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# Partnerships for Unlocking Potential in Groundnut Value Chains in Zimbabwe

## Executive Summary

Groundnuts are an important crop in Zimbabwe, grown by a large proportion of smallholder farmers (36%); groundnuts are second after maize in terms of area coverage. Groundnuts can provide an important source of food and nutrition, feed and soil amendment, as well as income. However, despite its importance, groundnut production and productivity has remained low and stagnant at less than 0.5 t/ha, yet yields between 3 and 4 t/ha can be achieved from improved varieties developed by research in the country. Cause for low groundnut production and productivity is the absence of a well-integrated seed system and functional grain value chains: 1. Poor access to quality seed of improved varieties – while released varieties yield more than 80% of the local varieties, varieties with high market demand are not available and farmers are therefore forced to use retained seed of landraces. 2. Poor functioning of grain markets – while the demand for groundnut products is increasing, as consumers seek affordable sources of protein, small- and large-scale industries failing to source groundnuts locally, import groundnuts, notably from Malawi, Zambia and South Africa.

In this brief we advocate partnerships among government, agro-businesses and smallholder farmers as an effective way for increasing groundnut production and creating more efficient groundnut value chains in Zimbabwe.

## IMPORTANCE OF GROUNDNUTS TO THE ECONOMY IN ZIMBABWE

Groundnuts are an important source of income, food, nutrition, feed and soil amendment. In Zimbabwe, they rank second only to maize in terms of importance and area coverage, and are cultivated by an estimated 36% of the country's smallholder farmers, across the different agro ecological zones (Figure 1). About a tenth of the total cultivated land in the country is under groundnuts.

### Households cultivating

<b>88%</b>	<b>36%</b>
Maize	Groundnuts
<b>20%</b>	<b>20%</b>
Small grains	Other legumes

### Total area cultivated

<b>54%</b>	<b>17%</b>
Maize	Small grains
<b>11%</b>	<b>5%</b>
Groundnuts	Other legumes

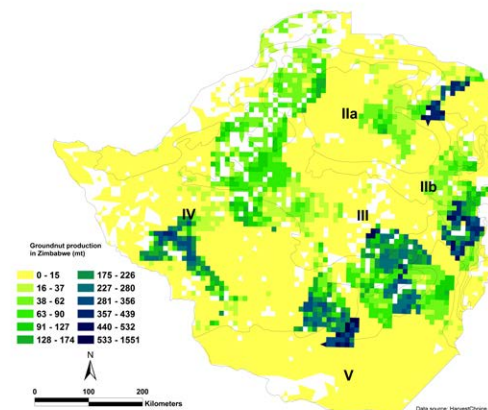


Figure 1. Major groundnut growing areas in Zimbabwe. (Source: ICRISAT GIS unit)

The area under groundnut production has doubled in the past 25 years (ZimVAC 2014, Figure 2). Productivity has however remained low and stagnant at less than 0.5 t/ha for many years. This is despite the availability of improved varieties with yield potentials of above 2.5 t/ha. Reasons for this yield gap include the absence of a well-integrated seed system and a functioning groundnut value chain. Farmers in the country have poor access to good quality seed of improved varieties that are preferred by the output markets, and most are therefore forced to plant retained grain of unimproved landraces resulting in low productivity.

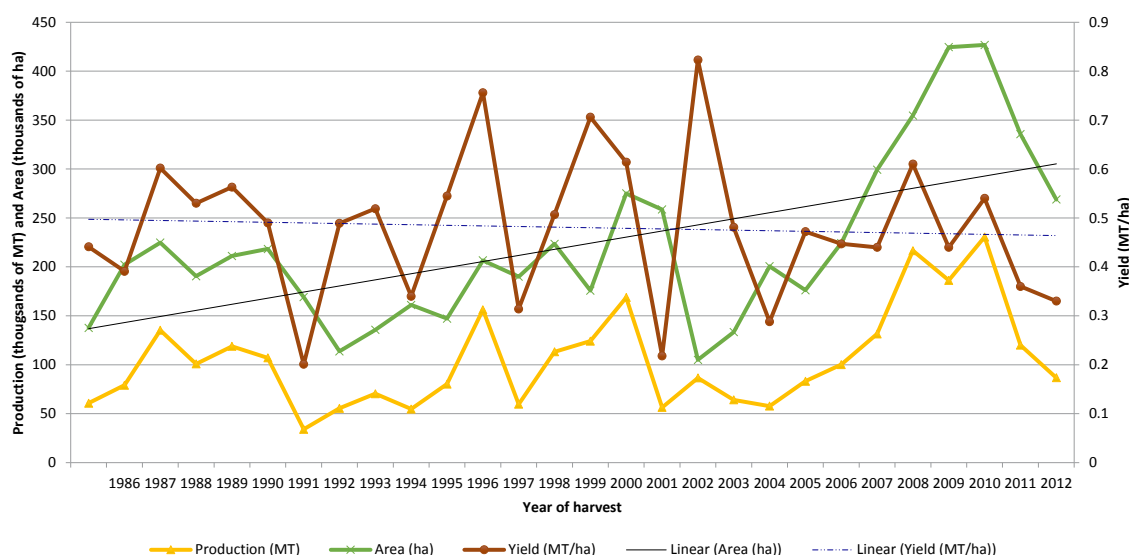


Figure 2. Groundnut production trends in Zimbabwe (1986-2013). Adapted from ZimVAC (2013 and 2014).

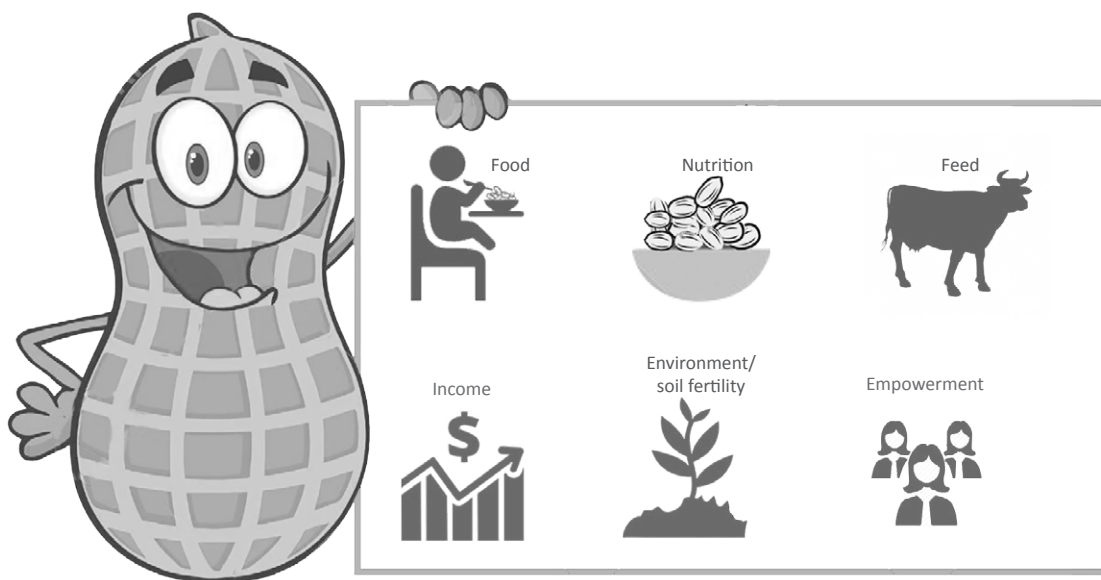
The country also has high potential for developing grain markets. While the demand for groundnut products is high and increasing, as consumers seek affordable sources of protein, local producers are failing to meet this demand resulting in the net import of groundnuts from Malawi, Zambia and South Africa by both small- and large-scale industries. This brief advocates partnerships among governmental and non-governmental organizations, including agro-businesses and smallholder farmers as an effective way for creating more efficient groundnut value chains in Zimbabwe.

Groundnuts are good for smallholder farmers in Zimbabwe, providing them with multiple benefits:

- Food and nutrition security: Groundnuts are high in oil content (close to 50% for most varieties) and vegetable

protein (approximately 26%), and are also an important source of vitamins and dietary fibre. Institutions like schools and hospitals, and low-income consumers in both rural and urban areas all rely on groundnuts as an affordable source of high quality protein. Groundnuts can also be processed to produce nutritional supplements for the poor and malnourished.

- Livestock feed and nutrition: With most smallholder farmers in the country practicing mixed crop livestock farming, groundnut haulms are a valuable source of supplementary feed during the dry season. Groundnut haulms have a higher crude protein content compared to cereal residues (11-17% compared to 2-8% in cereal residues). Adding groundnut haulms to other residues can replace commercial stockfeed for maintenance of livestock body weight.



- Soil fertility, environmental benefits through biological nitrogen fixation: Groundnuts are a natural nitrogen fixing crop, and their use in rotation systems can contribute significantly to improved nitrogen availability for subsequent cereal crops. This is especially important for resource poor farmers with limited access to nitrogen fertilizers.
- Income: Groundnuts are a high value cash crop, whose market demand is high both locally and internationally. Value addition through local processing of groundnuts could further increase farmer incomes from groundnuts as compared to other commonly grown rainfed crops.
- Women's crop: Traditionally women are responsible for cultivation of groundnuts, and they participate in the marketing of groundnuts. Engaging women in competitive markets is a way of empowerment.

### CONSTRAINTS OF THE GROUNDNUT SECTOR IN ZIMBABWE

Production of groundnuts in Zimbabwe has continued to be low over the years, largely owing to the disconnect between the missing seed system and non functional grain value chains:

- Poor access to quality seed of improved varieties: In Zimbabwe 12 improved groundnut varieties were released between 1966 and 2006, and their yield potential is above 2.5 t/ha. These new varieties are, however, not available at local seed markets. Farmers lack incentives to invest in improved seed whereas the seed industry prioritizes crops such as maize, soybean and cotton. Farmers are therefore forced to rely on retained seed of landraces. Limited efforts have been made to engage smallholder farmers into contract farming, eg, Reapers, Cairns. This has, however, been hampered by farmers exchanging seed outside the contracts.
- Poor agronomic and processing practices: Farmers lack knowledge and skills in groundnut production, with limited use of fertilizers and pesticides, and post-harvest management and processing options are poor. Government extension services are limited in their outreach to farmers and tend to focus mainly on

the staple maize crop. Private sector investment in groundnut production is also limited. It is only recently that groundnuts were rediscovered as a profitable crop, and supported by the research and development fraternity, along with awareness creation through agro-dealers.

- Poor market access: There is a vibrant and thriving groundnut processing industry, eg, Lyons, National Foods, Rotvic, Cairns, that imports over 90% of their requirements, mainly from Malawi, Zambia and South Africa at an estimated cost of US\$3 million per year. Local farmers are not able to access this market and cite distance to the markets as a major constraint. Industry on the other hand argues that low production volumes and poor collaboration in the assembly of farmer produce is a major reason why they have not been able to buy most of their groundnuts locally. Buyers and traders don't advertise when they purchase produce from smallholder farmers and farmers do not have access to market prices. The Agricultural Marketing Authority (AMA), government wing responsible for marketing of agricultural produce and its regulation in Zimbabwe, does not effectively link farmers with markets. Collected membership fee from both farmers and traders could be used more appropriately.
- Management of aflatoxins: Largely due to lack of awareness among stakeholders, aflatoxin contamination presents one of the major obstacles from accessing lucrative export markets. Seed varieties that are resistant to aflatoxin contamination have been released in the region but are not yet available in Zimbabwe.

### PARTNERSHIP APPROACH TO IMPROVING THE GROUNDNUT VALUE CHAIN

Different types of partnerships are required to address the various challenges along the groundnut value chains. Through partnerships, all actors can work more effectively in the groundnut value chains, benefiting everyone involved, and has comparative advantage over sole efforts by stakeholders: Public sector will become more effective in their service delivery, and achieve greater impact from

sharing information and technologies with farmers, while private sector will benefit through the increased profit that results from accessing required volumes locally at competitive prices. Farmers will gain from access to technologies and markets, and better organizing themselves in accessing inputs and information, negotiations with buyers and assembly of produce for sale. We believe that by strengthening existing and fostering new partnerships, through mutual beneficial relationships, we can catalyze market-oriented groundnut production in Zimbabwe. The rewards in increasing overall production, ensuring household food and nutrition security as well as enhancing income levels and thus reducing vulnerability in rural Zimbabwe will justify the investments.

Rebuilding the role of groundnuts for reducing poverty, improving food security and contributing to Zimbabwe's economy requires, first and foremost, an increased and consistent supply of high quality groundnuts by smallholder farmers to national markets. This increase in production can be achieved through a reconfiguration of the entire groundnut seed and grain value chains. Innovation Platforms (IPs) offer one approach for facilitating the alignment of all value chain actors, to respond to the specific requirements of the groundnut markets: Support services learn to redefine their role, and become more innovative towards building capacities and sustaining the market flows, in recognizing the site-specific agronomic conditions and management requirements. Farmers better understand how to produce high quality aflatoxin free groundnuts of defined varieties, in required volumes for the seed and grain for markets. Interventions that are implemented concurrently higher up the value chains and at farm level reward farmers for adopting improved technologies and increased groundnut production.

#### GAINS FROM PARTNERSHIPS IN GROUNDNUT VALUE CHAINS

Revitalization of the groundnut value chains has become a high priority in Zimbabwe to make use of existing market opportunities, and associated nutritional and environmental benefits. There are public and private players interested in the groundnut industry, which could operate more effectively, as new partnerships could also be forged. Consultation with provincial and national stakeholders and learning from experiences in Malawi set the following objective and key strategies:

#### Objective

To improve productivity, profitability and utilization of groundnuts in Zimbabwe

#### Strategies

Fast track release of new stress resilient, nutrient dense varieties with suitable post-harvest, handling and food safety qualities (aflatoxin)

Ensure continuous supply of breeder and foundation seed of improved groundnut varieties, following market demand

Sustain massive production, bulking and distribution of certified high quality seed, with high adoption by smallholder farmers who thereby increase their income from groundnuts

Catalyze supply of high quality grain to industries (oil, peanut butter), demand driven, through functional groundnut value chains, and with increased productivity and profitability of farming systems.

#### Role of partnerships

Partnerships bring together different stakeholders who can contribute resources or expertise to achieve objectives that are mutual or complementary in nature. They ensure that partners, in order to advance their individual interests, collaborate in a transparent and equitable manner. Sharing of risk, responsibilities and benefits is critical. They can create more than just financial benefits, building up trust and strategic linkages among stakeholders. Partnerships acknowledge that there is no blue print to address current challenges in agriculture. The nature of partnerships can change over time as needs arise. They can evolve from loose intends to collaborate towards more formal contractual arrangements. In countries such as Zimbabwe it is important for governments to play a strong role in facilitating successful partnerships. Donors invest in partnerships as a way to improve targeting and effectiveness of development interventions.

## Types of strategic partnerships

For Zimbabwe to reach these targets and using the full potential in groundnut value chains, stakeholders could work individually, but working with the right partners, at the right level, and on complementary functions, they can be reached quicker and everyone involved can gain more. Multi-stakeholder partnerships should be built around the critical bottlenecks for groundnut value chains, using their comparative advantages and complementarity in their objectives. They must be set up in parallel processes, to effectively integrate, adjust and scale out seed multiplication and grain production that follows market requirements. As groundnut value chains become more efficient, they provide greater flows of higher quality produce to markets, ultimately benefiting smallholder farmers. Functioning partnerships can thereby transform the entire groundnut sector.

Figure 3 illustrates types of strategic partnerships and how they can bring about lasting solutions and change in the groundnut sector in Zimbabwe.

### Fast tracking variety release

Initially, greater support must be given by the public sector to establish the process and inject the groundnut industry with new germplasm. ICRISAT in collaboration with DR&SS can test several advanced breeding lines and some improved public varieties that have been released in the region for local adaptation and industry acceptability. The most adapted high yielding lines that have industry preferred qualities can then be released in the country.

### Provision of breeder and foundation seed

ICRISAT and DR&SS can then collaborate with private seed companies and farmers in the production of high quality breeder and foundation seed of the released groundnut varieties.

### Production and distribution of high quality certified seed

Producing sufficient quantities of high quality seed recognizing market requirements is a major challenge. Public private partnerships can play an important role in ensuring the availability of quality groundnut seed to farmers. NGOs working with AGRITEX would have a critical role in educating farmers on groundnut agronomy and also in promoting the use of quality seed of improved varieties for improved productivity. Farmer Field Schools would also provide a formidable training avenue for seed production and value chain development. Through partnerships, a functional self-sustaining seed system that makes improved germplasm available to a much larger number of smallholder farmers can be developed. Two models are suggested: a. production of certified seed by registered seed companies and/or farmer associations, and

its large-scale dissemination through support programs; b. 'seed banks' as community activities that ensure season to season availability in remote groundnut producing areas. At the same time small and medium enterprises like agro-dealers or seed houses may act as local intermediary for assembly and quality control of the seed and supply farmers with relevant information and facilitate linkages to grain markets.

### Sustain grain marketing

Small and medium enterprises (agro-dealers, seed houses) play a critical role in buying and collection of groundnuts closer to the areas of production. Better access to grain markets motivates farmers grouping together in clubs to purchase inputs and seeds, and sell grain through the same centers. Farmers develop other new forms of collaborations, eg, work together during harvest and processing, and invest together in appropriate groundnut shellers and storage facilities. Recognized as clubs, farmers can also access credit for joint investments. ICRISAT, NGOs and DR&SS working with the agri-business actors and farmers together generate suitable models for bulking and selling large volumes of groundnuts, and develop the capacities of farmers and agri-businesses in the same process. The partnerships organize efficient marketing of large volumes of groundnut grains, complementary to the seed system.

### Flow of quality produce

Establishing food quality and safety control, along with market incentives, is essential to sustain the flow of quality produce. As farmer clubs become more self-organized, within communities, and through collaboration with agri-business and support services, they also gain capacities in quality production and post-harvest management. ICRISAT, NGOs and DR&SS build that capacity further, by initiating a food quality and safety system, which upgrades AGRITEX extension services and empowers farmer clubs to manage adherence to food quality and safety standards, including aflatoxin contamination. A traceability scheme, set up at the local enterprises that buy and collect grain, ensures that the product quality is verified and controls grades and standards, monitored by DR&SS. The collaborations contribute to establishment of a pricing mechanism that rewards quality produce, which in turn will encourage farmers to increase the volumes of quality controlled seed sold to markets.

### Flow of information across a wide range of users

Flow of information between the grain markets back to seed/grain producers and breeders ensure that groundnut production is continuously adjusted to market requirements. ICRISAT, DR&SS-ARI and CBI provide an important service collecting feedback from farmers through AGRITEX on new varieties including



Partnership objectives	Partnership expected outcomes
To sustain grain marketing and increase income from groundnuts (4)	<b>Area-specific collaborative arrangements for production and sale of high volumes and high quality grain</b> <ul style="list-style-type: none"> <li>• Small and medium grain enterprises and processors: Profits from contracting farmers to supply large volumes and high quality grain, efficient assembly, storage, transport, value addition.</li> <li>• Smallholder farmers, producer associations: Increased productivity, production and income through sustainable intensification of groundnut grain production (access to new varieties, improved crop management, system level integration of cereals-legumes-livestock), aflatoxin mitigation, mechanized labor-efficient production and post-harvest technologies, collective marketing.</li> <li>• AGRITEX: Farmers capacities developed on access to seed, crop management, land and water management to minimize erosion and improve water harvesting, post-harvest technologies, marketing.</li> <li>• Tele communications: Large clientele demanding services for knowledge dissemination and information on climate, agronomy, market trends.</li> <li>• NGOs: Up-scaling technologies, brokerage of market linkages, market information and communication, promotion of groundnut based weaning and therapeutic foods, complementary investments.</li> <li>• ICRISAT / DR&amp;SS: Market oriented researches, including variety development and agronomic technologies to ensure that market requirements are followed.</li> </ul>
To produce and distribute high quality seed (3)	<b>Public-private partnerships for multiplication of certified seed</b> <ul style="list-style-type: none"> <li>• Small and medium seed enterprises: Profits from contracting farmers and farmer associations for seed production and AGRITEX for relevant training, quality control, grading services, seed marketing.</li> <li>• Smallholder farmers, producer associations: Increased production and income from production of certified seed; either through: a. formal contracts or b. in remote areas community seed banks/ seed fairs to avail quality seed to a wider range of farmers.</li> <li>• ICRISAT/DR&amp;SS-ARI/AGRITEX: Agronomic practices developed for specific agro-ecological regions, farmer capacities improved on crop management and marketing, quality seed supply ensured through monitoring and control of seed production.</li> <li>• NGOs: Establishment of smallholder seed producers supported, eg, through complementary support for storage facilities, bulking and dissemination of certified seed, through seed fairs and other avenues.</li> <li>• ICRISAT / DR&amp;SS-CBI: Functional seed systems developed, creation of demand and updates on improved varieties through participatory varietal selection trials and demonstrations with farmers</li> </ul>
To provide breeder and foundation seed (2)	<b>Public-private partnerships for intensified production of foundation seed</b> <ul style="list-style-type: none"> <li>• Large scale farmers: Profits from contracts to multiply foundation seed</li> <li>• ICRISAT / DR&amp;SS-CBI: Functional seed systems developed</li> </ul>
To fast-track variety release (1)	<b>Public alliance for breeding and promotion of fresh breeder seed</b> <ul style="list-style-type: none"> <li>• ICRISAT/DR&amp;SS: Improved varieties scaled up, providing breeder seed under strict controls.</li> <li>• DR&amp;SS-CBI: New varieties released through national evaluation for local adaptability (drought tolerant, early maturing) and end use market quality; diagnostic tools and post-harvest management options to control aflatoxin deployed.</li> <li>• ICRISAT/DR&amp;SS-CBI: Assessments of processing industries' requirements and farmer preferences for groundnut traits.</li> </ul>

→ Flow of quality produce (5)

→ Flow of information (6)

Figure 3. Multi-level partnerships for revitalizing the groundnut industry in Zimbabwe, adopted from Lessons in Malawi (Siambi et al. 2015).

## Box 1. The Case of ICRISAT and National Smallholder Farmers Association of Malawi (NASFAM) partnership in Malawi

### Background

ICRISAT in collaboration with National Agricultural Research Systems (NARS) over the years developed numerous improved groundnut varieties. Although many of these had been released and made available to the farming communities in Malawi, the increased production only favored food security. Efforts to support smallholder farmers' request for market access remained a challenge. Therefore, in 2003, NASFAM, ICRISAT and NARS engaged in a partnership to test a new strategy – using a market-led approach for technology adoption and diffusion. The focus was on NASFAM to produce groundnuts of high quality and consistent supply for national and international markets, through development and dissemination of improved varieties and crop management practices, responding to specific market requirements. ICRISAT provided technical backstopping and strengthened the capacity of the farmers to achieve increased groundnut yields and high quality. The establishment of a food safety and quality system was a major component and established an aflatoxin screening system used by the associations for quality control.

### Lessons learnt

- Organizing farmers in clubs and establishing Marketing Action Centers (MAC) as buying and collection centers closer to farmers was helpful to avail quality seed to farmers and organize the marketing of groundnuts and reduce transaction costs.
  - Grades and standards were easy to control when farmers were organized in clubs as it was easy to trace produce through a traceability scheme that was put in place at the MACs.
  - Adherence to grades and standards led to high groundnut volumes with high quality (low or zero aflatoxin contamination), attainment of premium prices and supply to groundnut markets in the Southern Africa region and Europe through Fair Trade market.
- NASFAM through the support of ICRISAT set up laboratories to test for aflatoxin in grain at a cost of \$1 per sample compared to \$25 elsewhere.

emergent issues, like suitability to climate, soil fertility management, pests and diseases, price margins. They also connect to market actors to follow up on consumer preferences for variety development. At the same time ICRISAT and DR&SS identify farmer, AGRITEX and agri-businesses' needs for information and pathways on how information and technologies can be made more relevant and accessible to the respective users. Telecommunications are an important partner to promote the dissemination of such information to the various audiences, including farmers, AGRITEX, and agribusinesses. This helps to target technical information to specific agro-ecological zones and value chains, and raises awareness on quality and food safety, prices for quality controlled seed and grain.

### RECOMMENDATIONS FOR FACILITATING EFFECTIVE PARTNERSHIPS

In Zimbabwe, despite increasing attention to groundnuts as a nutritious food, feed and potential cash crop for smallholder farmers, successful partnerships have been difficult to establish. Public sector organizations are limited in resources and capacities, private seed companies' interest is weak due to low profit margins, and grain processors can import their raw material more cost effectively than buying it locally.

While there might be different ways to build partnerships under such conditions, we refer to Innovation Platforms (IP) as one successful approach that could be used to facilitate desirable change in the groundnut sector. An IP first brings together participants in groundnut value chains to identify and revise the critical bottlenecks and opportunities in groundnut production and marketing, around which partnerships should be built.

Well-informed discussions around groundnut seed systems, grain market requirements and production strategies will help to define the focal areas for partnership engagement. Participatory analyses, action and review of options to improve seed systems, grain production and marketing practices will bring forward a set of solutions addressing the real issues along the groundnut value chains. The IP can thereby inform the partnerships themselves and also links the partnerships with the broader developments in the groundnut sector.

Set up at the local level, with links to district, provincial and national scales, the IP becomes an important mechanism for developing capacity in seed systems and grain production. This ultimately enables smallholders to benefit from producing volumes and quality for markets. It also informs policies and decision-making, as it contributes to creating a more favorable environment for sustainable change in the groundnut value chains.

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The Integrating Crops and Livestock for Improved Food Security and Livelihoods in Zimbabwe project, also known as ZimCLIFS, promotes diversification towards more nutritious food and feed crops, and a market-oriented approach for leveraging local opportunities. At an Innovation Platform workshop in Nkayi District, communities rated groundnuts as potentially the most profitable crop, if markets were developed. This was verified by a subsequent value chain analysis and motivated ICRISAT and the Government of Zimbabwe to venture into a national initiative for revitalizing the groundnut industry in Zimbabwe.

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