local subsidiaries or use distributors. Not all Dutch vegetable seed companies sell in the same market segment. A continuum exists: from the larger companies that do a lot of research and sell more expensive seeds to professional growers to smaller companies that sell cheaper seeds.

The second reason for investment may be seed production. Seeds that are destined for markets in the West or other international markets can be produced in developing countries. Consider, for instance, the arrival of new seed production companies in Ethiopia.

There is a third reason: the decision to invest in local seed improvement companies, in order to improve local vegetables, appropriate for the specific climate and other conditions in those

countries. East West Seed has been doing this with a number of seed improvement companies in Asia for years. Since 2008, Rijk Zwaan runs Afrisem in Tanzania, in cooperation with East West Seed.

### What's in it for the farmer?

How does a farmer in a developing country or an emerging market benefit from these activities? Small farmers in Africa or Asia often obtain their seeds from various sources, as Niels Louwaars explains. He is the director of the professional association Plantum and previously worked at Wageningen University and Research Centre. 'They may use last year's sorghum seeds from their own land, source white maize seed from a local company and vegetable seeds from a commercial firm based in Europe.'

Contrary to agriculture, which is largely self-sufficient, horticulture often is a commercial sector that sells its produce

in urban centres. This makes cash available for fresh cultivation and, by the same token, better seeds. Farmers tend to buy vegetable seeds from commercial firms because they cannot multiply these very easily by themselves. Improving hybrid seeds demands much investment and research.

For poor farmers, vegetables offer a way out of poverty and contribute to a healthier diet for their families and the local population at large. Louwaars explains how: 'Yields can be greatly improved if farmers use hybrid seeds from commercial companies, instead of using locally produced seeds or seeds from their own farms. In horticulture, the environment is adapted to fit the crop. Therefore, improved seeds bring in better and more stable harvests and a product that is more marketable. All this means more continuity for a farmer.'

But commercially available seeds are more expensive and smallholder farmers >



Photo CGIAR



## Top Ten international vegetable seed companies, by turnover

Company	Country	Turnover (\$m)
Monsanto	USA	820
Groupe Limagrain	FRA	620
Syngenta	CHE	550
Bayer CropScience	DEU	410
Rijk Zwaan	NLD	340
Takii	JPN	340
Enza	NLD	250
Sakata	JPN	250
Bejo	NLD	200
East-West Seed	THA	150*

\*Officially based in Thailand

Note: The companies are headquartered in the countries mentioned in the list. However, seed improvement and parts of production and sales of vegetable companies that are part of multinational conglomerates like Bayer, Syngenta, Limagrain and Monsanto, are also based in the Netherlands. Numhems, for example, has been taken over by Bayer. Sluis en Groot is now part of Syngenta. Nickerson Zwaan is part of Limagrain and Ruiters Zaden was bought by Monsanto. Finally, East West is mentioned as a Thai company but has a Dutch history and management.

Source: Access to Seeds Index  
[www.accessstoseeds.org](http://www.accessstoseeds.org)

can only afford these when they cultivate them in the correct way. That is the view of Joep van den Broek, a seed and horticulture consultant at the Integrated Seed Sector Development Program (ISSD) at Wageningen UR. '90% of all seeds must germinate, depending in part on the method of cultivation. Farmers who are using these seeds must attain about 80% of the potential harvest; if they fall below that percentage, they lose money. So they need good methods of cultivation, which requires a lot of training. It takes a few years before a farmer has reached that level.' And methods alone are not enough, since farmers must also be able to sell their produce at a profit. This requires storage facilities, good marketing and logistics and these can only be realised if farmers cooperate.

### Constructing a vegetable sector

Vegetable seed companies confirm that selling seeds is only one part of the business. This is just one part of con-

structing an entire vegetable sector (see also the interviews inside this magazine). The companies go much further, conceiving so-called product market combinations that are fit for the country they are working in. They also organise demonstrations and provide information to farmers about cultivation methods, financing, marketing and other aspects of the production chain.

Constructing a vegetable sector in a country often goes beyond the sector itself. Companies often contribute to this in public private projects (PPPs) that may involve the in-country authorities, non-governmental organisations, researchers and even competing businesses. The Dutch government invests in vegetable sectors overseas directly from The Hague or through its embassies. Louwaars welcomes these activities: 'Thanks to its knowledge and experience, the Dutch vegetable seed sector can contribute meaningfully to food security and poverty reduction.'

Hans Smolders works for the Netherlands Enterprise Agency (RVO). He says that the Dutch government supports research and development projects and also co-finances 16 international PPPs that involve seeds. The majority of these programs are part of larger agriculture development schemes. In five large projects of the Facility for Sustainable Entrepreneurship and Food Security (FDOV) seeds feature prominently; four of those concern growing vegetables. The Dutch Good Growth Fund (DGGF), which promotes investment in small and medium enterprises in the Netherlands and overseas, does not yet have programs that feature seeds or vegetable cultivation. In the past, though, the Private Sector Investment Program did support seed companies.

### Government support

Marcel Vernooij works at the Dutch Ministry of Foreign Affairs. He is responsible for policy coherence between food security and support for private enter-

*‘Improved seeds bring in better and more stable harvests and a product that is more marketable. All this means more continuity for a farmer.’*



prises. He welcomes the internationalisation of Dutch seed companies. ‘I’m especially pleased with the long-term investments in local subsidiaries and the improvement of specific local varieties,’ he says. Vernooij stresses that the Dutch government not only supports these developments with money but also with diplomacy, through the embassies. In this way, it wants to contribute towards creating a good business climate and strike a good balance between protection for seed growers and farmers’ access to seeds. Good and relevant legislation helps in that respect and here the Dutch can also help out.

How many smallholder farmers are being reached with this policy and these projects? ‘If you say that you want to target every smallholder farmer in Africa then, yes, these projects will appear to have little impact. But you can also think: we start somewhere and then we’ll scale it up. The emancipation of the vegetable sector in Africa is an enormous task, not

something you’ll achieve overnight. But something is already happening and this market also has great potential, especially a growing middle class. More and more supermarkets are looking for good quality vegetables.’

It is not a conscious choice on the part of the government to not fund seed projects in the DGGF, Vernooij insists. ‘On the contrary, we very much welcome good proposals.’ Similarly, the fact that mostly larger companies benefit from co-financing within the FDOV is coincidental. ‘There are possibilities for smaller projects. Both DGGF and FDOV have their focus firmly on small and medium-sized enterprises. But on condition that we receive good proposals.’ Vernooij concludes by saying that a new approach is in preparation, which will invite companies to a direct talk with RVO first, followed by an offer of tailor-made options.

### **Farmers’ organisations**

Plantum director Louwaars thinks that farmers’ organisations can play a role in sharing knowledge and doing extension work but also in terms of joint produce marketing and logistics. ‘A single farmer who rides a crate full of tomatoes to market on his bicycle is not in a position to arrange those things,’ he says. Most seed companies are not yet engaged in these activities but some are seeing opportunities here.

When one is developing markets it is useful to distinguish between very small farmers who will only be able to buy affordable seeds on the one hand and professional horticulturalists on the other. A smallholder does not change into a top horticulturalist in a day. Companies but also governments pursuing policies aimed at developing the production chain should not only be focussing on the top echelon. They must also offer something to growers who have not advanced this far. ●

# Market leader in Asia for tropical vegetable seed

The Dutch company East West Seed, the first to improve vegetable seeds for smallholder farmers in Asia, has extended its activities into Africa. Providing information to farmers is important for the company, but costly. 'When we have done our extension work with farmers they can buy their seed somewhere else.'

**B**etter seeds and better cultivation techniques bring higher yields and more income for smallholder farmers. For them, this means being able to send their children to school and build a better home.' Words from Maaïke Groot, the daughter of Simon Groot, founder of East West Seed. She represents the company in the Netherlands; most of the business is concentrated in Asia.

'My father is a sixth generation seed farmer. In 1982, he started a new company, improving tropical vegetable seed. Market experts at the time thought that he had gone mad. They did not believe he could ever be successful in a market that consisted of smallholder and often poor farmers. That's all changed: almost all vegetable seed companies are working in Asia these days.' It took almost ten years before the company started making returns on investment through sales. The first success was *bitter gourd*, a cucumber variety that is used a lot in Asian kitchens.

Seeds are sold to distributors, who re-sell to thousands of agrodealers or seed shops. These are traders who run tiny

country stores. Groot specifies: 'Farmers cooperatives are not one of our target groups but they do buy their seeds from us. As a result, they give us a tremendous opportunity to spread information to farmers.'

## Extension work

This extension work is an integral part of the work that East West Seed does. The company does not only sell seeds, it develops the market by teaching farmers better cultivation techniques. Smallholder farmers can recover the cost of their seed inputs provided they use the correct methods. Think in terms of fertilization, disease and pest control and yield planning. In order to bring the average farmer to this level, information and training are necessities. To this end, East West Seed employs about one hundred people. They give demonstrations, showcasing model farmers.

'The problem is scaling up to larger groups of farmers,' says Groot, adding: 'It's expensive. There are calculations showing that we pay anything between 100 and 200 dollars to bring the information to one single farmer, who then buys maybe 20 dollars worth of seed from us. Of course we have a commercial interest in doing all this work but there is a lot of competition from Asian and other seed companies. And when we have done our extension work with farmers they can buy their seed somewhere else. Extension work serves a collective interest and traditionally in most countries this kind of activity is done by the government.'

## Public private projects

East West Seed works in various so-called PPPs (public private projects). Its partners include local governments in Asia but also the Dutch government, with which it cooperates in two PPPs, worth €4.7m and €1.2m respectively. These two projects



Photo VegImpact





## East West Seed in figures



Photo East West Seed

- Personnel: 4,000 especially in Asia
- Market leader in Indonesia, The Philippines, Thailand, Sri Lanka and Myanmar. Also active elsewhere in Asia, in Africa and Latin America.
- Some 30 million farmers are growing seeds supplied by East West Seed
- Annual turnover: €20m, of which 15% goes to improvement
- 12 laboratories in 7 countries
- 12,000 contract farmers produce seed

are conducted within the FDOV framework (FDOV, a Dutch acronym, stands for Facility for Sustainable Entrepreneurship and Food Security). The larger of these is Sevia, a collaboration of East West Seed, Rijk Zwaan and researchers from Applied Plant Research (PPO) at Wageningen University and Research Centre (WUR). Another partner for this project is Afrisem in Arusha, Tanzania, a joint venture between East West Seed and Rijk Zwaan.

The other FDOV project is called Fair Planet. At its core are tests designed to find locally adapted varieties in Ethiopia. East West Seed also works with Dutch NGOs such as Cordaid and ICCO and participates in a 2Scale program, which is aimed at



## Child labour in Indian seed companies

**At the end of 2015, the India Committee of the Netherlands published a critical report following research that highlighted a problem: many vegetable seed companies in India allow their seeds to be produced by local companies and farmers using child labour. Women and children were allegedly underpaid.**

**It was suggested that East West Seed was part of this problem. The company has issued a statement acknowledging the problem. It says that its objective is to have child labour eradicated completely. Among the initiatives it takes to that end are training sessions, jointly organised with the India Committee of the Netherlands, raising farmers' awareness of the existence of the child labour problem. Internal audits at the company suggest that the actual figures are lower than those mentioned in the 2015 research report.**

assisting small businesses in Africa to better organize their food chains. Like Sevia, this program receives support from the Dutch Ministry of Foreign Affairs. Finally, East West Seed has benefited from the Private Sector Investments Program (PSI); it is currently involved in a PSI project that is assisting a fledgling seed processing company in Myanmar.

### Rigid rules

Groot enjoys working with the Dutch government, be they the Netherlands Enterprise Agency (RVO) or embassies. 'As far as we are concerned, trade and aid in combination is a more sustainable proposition that aid on its own,' she says. There is, however, in her view, a dearth of policy makers in The Hague who know the local situation well and are not bound by rigid rules. 'Monitoring and evaluation can be difficult to execute at times. The criteria put forward cannot always be met on the spot and in practice,' concludes Groot.

She has less time for DGGF, the Dutch Good Growth Fund, a facility set up by development minister Ploumen to support Dutch and local small and medium enterprises in developing countries. 'The DGGF offers a guarantee when we borrow money from a local bank. That, for us, is not the problem. The problem is that the interest percentages we must pay on local loans are often very high.' Furthermore, says Groot, the DGGF does not offer any solutions for risky investments, since it does not offer to participate in investments, like the PSI does.

Among the other East West Seed working partners are, apart from policy makers and NGOs, many scientists, especially those at WUR. In September 2015, the WUR University Fund awarded the Mansholt Business Award for Sustainable Entrepreneurship to Simon Groot. 'A recognition of our good collaboration,' comments Maaïke Groot. ●



## Lower prices – more vulnerable farmers

Farmers in Java are pleased with improved vegetable seeds, as they are better adapted to extreme weather and guarantee higher yields. How much they pay for those seeds is not their biggest problem, as journalist Bambang Supriyanto writes. They are more concerned with the prices their vegetables fetch.

Indonesia must import food to meet rising domestic demand. In the past few years, the country imported on average 20 per cent of all the vegetables it consumes. Think about products like garlic, peppers, potatoes and red onions. The seeds for those crops are also imported and this renders Indonesia vulnerable, especially to price increases abroad.

PT East West Seed Indonesia (Ewindo) is a top player on the Indonesian vegetable seed scene, with a market share of 40 per cent. Ewindo is a 50-50 joint venture between East West Seed and Enza Seeds. President Director Glenn Pardede says that Indonesia needs to increase its own seed production. 'We develop, produce and sell seeds for local crops. These are all grown by local producers. Our mission is to make affordable quality seeds available to farmers, so they can raise their income. In this way, we also help more people gain access to vegetables.'

Ewindo prefers to work with farmers' cooperatives but the company does not shun individual farmers. It trains seed farmers, who go on working for the company in exclusivity. It also trains farmers who grow fruits and vegetables

for the market, using Ewindo seeds.

We spoke with several farmers for this article. They are satisfied with Ewindo seeds, especially in terms of quality, productivity and level of adaptability to the often extreme weather conditions. The prices they pay for Ewindo's seeds do not, in their view, differ that much from those offered by other companies. But price is not the decisive criterion. What farmers spend on seeds does not, on average, surpass 3 to 5 per cent of total production cost.

### Hot peppers

Saikad is the foreman of the 150 member farmers' cooperative Tunas Mulia Kabupaten Pandeglang, in Banten Province. Since 2002, the cooperative has been buying seeds at Ewindo. Its members own, on average, 0.1 hectares of land each. Saikad himself grows cowpeas, watermelons, cucumbers and other vegetables. This season he has been growing chilli peppers for the first time, also using Ewindo seed. Saikad has chosen Ewindo for reasons of quality and yield. 'We have had fifteen harvests this year,' he says. 'Previously, with other seeds, we only had nine.'

Asep Fachruddin, from Sunia Village, Majalengka in West Java Province, is equally pleased with Ewindo. He mostly grows Spanish peppers because they do well in the local climate. Over the past few years, he has increased his acreage from 0.4 to 1.5 hectares. 'Usually, we plant the peppers in October; the first harvest is in February. On the whole, we harvest 10 to 12 times until December.' Fachruddin is convinced that seeds from Ewindo lead to better yields, as compared to those from other companies.

The biggest problem for the farmers is the price their produce fetches. Many farmers harvest in the same period, with falling market prices as a result. The seed growers do not have this problem; they sell their product to East West at a fixed price. But the farmers who grow for the market depend on the whims of that market. The state company Perum Bulog does not consider vegetable prices a priority. Sometimes it buys chilli peppers to stabilise prices but it has never done this for other crops like beans or cucumber. The state company is more concerned with "socially sensitive" products, like rice, meat and cereals. ●

# Smallholder farmers supply supermarkets

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**For one group of farmers in Sulawesi this is a breakthrough: for the very first time they send their carrots straight to supermarkets in the capital Makassar. All this thanks to a Dutch-Indonesian research program called vegIMPACT. Bringing tens of thousands of growers to the same level through training is the ambition for the next few years. Will they manage to deliver sufficient quantity and quality produce, as agreed?**

In the old days, the farmers of Enkerang in South Sulawesi did what many of their Indonesian colleagues did: grow coffee and a few vegetables (cabbage and tomatoes) on an area of perhaps one hectare, on their own. That was before they jointly began growing carrots for the Makassar supermarkets. 'Thanks to a group training, ten farmers now supply packaged carrots to a trader,' reports Huib Hengsdijk, a specialist in agrosystems at Wageningen University and Research Centre (WUR). 'Highest quality carrots go to the supermarkets; slightly lower quality goes to the local markets.'

Hengsdijk is research coordinator for vegIMPACT, the Dutch-Indonesian research program that organised the group training. The program is a joint creation of six Dutch seed companies and partners from Indonesia, including the Vegetable Research Institute (Ivegri) and Fresh Dynamics Asia. Together, they support Indonesian farmers in growing and marketing vegetables.

## Product market combinations

The "Enkerang carrots" for the Makassar supermarkets is one of the product market combinations vegIMPACT has realised. Another is a new beef tomato from the Dutch seed company Rijk Zwaan, which goes to supermarkets in East Java. Another group of farmers grows and sells hot peppers for export to Singapore.

Between now and 2018 vegIMPACT wants to train some ten thousand vegetable growers, using similar methods to those in Enkerang. That will be the job of the 130 salespeople of East West Seed. 'These are the people the farmers often ask for advice,' Hengsdijk explains. 'After we have trained them, they can do so with more confidence.' Training for salespeople takes three days.

## More cohesion among growers

The carrot seeds for the Enkerang farmers are supplied by Bejo Zaden. 'Our choice is to be close to our customers,' says Luc Driessen, who is a manager for the company in Singapore. Bejo Zaden has a single distributor in Indonesia, which employs 150 people. They help the farmers with advice, in Enkerang and elsewhere.

Creating a produce chain requires a lot. Thanks to vegIMPACT, the Enkerang farmers now have a contract with a buyer. Their carrots fetch a guaranteed price, provided they supply the agreed quantities. The carrots may not contain insects and insecticide residuals may not exceed Indonesian norms.

## A joint planting scheme

The crucial step in this program was found to be a joint planting program: during the first week the carrot seeds are planted by the first farmer; the second week it is the turn of the second farmer, and so on. The program guarantees a steady supply to the supermarkets. 'One farmer cannot grow enough, so there must be cooperation,' Driessen says. The ten farmers in Enkerang are just the beginning, he thinks. 'We're in it for the long haul.'

The carrot farmers do not have a joint warehouse, computer or weighing machine. They go to one farmer's house to gather, clean and sort the produce. Hengsdijk: 'Group cohesion is getting stronger. They now use the joint training sessions to improve their mosque's administration as well.' One again he stresses the importance of cooperation: 'The chance to success is best among farmers who have a proven track record of cooperation.' ●

# When does the smallholder farmer

Rijk Zwaan is the world's fifth largest vegetable seed business. Its local subsidiary Afrisem wants to supply local hybrids to African horticulturalists in cooperation with East West Seed. Is this something more than a sympathetic development project?

Rijk Zwaan sells vegetable seeds to professional growers in over one hundred countries worldwide. Its markets are in Europe and the United States and in Asia and Latin America, where the Dutch multinational sees potential for growth. In the last few years Rijk Zwaan has also developed an interest in African smallholder farmers.

Heleen Bos is responsible for projects in developing countries at the company's modern (and green) headquarters in De Lier. She is also manager for the organic produce markets. About developments in Africa she says: 'Market expectations are enormous but a lot remains to be done. And it demands an approach along project lines.'

## African vegetables

About ten years ago, Rijk Zwaan was

doing research in Tanzania into the provenance and quality of seeds the farmers were using. Bos recalls the results: 'Purity, germination and yield were poor. It also emerged that the varieties in use had never been developed for local horticulture, so they had never been adapted to the local situation. A lot needed to be improved.'

In 2008, Rijk Zwaan started Afrisem, a seed improvement company. It is based in Arusha, where the company carries out three improvement programs, in collaboration with East West Seed. For the first time, East Africa has a facility that works to enhance African vegetables that are appropriate for the local climate and can resist local pests and diseases. Examples include the African aubergine, hot pepper, tomato and a local cabbage known as *sukuma wiki*.

# profit from using better vegetable seeds?

It is the place where Rijk Zwaan's seed improvement specialists train their African counterparts. Extension workers collaborate with farmers to test new varieties under different circumstances. This takes time: the first new aubergine will be marketed in early 2016; other crops will follow later.

## Distribution

How to sell the seeds to the farmers? That remains an open question. Up to now, Afrisem has been sending the seeds by mail after the order has been placed. Working with local dealers in small roadside shops does not meet with Bos' approval. 'If that happens we lose sight of seed quality and we cannot offer any support either.' In Kenya, Rijk Zwaan has

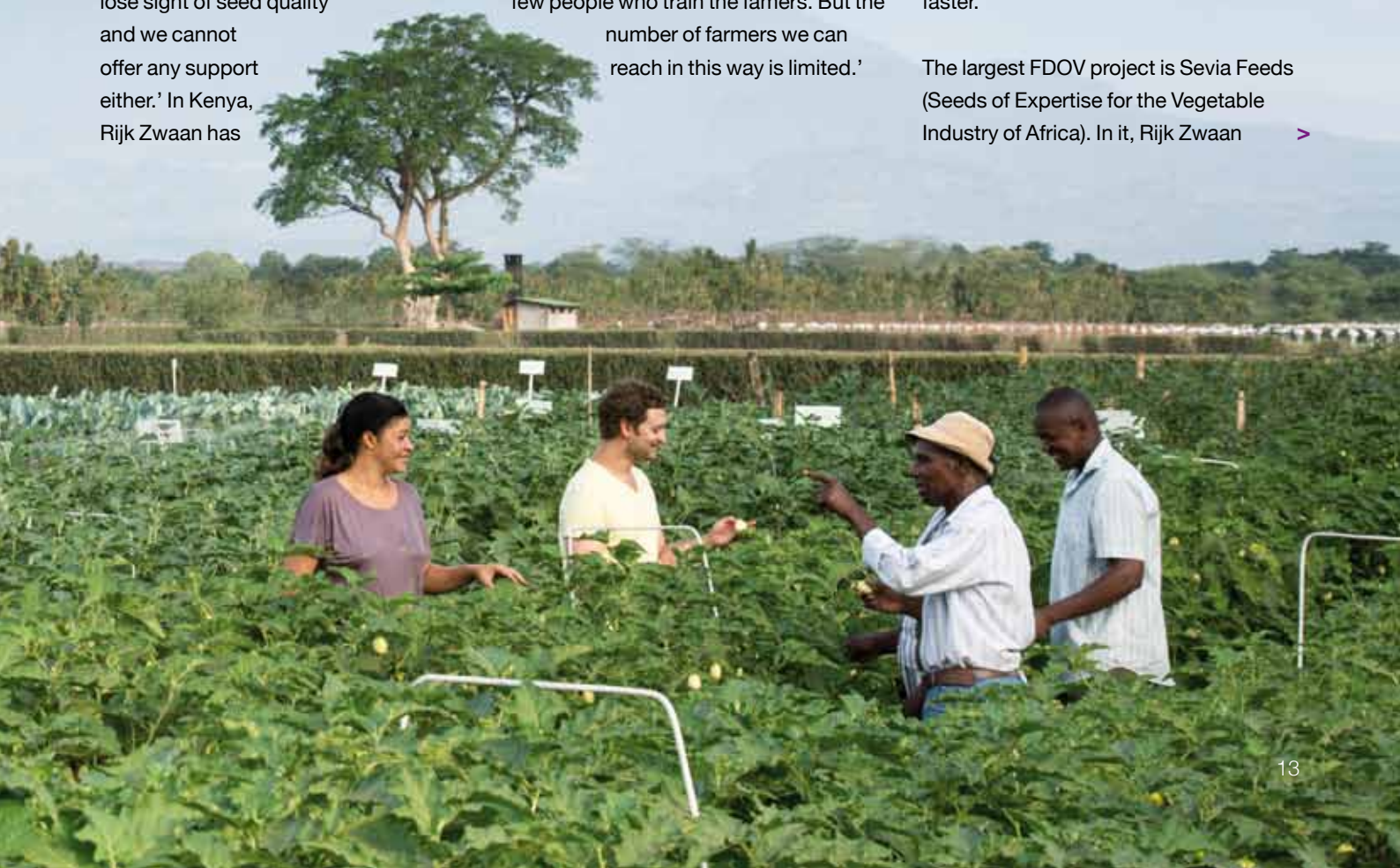
its own dealer. In addition, the company has been selling seeds to commercial - often foreign - vegetable farmers who export their own produce. They do not need to be shown the way to the company.

Developing new varieties takes a long time, as does market preparation. Improved seeds will be more expensive than the seeds the farmers have been multiplying or buying locally. Farmers need a good system to grow the new seeds. They must also know how to sell their vegetables. 'There is a demonstration field where we show the methods of cultivation,' says Bos. 'We also have a few people who train the farmers. But the number of farmers we can reach in this way is limited.'

## Two major projects

This is why Rijk Zwaan is working in two major projects that receive support from the Dutch government within the Facility for Sustainable Entrepreneurship and Food Security (the Dutch acronym reads FDOV). 'We would do most of the things we do anyway, without co-financing from the government,' Bos explains. 'Afrisem is our own investment; we financed all of it. However, if you want to show the yield potential of your wonderful *sukuma wiki* in all of East Africa, it is better to cooperate. We can reach more farmers, be more effective and bring the vegetable sector to a higher level. And we can do all of this faster.'

The largest FDOV project is Sevia Feeds (Seeds of Expertise for the Vegetable Industry of Africa). In it, Rijk Zwaan >





## Chain

In another FDOV project, Vegetables for All (which receives €1.6m in Dutch government support), Rijk Zwaan works with the Global Alliance for Improved Nutrition (GAIN), the Rabobank Foundation, the WUR Centre for Development Innovation and local partners to improve various links in the food chain. This can entail creating co-operations and farmers' groups, in order for farmers to obtain financial backing, or a stronger market position. It can also mean drying the vegetables or improve transport, in order to reduce losses. 'We know about seeds and growing them,' says Bos. 'But we also work within the chain and are helping farmers. This is because we want local people to get better nutrition, through healthy vegetables.'

Rijk Zwaan has a few smaller development projects in Latin America, Asia and

works with East West Seed and Wageningen University and Research Centre (WUR). The Dutch government has made €4.7m available for the project, which trains trainers who will then be advising

farmers all over Tanzania about methods of cultivation. Bos: 'Cultivation is the focus here, showing farmers that things can be done in a better way.'

## Tanzania

# Better seeds not available in local seed shops

**Tanzanian farmers who can afford to buy better vegetable seed will see their yields increase, writes agriculture journalist Esther Mwangubula from Arusha. But these seeds are more expensive, difficult to obtain and require intensive care in the process of cultivation. For many farmers, that is asking too much.**

In the Arusha region, vegetables are the most important source of income for smallholder farmers. Many farmers produce their own vegetable seeds or buy it from their local dealer. These seeds are cheap but they do produce relatively small harvests. Improved seeds, for instance those produced by Rijk Zwaan, can increase harvests but these are not available at the small local stores where farmers habitually buy their inputs. Moreover, they are expensive and require irrigation and intensive care from planting to harvest. Many smallholder farmers do not have the means or the time to do this. So, in spite of all the information available about modern agriculture many Tanzanian producers hold on to their traditional way of farming. The only way to convince them to buy the improved seed varieties is by seeing

another farmer who has been successful after having switched to the new seeds.

Harald Peeters, director of Rijn Zwaan Afrisem in Tanzania, thinks that farmers in Tanzania need a lot of training in order for changes in agricultural practices to occur. Rijk Zwaan is working together with initiatives like the World Vegetable Centre (AVRDC) and the public-private project Sevia (see elsewhere in this magazine); these projects aim to turn smallholders into vegetable entrepreneurs.

### Training via WhatsApp

'Farmers can buy seeds directly from us,' says Peeters. 'We can also send our seeds to clients in Tanzania, Kenya, Uganda, Ethiopia and other African countries further afield, like Ghana and South Africa.' He explains his company's direct dispatch system: 'We do not want other companies or agrodealers to sell our seeds. We do this ourselves because we want to make sure that farmers receive our original quality seeds. Unfortunately, there are many farmers who do not know about us but those

Africa, providing support to smallholder farmers to set up a good horticultural business. 'These are smaller projects that allow us to do something extra for marginalized people in development countries,' Bos says. 'We want to share our knowledge. Selling seeds is a nice side-effect but not the essence of these projects.'

### **Bureaucracy**

By contrast, Afrisem is about making money, even though profitability may be some way off. Afrisem, therefore, is much more than a sympathetic development project, as Bos makes clear. 'We want to create something that will be in demand, over time. But this can take up to fifteen years, maybe more.' Participating in government-supported projects is

a welcome activity, although it is far from clear that Rijk Zwaan wants to continue down this road. The Netherlands Enterprise Agency demands stacks of reports and is full of time-consuming red tape. Says Bos: 'Perhaps there will come a time that we will abandon co-financing. Yes, it means that we will reach fewer farmers. But we'll also have far fewer forms to complete.' ●



## **Rijk Zwaan in figures**

- 2,500 personnel, more than 1,000 in the Netherlands
- Turnover about € 350m. Thirty percent of this goes to research and improvement
- Sales of more than 1,000 varieties of 25 vegetables in more than 100 countries
- 30 subsidiaries worldwide
- Worldwide seed production, either independently or through contract farmers
- Fourth-largest vegetable seed business in the world



who are using our seeds are telling their colleagues about germination, yield and product preservation after harvesting. They share information via mobile platforms, training sessions and when they visit each other.

Rijk Zwaan's farmers receive training from the company about cultivation and crop management, all the way to marketing the produce. 'We are not in a hurry to get many farmers to buy our seeds,' says Peeters. 'We want farmers to obtain a better market position by training them in vegetable farming and entrepreneurship.'

Abel Kuley, a specialist on product development and a trainer with Rijk Zwaan, adds that the company also trains farmers in other regions. 'We train our farmers who are really remote via WhatsApp and other social media.' This creative training method is not only very cheap; it also enables farmers to exchange among themselves information and ideas about how they grow their crops.

### **Expensive seeds**

Enock Nanyaro, who works as a farmer at Familia Takatifu, a farm in Njiro Arusha, has welcomed the new seeds. 'I used to plant seeds from other companies but these did not produce a lot. Now that I have switched to seeds from Rijk Zwaan, cultivation is much better and the yield is good. Still, these seeds are very expensive to many farmers, in comparison with the others.'

Aranyakira Ngyeve, of Mulala Ward and Flumence Shayo, of Makiba Ward, in Meru District, are agricultural extension workers. Shayo insists that Rijk Zwaan has a good reputation but that price and availability problems remain. 'I know that the company sells improved seeds. But when I advice farmers to buy those, they complain that they cannot get them at the local seed shops. Mostly, they rely on the cheapest seeds they get from other companies. Some produce their own. We must continue to tell our farmers that they are better off buying high yield seeds instead of local seeds that will always end up giving them bad harvests.' ●

How do companies created chains in Africa?

# Cooperation among farmers



Photo Agriterra



# is crucial but not easy

Beans in Zimbabwe, onions in Ethiopia. Many companies want closer ties with smallholder farmers and convince them of the advantages of using better seeds. Crucial in this effort is cooperation among farmers but that is not always easy. Before they jointly enter the market, many issues need to be addressed. 'It happens that a farmer has already sold his produce by the time the buyer arrives.'

Some one hundred thousand smallholder Zimbabwean farmers grow not only maize and other crops but also dry beans. The yield is low, at the most 0.4 ton per hectare. The nutritious beans are used to feed the family.

Bakker Brothers Seeds from Noord-Scharwoude already sells tomato seeds, pumpkin seeds and other vegetable seeds in Africa through agrodealers. But now, the company has come to Zimbabwe to set up its own bean chain, together with five thousand farmers. They will supply new beans: hybrids of local African varieties that are ore disease resistant and deliver higher yields. At the end of next year the company hopes to be able to demonstrate the new beans locally with ten growers. This should inspire more famers to also start producing dry beans for Bakker Brothers and for local consumption. 'If we have direct contact with the farmers, we can better demonstrate the advantages of our beans,' says R&D manager Eric Juckers, who visits Zimbabwe regularly.

## With the farmers

Bakker Brothers wants to create a production chain. The main characteristic of such a chain is the very close relationship among all parties involved, at the very least the seed supplier, the farmer and the buyer. The seed supplier supports the farmer who grows the crop and, if necessary, helps market the produce. To make this a reality, other parties may also get involved, for instance universities or farmers' organisations.

Bakker Brothers is not the only seed business that is realising a vegetable production chain with African farmers. Many the Dutch (or Netherlands-located) vegetable

seed companies are doing the same. For instance, Vegetable Seeds in Nunhem, part of the multinational company Bayer, sent seeds for tomatoes, onions and paprika to Ethiopian universities. In partnership with Fair Planet, these seeds were used in demonstration fields. Fair Planet is an NGO created by an Israeli researcher, which is also involved in mobilising universities, cultivators, government departments, buyers and other stakeholders. Together, these parties want to help spread seed stocks and good methods of growing them. 'Our approach is holistic,' says John Willems, Global Head M&S Vegetabe Seeds at Bayer.

## Costly

As it creates the vegetable chain, Bakker Brothers is looking for support from local organisations and currently assessing which NGO would be most fit for purpose. Juckers is pleased with the support from the >

## Bejo Seeds wins Doing Business In Africa Award



In December 2015, Bejo Seeds won the *Doing Business in Africa Award*. The award is an initiative of the Netherlands Africa Business Council. The company received the award for its activities in Mali and Senegal. In both countries, Bejo Seed salespeople do not only assist farmers in cultivation but also in stocking produce, for instance onions. They teach farmers to construct small stocking facilities, with roofs made of local materials like bamboo shoots and banana leaves. This way, good ventilation is assured and humidity remains within the norms. As Luc Driessen from Bejo Seeds comments: 'We always begin by looking at the options farmers already have to improve their business,'

## Reaching the poorest



The creation of a production chain often leaves out those who have virtually nothing. Early participants usually include farmers who are relatively rich; they are a bit more entrepreneurial and can afford to take risks.

But once the chain is working and other farmers see how much better the new seeds are, things can expand

very rapidly, as Ton knows from his own research at LEI. For six years, he worked with the farmers' organisation UNAG in Condega, Nicaragua, where he set up a distribution system for improved seeds, including for dry beans. Farmers could get 5 kilogrammes of those seeds on credit. Repayment was in the form of 15 kilogrammes of beans, after harvest.

Ton recalls: 'Within three years, 80% of the farmers were growing the new bean varieties.' He adds that seed companies can make it easier for poorer farmers to obtain seeds. He gives two examples. 'Find out whether local dealers sell seeds in very small sachets. And find out whether the very poorest in the area have access to seeds through small local shops or seed exchanges.'

Dutch government's FDOV program, the Sustainable Business and Food Security Facility. Training the farmers is, after all, costly. 25 trainers will be assisting the farmers.

Those trainers in the Bakker brothers and Bayer/Fair Planet projects dispense advice on cultivation, help solve stocking issues, assist in financial administrative matters and help organise microcredits if needed. They also help farmers to get organised; cooperation is crucial. 'It would be very handy in our case,' says Juckers, 'if farmers agreed on joint crop rotation. That would enable them to use larger tracts of land to grow beans, maize or other crops alternately.' Crop rotation prevents – among other things – beans from catching diseases and a planting timetable guarantees constant supply.

### Bottlenecks

Cooperation is not achieved easily, argues the economist Giel Ton in a 2015 thesis written for the LEI Research Institute at Wageningen University and Research centre (WUR). Ton identifies a considerable number of

bottlenecks that farmers must learn to face before they jointly enter the market place. Among them: being able to refuse a neighbour's produce if it is below standard. Another: arrive at a joint decision as to where the profits should go. Or: develop negotiating skills so that when dealing with buyers the members clearly see the advantages of being part of the collective.

'These and other bottlenecks are often underestimated,' says Ton. People ask: why don't these farmers organise themselves better? The answer is that you must make this easier to do. You must also help design mechanisms that prevent opportunistic behaviour.'

What Ton is hinting at is a well-known phenomenon known as *side-selling*. In principle, the idea is that farmers agree to sell to a particular buyer. But when the buyer arrives, it happens that some have already sold their produce elsewhere. 'Farmers tend to live from day to day. That's not a culture you can quickly change,' says Bayer's Willems. 'Many of them cannot store their produce for any length of time.'

Seeing successful examples is a good cure for *side-selling*, as Willems knows. Bayer, his company, can refer to its experience in India, where it has become the market leader for vegetable seeds with thousands of producer farmers in its supply chain. Giel Ton suggests paying farmers an advance or offer them easier access to microcredits.

**'Farmers tend to live from day to day. That's not a culture you can quickly change.'**

### Engage with farmers' organisations

When organising production chains, it is often helpful to enlist the help of an existing farmers' cooperative or another collective agricultural organisation. That is the view of Frank van Dorsten, customer analyst at Agriterra. 'Companies often overlook these things. Or they do not expect that such organisations can do anything for them, for instance because they see them as close to the government. What we say is: find out first. Zambia, for instance, has a strong organisation of cotton farmers. It represents 2,000 growers' collectives. Rwanda has a strong federation of potato farmers. It is entirely possible that something similar exists for the crop that has the interest of your company.'

Willems concurs. 'In Ethiopia, there is no way around the farmers' union. But we want to work with all interested parties.' A time-consuming process. This is why Fair Planet asks volunteers (many from Israeli universities) and local organisations to work on things like cultivation research or facilitate workshops with government officials and union representatives.

### Brokers wanted

Giel Ton advises those who are selecting farmers for seed production to look for groups that have a proven track record of dealing with tensions. If these do not exist, you need *brokers* to create them. Then again, how does one prevent such a group from falling apart as soon as the project is finished? 'Right from the start, let them manage a seed or a credit fund,' counsils Ton. 'If this functions well for a couple of years, then you can be certain that they have learned how to deal with bottlenecks. It also tells you that there is a perspective for scaling up.'

In short, setting up a production chain requires great effort. Juckers knows full well that these processes take long. 'In Zimbabwe, we are getting involved for the long term.' ●

**'We want to work with all interested parties.'**



Photo Agriterra

# Pop Vriend

## involves smallholder farmers in tests and demonstrations

Seed company Pop Vriend has been a steady provider for farmers in Tanzania for more than fifty years. Now the time has come for all involved to switch to hybrid seeds. If not, 'the farmers will miss out on getting a better product and we will lose our position in Africa'.



Few places demonstrate so explicitly the differences between farmers in various parts of the world than the warehouse of seed company Pop Vriend in the Dutch northwestern town of Andijk. Giant cardboard boxes with half a ton of spinach seed (destination: USA) sit right next to a few textile sacks with 20 kilograms of radish seed (destination: Iran). Tomato seeds for Rwanda are packed in 500-gram tins and share space with much smaller 50-gram tins containing the same seeds but destined for Tanzania. 'Many of our clients are not the kind of specialised horticulturalist you find in Western countries like the USA,' says Dick Visser, sales manager for the Middle East and Africa. 'They prefer to buy small quantities.' Walking to a table

laden with tiny sachets, he explains: 'Some of our clients have no more than 1,000 square metres of land. They often buy just 5 grams.'

But now, this relationship with smallholder farmers is set to change, starting with Tanzania. 'We must cooperate much more closely, in order to show them the advantages of hybrids,' Visser says. 'If we don't do this, these farmers will miss out on getting a better product and we will lose our position in Africa.'

### Babyleaf market leader

Employing 80 staff, Pop Vriend is a relatively small player among the Dutch seed companies. But the company's orientation is entirely international. It

holds, for instance, a commanding position in the babyleaf spinach segment in the United States. Look at sugar maize and you will find the company is Europe's Number Two. Pop Vriend also plays an important part in green beans, sending sixty different varieties to many countries: fine beans to France, fat beans to the United States, yellow beans to Eastern Europe and flat beans to Southern Europe.

From its inception, the company has had a keen eye for poor farmers. The company's founder, Pop Vriend, went to Tanzania as early as 1958, to produce seeds for green beans, for Europe. Tanzania had the perfect climate for that production line. But at the same time, Vriend felt compassion for poor families, thinking that they would benefit from having better quality seeds for their onions, tomatoes or pumpkins. For this group, his company started to test for quality, then multiply and package the so-called free varieties (i.e. varieties that can be multiplied without the owner's permission). With its tins and sachets of seeds, the company quickly rose to the top 3 vegetable seed providers in Tanzania, before expanding the sales of these free varieties further, into other African and Middle East countries.



Photos Pop Vriend

### **A company trial station in Tanzania**

Dick Visser frequently travels to the two regions where he sells his company's free varieties and talk to the farmers, finding out how they are doing. On his country visits Visser is accompanied by local agents who sell Pop Vriend seeds. 'We want to know how well our agents are selling our seeds,' he explains. 'In a car, on the road to see a farmer, that's the time when you hear the most.'

In Tanzania, the company now has its own trial station, which employs fifteen. They are testing seed varieties, preparing demonstrations and assuring sales. When doing this, Pop Vriend wants to involve farmers and horticulturalists. Visser spells out why.

'In Africa, hybrid seeds are making inroads. These give farmers better and more stable yields than current varieties. But farmers must be willing to pay more for these hybrids and this will render their tomatoes or pumpkins more expensive for the consumer. So, we are obliged to show them the advantages. Companies that fail to do that will lose their competitive edge. This year, we want to have more people working in our trial station, in order to ensure that cooperation with the farmers really takes off.'

### **How are you getting the farmers involved?**

'We first select the hybrid seeds in Tanzania and organise demonstration days. Following that, we organise demonstrations with the farmers. We train and coach them as well. In this way, the advantages of the hybrid seeds become tangible. We can do all this work ourselves but we are open to working together with a non-governmental organisation.'

Pop Vriend has not asked for any government support for this part of the project. 'We probably could use some of it but our outlook is practical. The extent to which we want to change our plans in order to meet specific demands that would qualify us for government support, is limited. In addition, it involves a lot of paperwork and the decision-making process is slow.'

### **Is there a role for your company when organising the marketing of vegetables?**

'Most of our clients are not part of the top echelon that can meet supermarket criteria. In Africa, we operate mostly in the middle echelon and below, i.e. farmers who have 1,000 square metres of land at most and grow some vegeta-

bles but also maize, sorghum, rice and maybe bananas. These are people who may walk up to three hours on their way to the market and back, selling their spare vegetables. If our hybrids help them achieve more production as compared to the free varieties we are providing now, they can earn more at the local market.'

### **How long will it be before most Tanzanian farmers will be using hybrids?**

'Some say between ten and twenty years. I think it will take longer. Culture and politics in Africa are less cooperative than in, say, South East Asia, where hybrid seeds are spreading fast.' ●

## **Pop Vriend Seeds in figures**



- 80 personnel, of whom 15 work for the Tanzania subsidiary
- Sales of more than 200 varieties of 33
- Turnover: own varieties 85 per cent; free varieties 15 per cent
- Seeds are delivered by specialised seed production companies

# Can seed companies invest more in food security?

What are Dutch seed companies doing to reach out to poor farmers? How can they and their improved seeds contribute to increased food security in developing countries? These were the central questions in this magazine. We spoke with farmers, business representatives, the government, Agriterra and Wageningen UR. In this section we summarise our findings and offer leads for fresh debate.

## 1 How can seed companies increase food security in developing countries?

Seed companies play a major role in food security in developing countries by the sale, the improvement and the production of seeds in those countries. They can increase their role by helping to create a vegetable sector and involving farmers, especially poor ones, in the process. Training farmers to participate in these production chains is expensive, which is why the Dutch government helps out financially.

In 2014, the Dutch seed sector grew by 4%. It is a successful sector and there are those who believe that it should invest more. But Plantum director Niels Louwaars thinks that companies are already investing a lot in the creation of - and getting poor farmers to participate in - a vegetable sector. They are not specialised in creating entire production chains. In short, it is not only a question of what companies can contribute but also how they can maximise their contribution. Which initiatives and training methods work well and how can we implement those in the best possible way?

## 2 How can co-operatives and farmers' organisations play a role in creating a vegetable production chain?

In a vegetable production chain, growers often need to work together, for instance when they need to sign a joint delivery

contract with a supermarket. Existing cooperatives and farmers' organisations can play a role in this process. Companies often do not take this into consideration. 'At the very least, find out whether working with an existing farmers' organisation or a co-op is possible,' counsels Agriterra's customer analyst Frank van Dorsten. But LEI researcher Giel Ton warns that tensions among growers should not be underestimated: 'Managing tasks and money together is not easy,' he says. How then, can companies establish relationships with existing farmers' organisations and cooperatives? Can they foster collaboration among farmers through training, for instance when a joint planting program needs to be followed, or when engaged in joint marketing or a joint seed purchase?

## 3 How can small Dutch and local companies gain easier access to government subsidies?

Government subsidies can speed up the creation of vegetable production chains. Especially larger companies are using government support in their efforts to inform farmers. But subsidies are also meant to benefit smaller companies but they find it difficult to meet all requirements. Pop Vriend's Dirk Visser puts it like this: 'The extent to which we are prepared to adapt our plans in order to qualify for government support is limited.' Companies that are using government support programs are scathing about the administration and the bureaucracy. Marcel Vernooij of the Dutch Ministry of Foreign Affairs points out that a



Photo Agriferra

balance is sought between on the one hand limited red tape for companies and on the other hand sufficient feedback about impact and corporate social responsibility. The Dutch Good Growth Fund has yet to receive demands from seed companies.

#### **4 To which extent can the Dutch Diamond approach, the home-grown collaborative model, be exported?**

In comparison with many other countries the Netherlands has ample experience with projects in which companies, government institutions, civil society and knowledge institutes work together. This public-private cooperation is called the 'Dutch Diamond'. Can this type of cooperation also be promoted in developing countries? Bayer, for instance, has been busy mobilising all these stakeholders, in Ethiopia. Can it make use of the Dutch experience in its efforts? Would it be an idea to organise training sessions about this in the Netherlands? New Zealand, a country with a similar model, exports its way of working by training people from companies based in developing countries and then getting them to return to their countries and create production chains there. Plantum director Louwaars is cautious when discussing the export of a particular model: 'Cooperation among parties must be organised differently, depending on where you are. Maybe other parties will be needed and it will certainly not work in the same way everywhere.'

#### **5 What are realistic expectations about the use of improved seeds in Africa and Asia?**

Smallholder and poor farmers in developing countries still get a part of their seed stock from their own fields. Alternatively, they buy cheap seeds locally. When considering future growth in the use of hybrids and other improved vegetable seeds, the question is what expectations are realistic. Currently, projects for market development are difficult to scale up, for instance because no microcredits are available or not enough people capable to pay for more expensive vegetables. How quickly developments in Africa and Asia will go is up for debate. There is, on both continents, a growing middle class and an increase in demand for healthy good quality vegetables in local supermarkets. It is likely that market-oriented vegetable production will grow faster than self-sufficient agriculture. Some estimates hold that within 20 years 80% of African farmers will buy hybrid vegetable seeds but there are those who hold the view that it will take much longer. There is also uncertainty about the role to be played by smallholder farmers: will the efforts to create a professional vegetable production chain benefit only a small group of affluent producers because their smallholding colleagues cannot fulfil the stringent demands that export products must meet? ●

## Colophon

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