



Access to Seeds  
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# Access to Seeds Index Report 2016 Executive Summary

Bridging the gap between the  
world's leading seed companies  
and the smallholder farmer

February 2016

# Executive Summary

## Many smallholder farmers yet to be reached, some seed companies showing leadership

A billion people go to bed hungry every day and two billion suffer from malnutrition. The global population is expected to grow by a further two billion in the coming decades, precisely in those regions that are currently considered food insecure. In these regions where agricultural systems are dominated by smallholder farmers, access to the key inputs to produce more and better food is often lacking.

Quality seeds of improved varieties have enabled farmers in advanced agricultural systems to triple their yields. What is the seed industry, strategically placed as it is at the start of the food value chain, doing to help smallholder farmers in food insecure regions to achieve similar results?

The Access to Seeds Index aims to shine a light on this question. It assesses and benchmarks leading global field crop and vegetable seed companies on their efforts to make their products available to smallholder farmers in four regions: Latin America, Western Africa, Eastern Africa, and South and Southeast Asia. A separate Regional Index has been compiled for Eastern Africa.



DuPont Pioneer leads the Global Index of Field Crop Seed Companies, its position primarily determined by its strong breeding program focusing on the regions where smallholder farmers are active.



East-West Seed outperforms its peers in the Global Index of Vegetable Seed Companies, due in large part to its smallholder-centric business model.



East-West Seed also leads the Regional Index for Eastern Africa, followed by a cluster of four companies that originate in the region, namely Victoria Seeds, East African Seed, Kenya Seed Company and NASECO.

The findings show that seed industry as a whole is active in all countries in the scope of the Index. This is with the exception of Western Africa, where there is a clear gap. However, country-level presence is no guarantee that the industry's products are actually accessible to smallholder farmers. This report identifies opportunities as well as good practices that can inspire seed companies and their partners to go the last mile – in every sense – to the farm gate.

# Why an Access to Seeds Index?

Hunger is a daily reality for a billion people and two billion suffer from various forms of malnutrition. The global population is expected to grow by a further two billion in the coming decades, precisely in those regions that are currently considered food insecure.

The smartest way to tackle this pressing challenge is to enable farmers to produce more food. Agriculture in food insecure regions is dominated by small-scale agriculture or smallholder farmers, generally defined as farmers growing food on plots of land of around two hectares, equivalent to two or three football fields.

A good crop starts with quality seeds. Sufficient access to quality seeds of improved varieties is one of the many constraints smallholder farmers face. Improving access to seeds for smallholder farmers is thus an essential part of the solution to global food insecurity.

This is where the seed industry comes in. Improved varieties have enabled farmers in advanced agricultural systems to triple their yields. What is the seed industry doing to enable smallholder farmers in developing regions to achieve similar results?

The Access to Seeds Index aims to shine a light on this question. It assesses the leading global field crop and vegetable seed companies, which are generally at the forefront of research & development. But it also examines the regional industry, initially in Eastern Africa, which plays a crucial role in delivering the industry's products to the farm gate.

The Index seeks primarily to identify leadership and good practices, providing an evidence base for the discussion on where and how the seed industry can do more. Private sector engagement is at the heart of the Sustainable Development Goals, adopted by the United Nations in 2015. By creating a better understanding of the role of the seed industry, the Index aims to contribute to the achievement of these goals.



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# How the Index's Findings are Presented

The Index's findings are presented at various levels.

- The overall rankings identify which companies demonstrate leadership across the board.
- The key findings at industry level provide insights into how the seed industry as a whole is targeting the four regions within the scope of the Index, as well as how the activities of global companies and regional companies complement each other.
- The key findings at measurement area level present good practices that were identified in each area for the Global and Regional Indexes, as well as which companies demonstrate leadership.
- Finally, the company scorecards provide further insights into the scores and operations of individual companies.

This executive summary provides an overview of the key findings (1) for the three rankings, (2) at industry level, at (3) measurement area level for the Global Index and (4) measurement area level for the Regional Index.

# Methodology and Data Collection

The Access to Seeds Index is maintained by the Access to Seeds Foundation, an independent organization based in Amsterdam, the Netherlands. The Foundation is governed by a Supervisory Board made up of international experts with relevant experience in the fields of seeds, food and agriculture. It is funded by the Dutch Ministries of Economic and Foreign Affairs and the Bill & Melinda Gates Foundation.

The Index is a relative ranking, comparing companies with each other rather than against an absolute, ideal state. It focuses on seed companies with an integrated business model, covering the full seed value chain from R&D and production through marketing & sales. For benchmarking purposes, companies are grouped into separate rankings for (1) global field crop seed companies with seed revenues over \$1 billion, (2) global vegetable seed companies with seed revenues over \$100 million and (3) leading seed companies in a specific region.

The Index has identified four regions with (1) a food security challenge, (2) smallholder farmer presence and (3) agricultural potential: Latin America, Western Africa, Eastern Africa, and South and Southeast Asia. The Global Indexes

The methodology is the result of an extensive process of stakeholder engagement and consultation that started in 2012. The stakeholders consulted were: smallholder farmers, the seed industry, governments, multilateral organizations, NGOs and academia. Guided by small-holder input, 'access to seeds' was translated into six dimensions which form the basis of the methodology: availability, affordability, suitability, capability, profitability and autonomy.

Indicators expressing what stakeholders expect from seed companies on each of these dimensions are grouped into seven measurement areas. Each measurement area is composed of indicators which assess (1) Commitment, (2) Performance, (3) Transparency and (4) Innovation. As the Index is a relative ranking, best-in-class performance on a specific indicator determines which company receives the highest score. The sum of the scores for these indicators make up the score for each measurement area. A company's overall score is the weighted sum of the scores for all indicators.

The methodology was reviewed by an Expert Review Committee, an independent, multi-stakeholder body composed of international experts from various relevant backgrounds. Based on their advice, the Supervisory Board approved the methodology. The methodology of the Regional Index for Eastern Africa was developed in partnership with Cardno Emerging Markets, based in Nairobi, Kenya.

The data collection and analysis were conducted by Sustainalytics, a leading global provider of environmental, social and governance (ESG) research, ratings and analytics. Companies were requested to fill out a questionnaire to supplement publicly available information. Seven of the 13 (54%) Global Index companies and 14 of the 17 (82%) Regional Index companies provided data for the analysis. As a result, the evaluation for a minority of the companies was based on publicly available information only. The full dataset used for the analysis was sent to each company individually for fact-checking purposes.

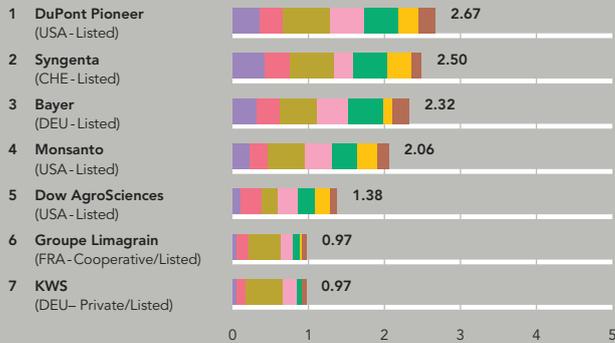


assess company activities in all four regions. The Regional Index focuses initially on Eastern Africa, with the ambition to expand this to other regions in the future. Seven field crop seed companies and ten vegetable seed companies are included in the Global Indexes and a total of 17 companies in the Regional Index. Some companies appear in multiple Indexes. The focus of this first Index is on seeds for food crops. The scope could also be extended to other crops, such as fiber and oil crops, in subsequent Indexes.

# Overall Rankings



## Global Index of Field Crop Seed Companies



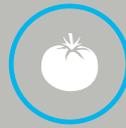
DuPont Pioneer tops the Global Index of Field Crop Seed Companies, closely followed by Syngenta and Bayer CropScience. DuPont Pioneer clearly outperforms its peers in the measurement area Research & Development, thanks to its strong breeding program focusing on Index regions.

Syngenta achieves high scores in Governance & Strategy. This is due to commitments in its Good Growth Plan to make a measurable contribution by 2020, including reaching 20 million smallholder farmers in Index regions. It also leads in Capacity Building, largely due to the activities of the Syngenta Foundation. Bayer CropScience leads in Marketing & Sales, with good practices related to adoption strategies and after-sales support for smallholder farmers.

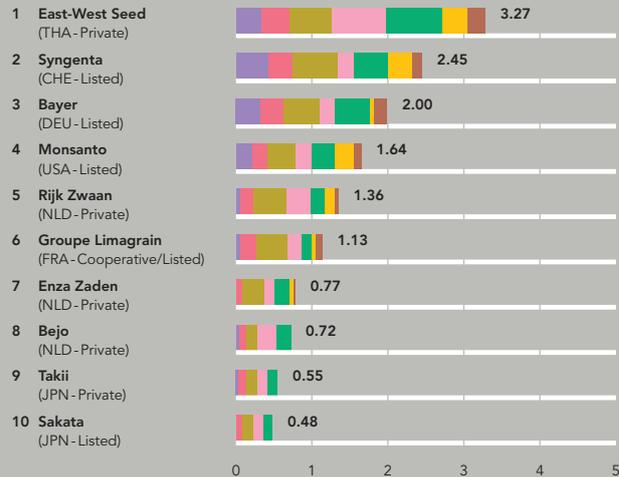
DuPont Pioneer and Bayer CropScience score best on Performance (programs and activities) indicators, whereas Syngenta's position is mainly determined by its high score on Transparency (disclosure) and Innovation (unique approaches in the industry) indicators.

These three companies lead in virtually all measurement areas, generally dividing the top positions between them. Monsanto, which ranks fourth overall, ranks second in Capacity Building and Local Seed Sector Advancement and third in Research & Development. KWS makes it into the top three in Genetic Resources & Intellectual Property, primarily thanks to its activities supporting the conservation and use of genetic resources in Index countries.

Overall, the ranking of global field crop seed companies reflects their commitment to work in the Index regions. The top four companies have business operations in the Index regions, whereas lower ranking companies, such as KWS and Dow AgroSciences, currently limit their contribution to smallholder farmer development to corporate social responsibility (CSR)-related projects.



## Global Index of Vegetable Seed Companies



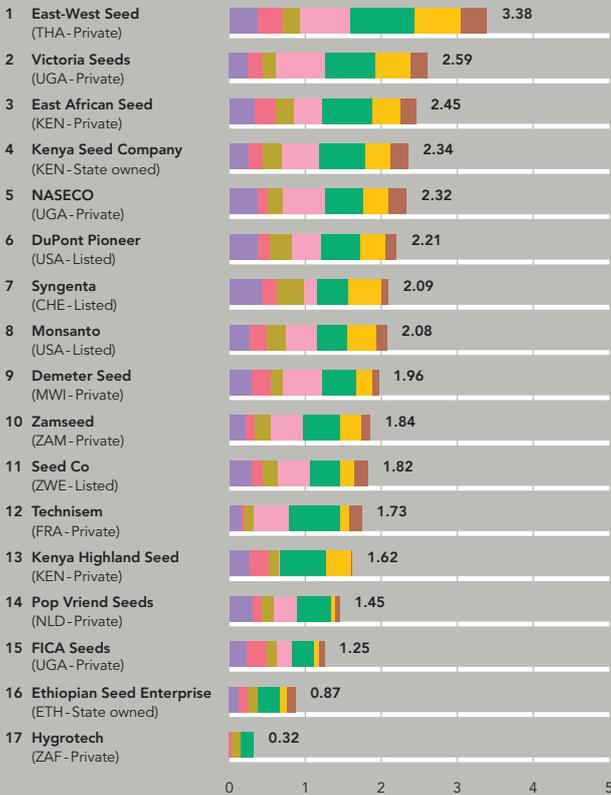
East-West Seed clearly outperforms its peers in the Global Index of Vegetable Seed Companies. Although it is the smallest in terms of seed revenues, the company demonstrates that size is not a determining factor in the Index. Its mission-driven smallholder-centric business model translates into high scores across all measurement areas, with the exception of Governance & Strategy.

Syngenta and Bayer CropScience rank second and third, respectively. Bayer CropScience is a steady top three performer but does not lead in specific areas. Syngenta scores highly in Governance & Strategy, due to the commitments articulated in its Good Growth Plan, and Capacity Building, thanks to the activities of the Syngenta Foundation.

The top three companies lead in all measurement areas, with the exception of Research & Development. Rijk Zwaan and Bejo take second and third place, respectively, in this area, reflecting their commitment to their core competency, breeding.



## Regional Index for Eastern Africa



The Regional Seed Index for Eastern Africa includes seed companies originating in the region, three listed multinational companies with a considerable presence in the region (DuPont Pioneer, Monsanto, Syngenta) and three private vegetable seed companies originating outside the region (East-West Seed, Technisem and Pop Vriend Seeds).

The Regional Index shows small differences between companies, with a gradual tailing-off of scores. This is with the exception of East-West Seed, whose performance significantly exceeds its peers. East-West Seed's position is underpinned by its smallholder-centric business model, which translates into consistently high scores in a number of measurement areas, including Marketing & Sales, Research & Development and Capacity Building.

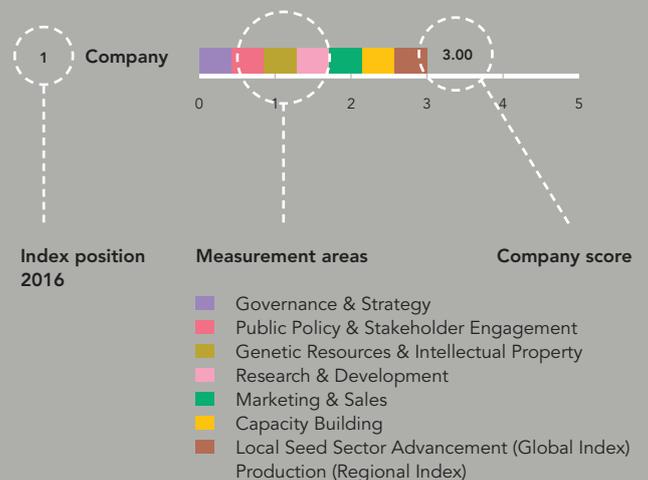
Behind East-West Seed, the top of the ranking is dominated by companies originating in Eastern Africa, namely Victoria Seeds, East African Seed, Kenya Seed Company and NASECO. Their comparatively strong overall performance is primarily driven by strengths in Marketing & Sales and Research & Development, most notably on Performance indicators rather than Commitment or Transparency. Generally speaking, the highest ranking companies have robust programs and activities related to access to seeds.

Despite an average performance overall, DuPont Pioneer, Syngenta and Monsanto excel in commitments in Governance & Strategy and Capacity Building, surpassing other Regional Index leaders. Since they are listed multinationals, it is likely that these companies face higher stakeholder expectations regarding accountability and responsibility. Commitment and Transparency thus make a greater contribution than other indicator categories to their overall score.

In this respect, a notable score is achieved by Ethiopian Seed Enterprise, which ranks fourth on Transparency after three listed, multinational companies. Although it is at the bottom of the overall ranking, Ethiopian Seed Enterprise outperforms the other companies originating in the region, largely due to the launch of its – by regional standards – advanced corporate website in early 2015.

Other companies in the Regional Index – Demeter Seed, Zamseed, Seed Co, Technisem, Kenya Highland Seed, Pop Vriend Seeds and FICA Seeds – demonstrate a comparatively weaker overall performance but show strengths in specific areas, typically Marketing & Sales and Research & Development.

### How the Company Rankings Work

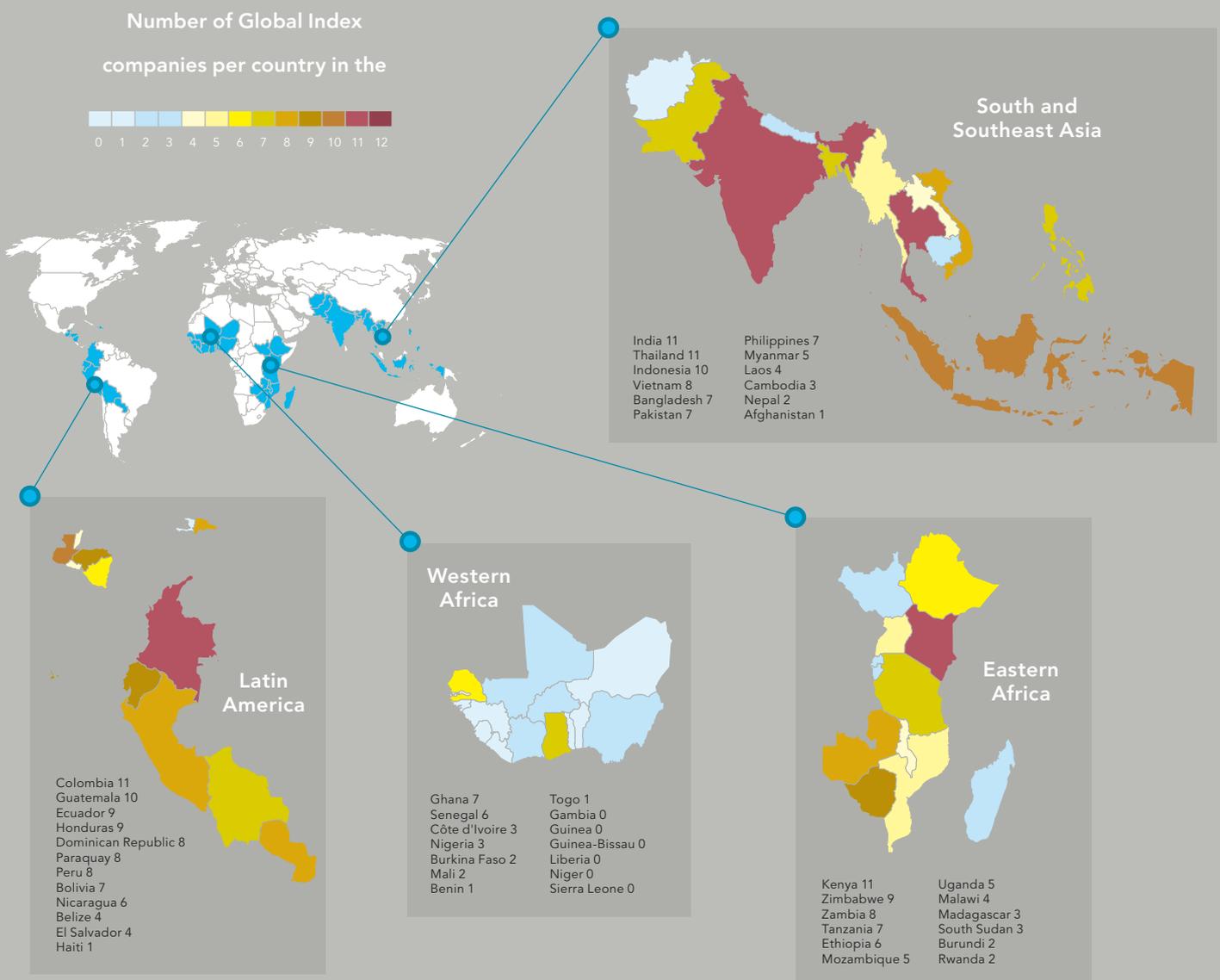


# Key Findings – Industry Level

The Index has identified four regions with (1) a food security challenge, (2) smallholder farmer presence and (3) agricultural potential: Latin America, Western Africa, Eastern Africa, and South and Southeast Asia. It provides for the first time a comprehensive picture of what the industry is doing in these regions. The general assumption that emerged from preparatory stakeholder consultations was that the industry's commitment is limited to a few crops and countries, due to a lack of suitable genetic material for tropical zones and an inadequate enabling environment. Based on the Index's findings, this assumption deserves to be reexamined.

## ■ The global seed industry covers all Index regions, with the exception of Western Africa

The global-level assessment shows that global seed companies are active in all regions and cover almost every country in the scope of the Index. The exception is Western Africa, where six out of 14 countries are not reached. Countries with the highest concentration of global companies are Colombia, Kenya, India and Thailand. Companies with the largest footprint are Bejo, DuPont Pioneer and East-West Seed, with a presence in more than 30 countries across all Index regions. Companies also operate in fragile states such as Afghanistan, Haiti and South Sudan. However, country presence is no guarantee that seed industry products are actually accessible at the village level or in remote areas.



■ **Together, global and regional companies offer a broad portfolio of field crop seeds**

Global field crop seed companies tend to focus on major crops such as maize and rice in Index regions. Global companies generally do not have their full portfolio available in every country where they are present. The Regional Index shows that regional companies broaden the choice for smallholder farmers, both with regard to crops and suppliers. Regional companies have additional field crops such as dry beans, soybean, sorghum and wheat in their portfolio in all Regional Index countries. Both global and regional companies have breeding programs to bring new varieties to market in the near future.

■ **The seed industry has a broad portfolio of vegetable seeds available in Index regions, with breeding mainly carried out by global companies**

Global vegetable seed companies tend to have a broader portfolio available in Index countries than their global field crop seed peers. For some crops not in the portfolio of global companies, regional companies are filling the gaps. In Eastern Africa, there is a clear difference between the global companies and companies originating from the region. Most regional companies do not have a breeding or variety-testing program for vegetable seeds, with the exception of Kenya Seed Company, Victoria Seeds and a few others. This indicates that most regional companies rely on wholesalers. The main sources of newly bred vegetable varieties in Eastern Africa are likely to be global companies operating in the region such as East-West Seed, Pop Vriend Seeds and Technisem.

■ **Local crops are the domain of regional seed companies**

Local crops, also called 'neglected and underutilized crops', are typically the domain of regional companies. In Eastern Africa, local field crops such as cowpea or local vegetables such as amaranth and black nightshade are in the portfolio of multiple companies in nearly all Index countries. Global companies do not include local crops in their portfolio. Exceptions are East-West Seed and Technisem. As an illustration of their core mission to develop tropical vegetable seeds for smallholder farmers, these two are the only companies in the Regional Index that originate from outside the region but have breeding programs for local vegetable crops.

■ **Companies are active across multiple access dimensions relevant for smallholder farmers**

Guided by input from smallholder farmers, 'access to seeds' was translated into six dimensions: availability, affordability, suitability, capability, profitability and autonomy. The Index has identified good practices across most access dimensions. As an example, Victoria Seeds improves availability by using tuk-tuks as mobile seed shops to reach remote villages. Syngenta is addressing affordability by means of a smallholder crop insurance plan. Demeter Seed employs feedback mechanisms to inform its breeding program for seeds suitable for local preferences. Many companies are involved in capacity-building projects, as they understand increased capacity to be an essential step towards creating a sustainable future customer base. Although these initiatives are a promising start, there are opportunities to make them a structural element of smallholder-focused business models. Autonomy appears to be largely overlooked. This dimension relates to the freedom of farmers to choose between multiple suppliers and between the formal and informal seed system, as well as recognition of smallholder farmers as seed company partners along the seed value chain.

■ **Seed companies see smallholder farmers mainly as end-users**

Consultations with smallholder farmers also revealed that farmers see themselves not only as end-users but as partners in the seed value chain, e.g. seed producers or partners in the breeding process. With the exception of East-West Seed and Bayer CropScience, global seed companies appear to engage smallholder farmers in breeding and seed production only to a limited extent. In comparison, Uganda-based NASECO reports that more than 90% of its seed production is done by smallholder farmers and farmer cooperatives. Regional companies also engage smallholders more actively in their R&D processes, for example through participatory breeding or variety selection.

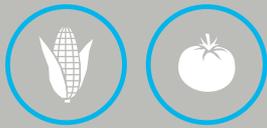
■ **Seed companies do not take a structural approach to addressing the needs of women farmers**

Approximately half of the smallholder farmer workforce is made up of women. Despite many policy debates underlining the need to pay dedicated attention to women farmers, only three Global Index companies have programs that explicitly focus on women farmers' input and training needs: Rijk Zwaan in Guatemala, Syngenta in Bangladesh and East-West Seed in Ethiopia, Myanmar and Vietnam. Among Regional Index companies, Seed Co has programs in Kenya; Victoria Seeds in Kenya and Uganda. Other companies make some effort to include women farmers in training, extension and demonstration activities, although women are not the main focus of these activities. No company takes a structural approach to addressing the needs of women farmers.

■ **Regional companies play a key role in access to seeds for smallholder farmers**

Regional companies go a step further in addressing the needs of smallholder farmers than their global peers. Smallholder farmers are the primary customer group for these companies. This underscores the importance of regional companies for reaching smallholders. Regional companies are active in domains generally neglected by global companies, notably breeding for local crops and marketing varieties from public research institutes. In addition, regional companies tend to address the different capacity levels of smallholder farmers more often by including open-pollinated varieties (OPVs) and different seed grades in their portfolio. Regional companies also demonstrate practices that go beyond their global peers in adoption strategies and inclusion of smallholder farmers in the seed value chain.

# Key Insights on Measurement Areas – Global Indexes



The Access to Seeds Index evaluates company performance in seven measurement areas where stakeholders expect or desire company activity. For the Global Index, these seven areas are (1) Governance & Strategy, (2) Public Policy & Stakeholder Engagement, (3) Genetic Resources & Intellectual Property, (4) Research & Development, (5) Marketing & Sales, (6) Capacity Building and (7) Local Seed Sector Advancement. In each measurement area, companies are assessed with indicators in four categories: Commitment, Performance, Transparency and Innovation. A company's overall score is the weighted sum of its scores on all indicators. Following the advice of the Expert Review Committee, most weight is given to Performance indicators and measurement areas close to seed companies' core business, namely Genetic Resources & Intellectual Property, Research & Development and Marketing & Sales.

## Most global companies have formulated a commitment, few with tangible targets

More than half of the global companies have formulated a commitment to smallholder farmers, although tangible targets are often lacking. Bayer CropScience has a formal commitment to provide food security solutions. Syngenta and Monsanto have targets to reach a certain number of smallholder farmers by 2020. East-West Seed provides tangible managerial incentives. The remaining companies disclose only informal commitments which are not part of a formal policy and thus have limited accountability.

## Opportunities exist to increase engagement with stakeholders outside the seed sector

It is clear that smallholder development cannot be achieved by the seed industry alone. Most companies are actively involved in the sector's trade associations, but engagement with partners and initiatives outside the seed industry appears limited. Among field crop seed companies, Syngenta, DuPont Pioneer and Bayer CropScience are most active in international initiatives. Among vegetable seed companies, only East-West Seed demonstrates leadership, with active engagement both at the regional and global level.

## Companies provide access to their genetic resources

Monsanto, DuPont Pioneer, Dow AgroSciences, Bayer CropScience and East-West Seed all collaborate with local partners to provide access to specific genetic material or biotechnology traits. This ranges from vegetable germplasm suitable for Africa to biotechnology traits for research on insect-resistant Bt cowpea and water-efficient maize. Four partnerships were identified in which companies have donated germplasm or participate in research for the development of genetically modified crop varieties, with a specific focus on developing traits that are also useful for smallholder farmers. Monsanto has donated germplasm to the Water Efficient Maize for Africa (WEMA) project and to the Bt Cowpea Partnership. DuPont Pioneer partners in the Africa Biofortified Sorghum (ABS) project, for which it has provided transgenic DNA constructs. Monsanto and Dow AgroSciences have contributed to the Virus Resistant Cassava for Africa (VIRCA) project. These partnerships have not yet resulted in commercially available genetically modified varieties in Index countries.

## Support for local gene banks in Index countries is largely overlooked

Support for public gene banks, important for the conservation and use of region-specific crop diversity, is common among global seed companies but is generally limited to gene banks outside Index countries. Exceptions are KWS, which supports public gene banks in Peru and Ethiopia, and East-West Seed, which supports gene banks in Indonesia and Thailand.

### ■ Testing existing portfolios is more common than breeding for Index regions

Testing existing portfolios for suitability for Index regions can be regarded as low-hanging fruit, since breeding processes are multi-year activities. For example, Bayer CropScience performs variety trials in 11 Index countries around the world for two of the Index crops in its portfolio. DuPont Pioneer tests varieties of five of the seven Index crops in its portfolio in 11 countries in sub-Saharan Africa. Among the vegetable seed companies, East-West Seed and Enza Zaden have the most ambitious variety-testing programs, covering virtually all of the crops in their portfolio for at least one and up to four Index regions.

### ■ Breeding is also done in partnership; local feedback systems can be improved

East-West Seed and Rijk Zwaan demonstrate leadership in breeding through Afrisem, a collaborative breeding program that develops new varieties of local crops for the African market. Monsanto partners with AATF to develop water-efficient maize varieties, to be made available to smallholder farmers royalty-free. Syngenta is involved in a partnership with CIMMYT to develop wheat varieties suitable for smallholder farmers. The majority of global companies developing traits and varieties suitable for smallholder farmers do not provide evidence of systems to collect feedback from these farmers to inform their breeding processes. This raises questions about alignment of breeding efforts with the actual needs and preferences of smallholder farmers.

### ■ Global companies concentrate on marketing proprietary hybrid varieties

Collectively, global seed companies have established distribution channels in all Eastern African and a majority of Western African countries. In most cases, seeds are directly distributed by local subsidiaries or through third-party distributors. The actual reach within countries requires additional research. Only a few companies address different capacity levels among smallholder farmers. East-West Seed offers open-pollinated varieties (OPVs) alongside hybrids in its portfolio. Monsanto and DuPont Pioneer offer double-cross and three-way hybrids. These are higher yielding than OPVs but more affordable for smallholder farmers than advanced hybrids.

### ■ Activities in genetically modified seeds are limited in Index countries

Only in a limited number of Index countries is the cultivation of genetically modified varieties of Index crops authorized. Notably, cultivation of genetically modified maize and/or soybean is concentrated in Latin America (Bolivia, Colombia, Honduras and Paraguay) and South and Southeast Asia (Philippines, Thailand and Vietnam). Six Index companies (Bayer CropScience, Dow AgroSciences, DuPont Pioneer, Groupe Limagrain, Monsanto and Syngenta) have genetically modified varieties of maize and/or soybean in their portfolios. All companies are committed to ensuring and managing biosafety in Index countries in cases where they bring these varieties to the market.

### ■ Field days, demonstration plots and tailored packaging are common ways to promote adoption

The majority of companies have relevant programs encouraging the adoption of improved varieties. These include collaborations, like DuPont Pioneer's partnership with USAID and the Ethiopian government to organize demonstration plots in Ethiopia. East-West Seed shows leadership by adapting 95% of its packaging to the needs of smallholder farmers. Adaptations include small package sizes and information in local languages as well as pictograms for illiterate farmers. Bayer CropScience takes a different approach, combining several agricultural inputs in a so-called Much More Rice solutions box offered in Ghana, India and Vietnam.

### ■ Capacity building is largely on a project-by-project basis, rather than a structural activity

Two thirds of vegetable seed companies and all but one field crop seed company are engaged in building smallholder capacity in Index regions. East-West Seed stands out as the only company whose capacity-building programs cover almost 75% of the Index countries where it is active. For most other companies, capacity building takes place in collaborative projects aimed at a specific region or country, rather than being a structural element of a smallholder-focused business model. An example of a project involving several companies is the collaboration of Bayer CropScience, Monsanto, Syngenta and Seed Co with the Tanzanian government in the Southern Agricultural Growth Corridor of Tanzania (SAGCOT).

### ■ Local seed sector advancement is limited

Although there are some strong examples of support for local research capacity and engagement with local seed enterprises, only Bayer CropScience has a formal commitment addressing its role in the development of formal seed sectors in Index countries. DuPont Pioneer is the only company to recognize the relevance of the informal seed sector in Index countries, but this recognition is limited and not part of a formal policy.

# Key Insights on Measurement Areas – Regional Index for Eastern Africa



The seven measurement areas for the Regional Index for Eastern Africa are: (1) Governance & Strategy, (2) Public Policy & Stakeholder Engagement, (3) Genetic Resources & Intellectual Property, (4) Research & Development, (5) Marketing & Sales, (6) Capacity Building and (7) Production. In each measurement area, companies are assessed with indicators in four categories: Commitment, Performance, Transparency and Innovation. A company's overall score is the weighted sum of its scores on all indicators. Following the advice of the Expert Review Committee, most weight is given to Performance indicators and the measurement areas Research & Development and Marketing & Sales, which are expected to have the greatest impact on access to seeds.

## Regional companies assign responsibility for smallholder farmers at executive level

With smallholder farmers representing the most important customer base in the region, it is hardly surprising that most regional companies assign responsibility for access to seeds for smallholder farmers at the executive level. Eleven out of 17 companies have implemented a management system with senior management oversight of access to seeds-related programs or activities and they track their progress.

## Opportunities exist for regional companies to engage in global multi-stakeholder initiatives

Although most regional companies participate in national or regional industry associations, participation in global multi-stakeholder initiatives tends to be the domain of global companies. East African Seed, Kenya Seed Company and FICA Seeds are among the few companies giving the regional industry a voice at the global level.

## Regional companies outperform their global peers in the conservation and use of genetic diversity

Whereas global companies have formal commitments in place, most actual activities for the conservation and use of genetic diversity are found among regional companies. East African Seed, Kenya Seed Company and Seed Co, among others, partner with multiple local seed banks and global research institutes. NASECO and Kenya Seed Company also donate their germplasm to public research partners.

## Regional companies target local crops and use smallholder feedback to inform R&D decisions

In contrast to their global peers, regional companies include local crops such as amaranth and cowpea in their breeding programs. Local preferences are also taken into account. East African Seed, for instance, focuses its black nightshade breeding program on reducing bitterness. Multiple companies use farmer feedback mechanisms, such as Seed Co's on-farm visits and variety demonstrations, to inform their R&D decisions.

## Regional Index companies demonstrate innovative practices in marketing & sales

Regional Index companies, as well as smallholder-focused global companies such as East-West Seed and Technisem, tend to be more active than their global peers in the development and deployment of marketing strategies tailored to the needs of smallholder farmers. Specifically, these companies are more likely than the large multinationals to make use of open-pollinated varieties (OPVs), different seed grades, localized seed packages and appropriate demonstration services. Technisem excels in providing adapted packaging at affordable prices to smallholder farmers in the region, while Victoria Seeds uses mobile seed shops (tuk-tuks) to reach farmers in remote areas. East-West Seed demonstrates leadership with its systems to gather, track and handle smallholder farmers' complaints.

# Concluding Remarks

## ■ Capacity-building programs tend to focus on a few countries

Kenya, Tanzania and Uganda account for the majority of capacity-building initiatives in which seed companies are involved. Companies tend to focus their capacity-building efforts on only a few countries. In contrast, the company with the greatest capacity-building reach, Kenya Highland Seed, has activities in as many as eight countries. Often, companies partner with other organizations. NASECO's extension staff work with NGOs and private organizations to provide training; Victoria Seeds has established partnerships with local development organizations that seek to deliver extension services in Uganda. It is unclear whether company decisions or the availability of external partners limits the reach of capacity-building activities.

## ■ Regional companies involve smallholder farmers in seed production

Fourteen companies produce seeds in at least one Index country. Most seed production is concentrated in Tanzania and Uganda, followed by Ethiopia, Kenya and Zambia. With more than two thirds of the companies involving smallholder farmers in seed production, this is common practice. NASECO outperforms its peers, reporting that 90% of its production is carried out by smallholder farmers or farmer cooperatives. Behind it are East-West Seed (80%) and East African Seed (70%). Many companies report adherence to local labor laws, although only half disclose their social standards in seed production.

The Access to Seeds Index aims to highlight good practice and spark an increasingly evidence-based conversation about how the seed industry can best enable smallholder farmers to grow more and better food.

Yet it is clear that this conversation extends beyond the seed industry alone. It is essentially the role of governments to create the enabling environment in which markets can flourish. With seed companies covering all countries in the scope, excepting six countries in Western Africa, it would appear that market conditions in that region are a limiting factor. The seed industry, through its trade associations, could join forces with governments in Western Africa to improve the enabling environment.

For many of the global companies, working with smallholder farmers in Index regions is a relatively new part of their business. Despite broad country presence and crop portfolio availability, smallholder farmers still struggle to access the industry's products. Improving not only availability (distribution) and suitability (breeding) but also the other access dimensions of capability, profitability, affordability and autonomy will likely require partnerships.

As smallholder farmers themselves voiced during preparatory consultations for the Index, they see themselves not only as end-users of seeds but also as partners in breeding and production. As a whole, the practices identified tend to resemble a one-way delivery system. From both a commercial and agricultural productivity standpoint, it is thus worth exploring where and how smallholder farmers can act as dynamic, knowledgeable business partners of the seed industry rather than passive recipients.

Climate change is increasingly affecting agricultural production. This is particularly the case for smallholder agriculture, which is primarily rain-fed. Some seed companies have vowed to increase R&D spending on breeding for climate-resilient varieties. Company activity can also be detected in other areas, such as the conservation of genetic diversity or the provision of insurance against climate risks. As weather events become more extreme, and so too the damage they cause, the question of how the seed industry can increase its contribution is a priority topic on the future agenda.

Finally, it is important to note that the Index found only limited data on topics that have become increasingly important in international policy debates about the role of smallholder farmers, among them the role of women farmers, the need to inspire young generations to engage in agriculture and the relevance of informal seed systems. This disconnect between policy and practice will need to be addressed in the conversation this report hopes to ignite.

This first Access to Seeds Index is a baseline. It will be discussed with the seed industry and other stakeholders. Its methodology will, where necessary, be refined. However, the results of this report are intended to serve as a benchmark against which future efforts to bridge the gap between leading global and regional seed companies and smallholder farmers are measured.



## Access to Seeds Index

Bridging the gap between the  
world's leading seed companies  
and the smallholder farmer