



Grow**Asia**



Case Study

Corn Working Group in the Philippines

The Journey



PPSA

Philippines Partnership for Sustainable Agriculture

Contents

Grow Asia	3	1 Engage	7
<hr/>		Progress and Achievements	
Grow Asia	3	<hr/>	
<hr/>		2 Align	8
Purpose of the Case Study	3	Brainstorm and prioritize	
<hr/>		challenges facing smallholder farmers,	
NVA's 8-Step Framework for Action	4	align expectations, and define	
<hr/>		common goals	
Introduction	5	<hr/>	
<hr/>		3 Structure	9-10
ZGI Expansion	6	Determine organizational structure	
		(including leads for Working Groups),	
		how information will be shared, and	
		other details	
		<hr/>	
		4 Plan	11
		Co-design projects, including target	
		setting and responsibilities	
		<hr/>	
		5 Implement	11-14
		Determine how implementation	
		should occur	
		<hr/>	
		Looking ahead	15
		<hr/>	
		Corn Working Group	16
		<hr/>	
		Conclusion	17



Copyright

Grow Asia Singapore
Copyright © 2017 by Grow Asia.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Grow Asia.

Author

Deanna Salpietra

Edited by

Grow Asia

Grow Asia

74B Tras Street,
Singapore 079013
+65 6221 9528
info@growasia.org
www.growasia.org



Grow Asia

Grow Asia is a multi-stakeholder partnership that aims to reach 10 million smallholder farmers by 2020, helping them access knowledge, technology, finance, and markets to increase their productivity, profitability, and environmental sustainability by 20%. Grow Asia brings together South East Asia's smallholders, governments, companies, NGOs, and other stakeholders, to develop inclusive and sustainable value chains that benefit farmers. Grow Asia comprises the regional Grow Asia secretariat; country partnerships, each supported by local secretariats; and the working groups, which focus on specific issues and crop value chains.

PPSA

The Philippines Partnership for Sustainable Agriculture (PPSA) was catalyzed by Grow Asia and the Department of Agriculture as a multi-stakeholder and inclusive partnership platform that aims to engage smallholder farmers and bring together different sectors and actors to co-develop and scale initiatives to address key issues in agriculture. Working Groups (WGs) co-design and co-implement these value chain projects, which are locally driven, often led by the private sector, and bring together stakeholders from different disciplines to leverage their expertise.

Purpose of the Case Study

As part of a series, this case study is a tool to help new and prospective partners better understand how Working Groups are launched, evolve, and function. It documents the journey of how multiple stakeholders come together to co-create value chain projects on the ground. The case study also highlights partners' contributions and leadership and provides anecdotal evidence of the benefits and struggles from partnership.

This case study explores the process of operationalizing the Zamboanga del Norte Yellow Corn Project led by ZDMC Grains Inc. (ZGI) under the Corn Working Group from its genesis to project implementation. The project is still in its very early stages with many challenges yet to be addressed. Nevertheless, Grow Asia believes that there are valuable lessons in the group's journey so far, with many ingredients in place for a successful multi-stakeholder, value-chain project.

This case study is meant as an accompaniment to the Business Model Overview on the Zamboanga del Norte Yellow Corn Project which presents the structure of the Project and the core activities of each partner. Grow Asia documents the Corn Working Group's journey by adapting the framework developed by the World Economic Forum's New Vision for Agriculture (NVA) in *A Guide to Country-led Action*.

NVA 8-Step Framework for Action

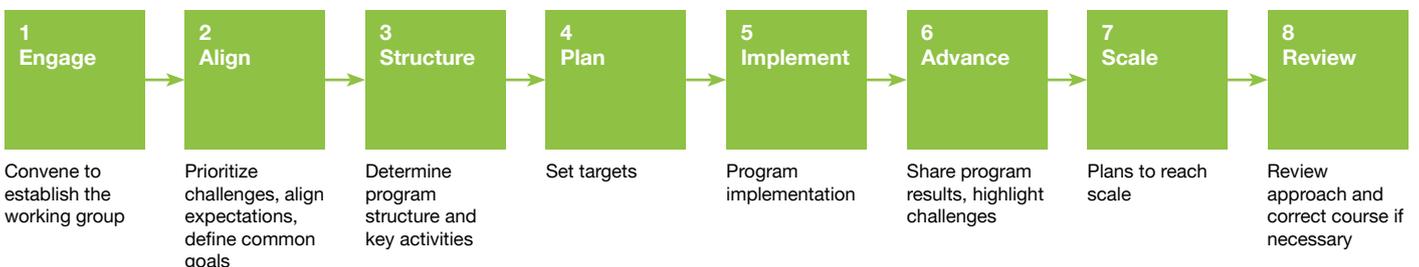
To meet the challenge of sustainably feeding 9 billion people by 2050, the agricultural sector will need to undergo major transformation.

Achieving this transformation will require new approaches and extensive coordination among all stakeholders in the agricultural system. Market-based approaches, while not the only answer, will be an important solution in the “toolbox” to drive change – providing the efficiency, scalability and market-based incentives to power a largescale effort.

The partnership models that have emerged from these efforts are diverse, but they are built upon a shared vision, a set of core principles, and series of key tactical steps that are similar across many countries. These elements have been captured here and described as the NVA Country Partnership Model.

Building on the thought leadership provided by the World Economic Forum, Grow Asia has organized this case study according to the **NVA 8-step Framework for Action**. While presented in a linear way, it is important to note that the partnership has and continues to evolve, with multiple steps occurring concurrently and at times re-occurring. These steps presented by the World Economic Forum are an excellent framework to better understand the core set of activities that this successful Working Group has undertaken during its journey.

Figure 1
NVA's 8-step Framework for Action



Introduction



ZDMC Grains Inc. (or ZGI) started as a company in 2012 by three entrepreneurs to address the constraints of yellow corn production in Zamboanga del Norte and fulfill the gap in yellow corn demand within the livestock producing regions of the Philippines.

Yellow corn is the largest component of livestock feeds used by livestock producers in the Philippines. Previous studies conducted show that the biggest regional deficit in corn production is within Batangas, one of the major livestock food-producing regions south of Manila. Due to the deficit, many feed mills in the area get their corn from other regions within the Philippines and most feed mills also occasionally import yellow corn to ensure a steady supply and uniform quality. Mindanao island produces a surplus of yellow corn, turning out approximately 2.1 million metric tons annually. While 50% of production goes to the feed mills in Visayas and Luzon, there is an additional opportunity for areas of Mindanao to supply yellow corn directly to feed mills in Batangas.

Mr. George Asenerio, President of ZGI, and his colleagues Mr. Oscar Barrera, Senior Adviser and Mr. Rossano Veluz, VP for Marketing and Finance saw this opportunity as one suited for Zamboanga Peninsula. Zamboanga

Peninsula has the 4th lowest average income per family in the country and a poverty incidence of 30.9%. While there are many contributing factors to poverty in the region, the reliance on subsistence agriculture is a significant one. Linking smallholder farmers to cash crop markets, particularly yellow corn which has a higher net return than white corn per hectare, could contribute to increased incomes and help to alleviate poverty. In Zamboanga del Norte, productivity of yellow corn is more than two times that of white corn and net returns (per ha) in the region are more than three times higher for yellow than for white corn. Despite the increased productivity and higher net returns, yellow corn is still not widely produced by farmers in Zamboanga Peninsula.

Multiple factors led ZGI to focus its start-up project in Zamboanga del Norte, the northern half of Zamboanga Peninsula: yellow corn has higher yields and higher net returns than white corn; there were few to no traders working in the area; and post-harvest processing infrastructure already existed in the region.

The project was designed to not only help increase the income of farmers in Zamboanga Peninsula, which is one of the poorest provinces in the country; but also to help ensure a sustainable and competitive supply of feedstock for small-scale livestock farmers in Batangas. The goal of the project is to: **Build a competitive supply chain of yellow corn feedstock from 10,000 smallholder corn fields in Zamboanga Peninsula to Batangas Region 4A cooperative feed millers and 24,000 small hog raisers.**

ZGI received early support from the government. The government-owned post-harvest processing center in the region was previously closed because it was operating inefficiently. The government allowed ZGI to take it over, which became the center of the company's operations in Zamboanga del Norte. The Government allowed ZGI to rehabilitate the plant, rehire the government staff running the plant, and pay the government a tolling fee of PHP 0.20 per kg of corn dried (or US\$4 per MT). In all other respects, ZGI started on its own, without the initial support of other stakeholders. As a start-up in the agriculture sector, it was difficult to get finance from banks and to attract the interest of the large input and technology suppliers.

Without finance or support from input suppliers, the company began by working with farmers as contract growers – initially financing inputs for the farmers directly and subsequently buying the harvest when it was ready. However, the farmers in the region were used to growing white corn for their own consumption. Planting yellow corn, which is a cash crop, was a major shift as the mentality and production techniques of farmers were largely that of subsistence farmers. This shift was more difficult than anticipated and ZGI invested heavily in preparing farmers to shift from white to yellow corn, or from a subsistence to commercial farming. These activities were named Farmer Development Services.

In 2012, ZGI was working with 70 farmers and converted 110 hectares (ha) to yellow corn. Early signs indicated success, with some of the high-performing farmers reaching yields of 5.5 MT/ha – which is 36% higher than average yields for yellow corn across the Philippines.

ZGI Expansion



ZGI continued its work - identifying farmers, educating them on the benefits of growing yellow and the aspects of shifting to commercial farming, financing their planting, and buying their harvest. By 2015 the company had helped farmers plant 135ha of yellow corn, and started drawing the interest of a local rural bank. However the finance offered during that time did not meet the unique needs of smallholder farmers. Interest rates were high, there were too many requirements for smallholder farmers to get the loans, and the release of finance and the repayment schedules did not align with the yellow corn season.

ZGI's post-harvest processing facility requires 100ha of corn to operate at break-even, but it was not able to reach that target based on shortfalls in the financing provided to farmers. But in 2015, the Department of Agriculture noticed that ZGI was turning around

the operations at the post-harvest processing center, and that the finance offered to farmers for production was a bottleneck. As a solution, the Department committed PHP 40 million through the Agricultural Credit Policy Council to be loaned to farmers in Zamboanga del Norte. The PHP 40 million (US\$800,000) committed was funded by penalties that banks in the Philippines pay by not complying with the Agri-Agra Reform Credit Act, which mandates that all banking institutions allocate at least 25% of their total loanable funds for agriculture. The money was channeled through Post Bank, who agreed to work with ZGI if the company would co-guarantee the loan for farmers.

ZGI acted as an intermediary between the farmers and the bank - helping to reduce the mistrust that exists between the two groups. ZGI's Farmer Development Services expanded to include education about the bank and its loan requirements. ZGI worked with farmers to get the documentation necessary to apply for the loan; the company then repaid the loans on behalf of the farmers when purchasing their harvest. ZGI's established relationship and trust with the farmers has made it an effective intermediary. ZGI's guarantee, as well as its commitment to ensure a good harvest, take responsibility for

transporting corn to the post-harvest processing center, and manage the loan repayments for the farmers, was also viewed by the bank as an extra layer of risk mitigation.

With this new financing arrangement, ZGI's reach grew to 365 farmers and 836ha of yellow corn by 2016.

As the project grew, ZGI realized that the work was becoming too big to handle alone. Firstly, it became clear that Farmer Development Services were a critical part of the success of the project, however as an off-taker and processor those activities were not a key part of ZGI's skill set. Farmer Development Services required a significant amount of time and investment. Identifying and consolidating farmers; linking them with finance; and providing inputs and technical advice are big tasks. How Farmer Development Services could be implemented across an increasing number of farmers, as well as how it could be funded, was a key area of consideration for the company. In addition, financing options for both the company and farmers could be improved to better meet their respective needs.

So ZGI continued to promote its work on the Zamboanga del Norte Yellow Corn Project to the government and investors, and in early 2016 got the attention of Grow Asia and the Corn Working Group.



1 Engage

The Corn Working Group is a multi-stakeholder group, established in late 2015 under Grow Asia and the Philippines Partnership for Sustainable Agriculture (PPSA). The Corn Working Group is driven by the private sector and establishes projects and partnerships aimed at advancing food security and sustainable agricultural growth in the Philippines. The group meets regularly to explore and support innovative and collaborative models for addressing specific issues in the corn value chain.

Grow Asia, through its support of the PPSA, helped to convene and continues to facilitate the work of the Corn Working Group. Grow Asia's involvement has been recognized as central to the working group by various members.

Firstly, Grow Asia helped convene the group of industry stakeholders that many feel would not have come together in a group like this on their own. Most of the stakeholders are already members of other industry groups – however the Corn Working Group differs in that **(1)** it is managed and led exclusively by the private sector; **(2)** it is multi-disciplinary, involving variety of different organizations from NGOs to Co-ops to private domestic and international companies which links production with market demand; **(3)** the group is organized by crop with a focus on sustainable agriculture not just for the benefit of the private sector but with a particular focus on the benefit for smallholder farmers.

Secondly, Grow Asia is able to share models with the group and give guidance. Grow Asia's cross-country

experiences can help members learn about new business models from other companies and countries; and its guidance and support on project development helps the Working Group to stay focused and move projects forward.

Thirdly, Grow Asia brings credibility to the group with outside stakeholders, including the government.

The Corn Working Group itself was looking for projects that would involve all of the members and therefore demonstrate the value of the multi-stakeholder group. While the group had identified key priorities of financing, post-harvest, and farmer capacity development – no projects had yet been agreed upon for collaboration. Most of the early ideas discussed by the Group focused on entering new markets or financing, and none provided an end-to-end solution linking smallholder farmers to end markets. There was a recognized need by the Group for an end-to-end project that would involve or be driven by an off-taker, in other words a buyer who had agreements with farmers to purchase their production and a secure market for selling. The Corn Working Group was looking for its first project that would serve as a flagship project proving the economic value of collaboration to the Group members.

In May 2016, ZGI was invited to a meeting by Grow Asia and presented its work to the Corn Working Group. At the time, the membership of the group was primarily input and technology providers, such as seed, fertilizer and chemical companies. While ZGI had

bilateral contacts and relationships with the different members, the Corn Working Group provided a platform to showcase what they were doing, get attention from the different members, and establish collective buy-in to identify technical problems and possible solutions.

The Corn Working Group adds value by serving as a platform, for industry stakeholders to connect, discuss and problem-solve for the benefit of the industry. While bilateral and tripartite agreements have always existed between the member companies, members agree that interaction through the Corn Working Group has improved not just industry-level discussions but also bilateral relationships. The Group provides the space for members to access key decision makers of other members. This is particularly important for the smaller domestic off-takers, like ZGI, who typically deal one-on-one with other companies, and sometimes struggle getting the attention of the larger multinational input suppliers. Through membership in the group, many members now know of initiatives and projects being undertaken by other members and can more easily identify opportunities for broader collaboration.

When ZGI presented its project, it was clear that the project matched the priorities set by the Corn Working Group – the model included farmer capacity development and financing; linked producers to the market; incorporated and was driven by a local processor; filled a clear gap in local demand; and provided an opportunity for all members to participate.



2 Align

The following stakeholders are currently engaged with ZGI to support its work in Zamboanga del Norte

Input and Technology Suppliers	Seeds: Sygenta	Corn Working Group member since 2015
	Chemicals: Sinochem Leads Agri	Corn Working Group members since 2015
	Fertilizers: Yara Sustansiya (starting 2017)	Corn Working Group members since 2015
End User	Lodlod Cooperative	Not current member of the Corn Working Group
	Maharlika Feedmills (starting 2017)	Not current member of the Corn Working Group
	Sorosoro Ibaba Development Cooperative (SIDC)	Corn Working Group member since 2016
Government	Agricultural Credit Policy Council (ACPC)	Not current member of the Corn Working Group
	Government Post Harvest Infrastructure	Not current member of the Corn Working Group
Financial Institutions	Philippine Postal Savings Bank (Post Bank)	Not current member of the Corn Working Group

The objectives of ZGI's Zamboanga del Norte Yellow Corn Project aligned with that of the Corn Working Group. In July 2016, members of the Corn Working Group agreed to support the project and visited ZGI's operations in Zamboanga del Norte. As a result, ZGI along with other Corn Working Group members, began implementing new solutions for Zamboanga del Norte and also began planning for expansion of the model into Lilo, further south on the Zamboanga Peninsula, in 2017.

Specific objectives, goals or targets for the Corn Working Group overall have not yet been identified. The Group has decided that early wins to showcase the benefit of industry collaboration are needed in place first, to guarantee the commitment of members. To do this, the Corn Working Group has so far taken a bottom up approach – starting out by identifying and supporting projects developed and pitched by individual companies, like ZGI, and bringing in collaboration of other members

as appropriate. The Group selects which project to support based on its contribution to sustainable agriculture and the recognition of shared priorities for the sector. Companies pitching projects have to be willing to share resources and ultimately be willing to expose customers to competitors (as some members are competitors). How the different companies decide to work together and the responsibilities of each are established on a case by case basis.



3 Structure

The project is in its early days of implementation, and so ZGI and the Corn Working Group members are continually negotiating roles and responsibilities and identifying opportunities for further collaboration on the project. This coordination takes place both within Corn Working Group meetings, as well as outside on a one-to-one basis.

The basic model of the project currently includes the following:

1. Consolidation and Farmer Development Services

ZGI first forms local farmers into groups and works with them to initially convince them of the benefits of planting yellow corn. The company also offers a suite of services, called Farmer Development Services, which include production scheduling, links to finance, links to inputs and production information, and links to local private tractor services. The Farmer Development Services helps increase the trust between ZGI and its supplying farmers and also prepares farmers with the tools and support they need to switch to yellow corn production successfully. While the Farmer Development Services were initially managed and financially supported by ZGI in Zamboanga del Norte, ZGI recognized that it lacked the capacity to implement Farmer Development Services at a larger scale. By bringing this issue to the Corn Working Group and Grow Asia PPSA, the group was able to develop a solution. Kasanyangan Center for Community Development Foundation Inc (KCCDFI), a local NGO will manage Farmer Development Services for expansion into Liloy going forward in 2017. KCCDFI is part of a group of NGOs which focuses on community development on the Zamboanga Peninsula.

2. Credit

Post Bank provides loans of PHP 40,000 per hectare to farmers to cover production costs. The Agricultural Credit Policy Council (ACPC), an agency of the Department of Agriculture, initially contributed a fund of PHP 40 million to Post Bank to cover loans for up to 1,000 farmers. Both the Department of Agriculture's Agri Guarantee Fund Program (AGFP) and ZGI provide a guarantee for the funds, of 85% and 15% respectively. Because of ZGI's close and trusting relationship with farmers and its role as guarantor, it works between Post Bank and farmers to ensure that farmers meet the lending requirements of Post Bank and then provides loan repayment directly to the Bank when farmers sell their corn. The intermediary role of ZGI provides extra security for the Bank as the company itself is invested in working with farmers to ensure a good harvest, and purchases directly from the individual farmers.

In addition, crop insurance is automatically provided to all farmer-borrowers benefiting from ACPC funds by the Philippine Crop Insurance Corporation. The insurance for corn covers the cost of production inputs plus an additional amount of cover up to a maximum of 20% of the value of the expected yield. For most of the farmers, this is their first time having crop insurance for their corn.

3. Inputs and Production Technologies

ZGI has engaged the input and technology suppliers in the Corn Working Group for inputs and technical advice. Syngenta, Yara, Sinochem and Leads Agri recognized the purchasing power of the groups of smallholder farmers that ZGI organized and in 2016 held 4 seminars and 2 harvest festivals to showcase their products in Zamboanga del Norte. Farmers have the ability to choose which inputs they want to purchase and, once purchased, the input suppliers provided technical assistance directly to the farmers. The input suppliers provide high quality inputs and technical assistance to improve the productivity of the farmers, and as a result increase their sales in the region. In Zamboanga del Norte, most of the farmers chose Syngenta seeds, based on the quality and responsiveness of technical assistance the company provides.

4 seminars
and 2 harvest
festivals held





4. Post-Harvesting

ZGI now runs the post-harvest processing center in Sergio Osmeña. Once ZGI purchases yellow corn from farmers it is transported to this center where it is consolidated, dried, cleaned, and stored until the grain is sold. ZGI ensures a regular market for yellow corn and coordinates with farmers on harvesting scheduling, timing and provides transportation. The Government supports the project by allowing ZGI to operate the post-harvest processing facilities for a tolling fee of PHP 0.20 per kg (US\$4 per MT) of corn dried. This agreement has been in place in Zamboanga del Norte since 2012. The arrangement allows ZGI to utilize existing post-harvest infrastructure, without having to invest in new facilities. The Government benefits by receiving the tolling fee and having its previously unused assets operating efficiently. If this arrangement proves successful, this demonstrates a viable model of public-private partnership that can be replicated with other infrastructure, with gains for all stakeholders involved.

5. Sales

ZGI ships the corn to Manila Port, with Lodal Multi-Purpose Cooperative as consignee/agent which sells and delivers the corn to other cooperatives in Batangas, including Sorosoro Ibaba Development Cooperative (SIDC). SIDC is one of the largest and most successful cooperatives in the country. It is based in Batangas with 24,000 members, primarily hog farmers. SIDC has its own feed mill which produces and supplies livestock feed for its members. SIDC requires 50,000 MT of yellow corn per year for its feed mill operations. As a member of the Corn Working Group, SIDC shared its volume and quality requirements for yellow corn with ZGI and informally agreed to purchase yellow corn from the company.

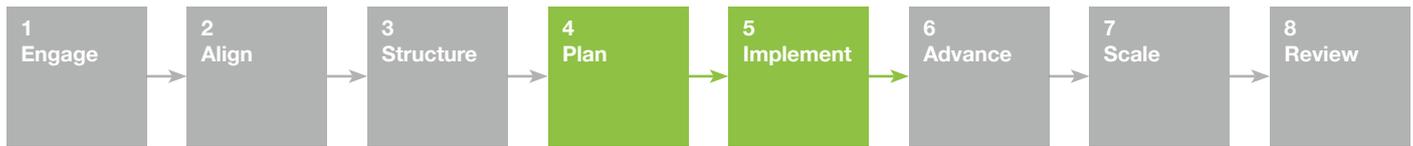
6. Technical Support

Other Corn Working Group members help to provide technical advice and address production challenges. As a chemical supplier, Sinochem also recognized the potential benefit of improving the production practices of smallholder farmers in Zamboanga del Norte for its business. Sinochem agreed to support ZGI to develop solutions to particular technical challenges that producers face. Much of the land in Zamboanga del Norte is sloping land. While farming corn on sloping fields is good because it requires minimal tillage, erosion can become a problem. Sinochem sent a group to Zamboanga del Norte to evaluate the farms and conduct soil analysis to identify solutions that can be systematically carried out, such as erosion control and use of organic fertilizer for improving soil conditions. While the immediate benefits to Sinochem as a business are minimal, the company recognizes the long-term value in developing a sustainable yellow corn production in the region.

Some of the activities described above are implemented with stakeholders outside of the Corn Working Group. All of the Corn Working Group members recognize the benefits and potential solutions that could be developed by involving new members, particularly financial institutions and the government as contributors to the working group, and so efforts are planned in 2017 to bring these stakeholders into the group more formally.

“I was particularly grateful that most of the Corn Working Group made the effort to come over from Manila to visit our production and processing sites in Zamboanga del Norte, because after that a feeling of shared experience has made the group more forthcoming with ideas, with greater willingness to offer suggestions and solutions, and even identify problems we hadn’t experienced yet but would surely come. The dynamics of interaction has always been positive and, to me, truly gratifying.”

Mr. George Aseniero
President of ZDMC Grains, Inc.



4 Plan

ZGI set a target to reach 2,000 smallholder corn farmers by the end of 2017, expanding to a further 10,000 farmers in Zamboanga Peninsula by 2021.

ZGI is responsible for tracking all information on farmers regarding production costs, farmer loans, yield and income and updates the Corn Working Group as requested. ZGI used farm financial plans to estimate the required production inputs and corresponding loan amounts, and tracks for each farmer the volume of sale to ZGI along with loan and inputs payable. By collecting this information for each sale, ZGI is able to measure improvements in farmer's yield and income from season to season. As ZGI expands its work through the Zamboanga Peninsula, it will also be able to compare farmers' performance between different locations. ZGI will also monitor soil conditions in the region, to track erosion and changing soil fertility, following the technical assistance provided by Sinochem.

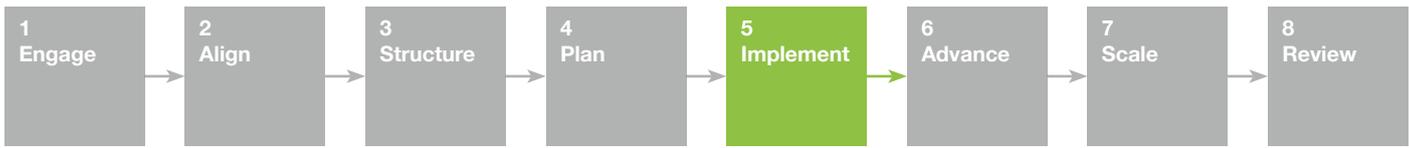
5 Implement

While the cooperation of the Corn Working Group members in the project in 2016 has shown significant benefits, there were some unanticipated setbacks experienced during the year. Both El Niño and La Niña weather phenomenons occurred in 2016. At the start of the year, a drought stopped ZGI from bringing in new farmers for planting. Many farmers who planted during the season were impacted by the severe rains caused by La Niña, which resulted in damaged crops and affected their subsequent ability to repay their loans. Some of the farmers as well as ZGI experienced losses to crops and income during the year.

Replanting for the 2017 season in Zamboanga del Norte has largely been postponed due to flooding early in the year and a delay in releasing finance for replanting due to unpaid loans from the 2016 season. The company is currently helping farmers to file damage claims in an attempt to remediate the situation and begin replanting for the remaining 2017 season. However, most farmers are hesitant to file insurance claims for fear that they will be recorded by Post

Bank as having triggered recourse to guarantee funds, which in their understanding will disqualify them from accessing to future crop loans. Many of them have informed ZGI that if they cannot access crop loans by the end of April 2017 they will revert back to white corn subsistence farming. This issue is still in the process of being resolved. In 2016, SIDC purchased 21.5 MT of yellow corn from ZGI. An issue with receipts for the initial purchase, poor weather, low yields in the latter half of 2016 and early 2017, and the lack of bulk transportation options between Zamboanga del Norte and Batangas has delayed a second transaction between ZGI and SIDC.

While SIDC and ZGI have yet to establish a formal marketing relationship, SIDC is still committed to purchasing yellow corn from ZGI so long as its quality conditions are met, and the price is competitive. Recently, ZGI signed a Memorandum of Agreement for the delivery of corn to Maharlika Feedmills in Batangas, guaranteeing a market in Batangas for 2017.



Additional partners for expansion to Liloy include		
Input Providers	Seeds: Pioneer	Corn Working Group members since 2015
Finance	First Valley Bank	Not current members of the Corn Working Group
NGO	KCCDFI	Corn Working Group members since 2016

The following results occurred in Zamboanga del Norte during 2016:

- 300 farmers trained
 - 4 seminars/training programs held
 - 2 harvest festivals held
 - 365 farmers planting yellow corn on 836 hectares (average area per farmer 2.35 ha)
 - While the overall yields for farmers are difficult to determine due to the severe weather of 2016, some high performing farmers who managed to harvest before the weather reached as high as 6.9 MT/ha. The highest yield after the heavy rains showed 4.4 MT/ha. Both of these figures are a significant increase over the yield of white corn, and shows substantial promise for coming seasons.
 - 21.5 MT of yellow corn sold to SIDC
- Provided the insurance payments in Zamboanga del Norte are settled, and there are no more extreme weather events in 2017, ZGI expects to reach a total of 1,000 farmers in the region by the end of 2017.

Yellow corn farming has significant benefits to farmers: it produces higher yield and requires fewer inputs than white corn – producing more tonnage per HA and it requires fewer inputs than white corn which makes it easier to manage and lowers the cost of production. All of this increases the net income of farmers, who may have been earning very little to no income by producing white corn as a subsistence crop. By increasing farmer yields to 6-7 tons per ha farmers have the ability to earn on average PHP 30,000-35,000 (US\$600-700) in net income per harvest (with typically two harvests per year).

There are risks and challenges to yellow corn production, just like in any agricultural crop. The weather, quality of technical assistance provided, and farmers’ ability to follow advice and appropriately care for the crop can all influence productivity and income. It is therefore important that all of the stakeholders work together to make certain that Farmer Development Services, financing, technical assistance, production, processing and purchasing are effectively managed for the best interest of smallholder farmers.

The project has been underway since 2016 and plans for 2017 include scaling up in Zamboanga del Norte as well as expanding into Liloy in the southern part of Zamboanga Peninsula. Expansion to Liloy will use a similar model, except that KCCDFI, a local NGO, is engaged to manage the Farmer Development Services and First Valley Bank will be offering finance to local farmers. The target is to reach 1,000 additional farmers in Liloy by the end of 2017. KCCDFI is now providing the Farmer Development Services in the new region of Liloy with support from Grow Asia.

KCCDFI has just begun its work in Liloy in the first quarter of 2017 and is currently in the process of organizing and sensitizing farmers to yellow corn production. By May, KCCDFI expects to have enrolled 300 farmers, and it plans to reach 1,000 farmers by the end of the year. To convert smallholder farmers in Liloy to successful yellow corn farmers, it will be particularly important for KCCDFI to work closely with the input suppliers. In addition to clustering farmers, the NGO will also organize technical assistance and inputs with the input suppliers, schedule production with

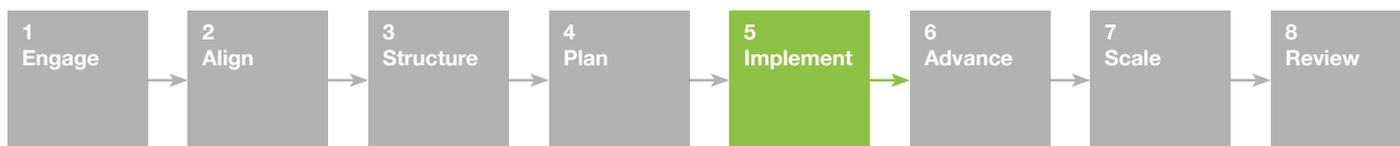
farmers, facilitate loans through First Valley Bank for inputs and private tractor services, and organize the logistics and aggregate the farmers’ harvest for sale to ZGI.

The local government in Liloy has also agreed to pass operation of the post-harvest processing facility located there to ZGI under a similar arrangement as in Sergio Osmeña. ZGI hopes to have the post-harvest processing facility in Liloy up and running before the first harvest this year, otherwise the corn from the region will be sent 100km to the facility in Zamboanga del Norte.

For expansion into Liloy, all of the input suppliers are on board to showcase their products, and in particular Pioneer has agreed to establish a demo farm in the region to show farmers the increased productivity of yellow corn over white corn.

In Liloy, First Valley Bank has similarly agreed to provide PHP 40 million (US\$800,000) of its own finance for farmer loans. The loans will operate in the same way as in Zamboanga del Norte, with KCCDFI serving as the intermediary and with the loan amount deducted from the harvest price and repaid to the bank directly.

Outside of the Corn Working Group, ZGI is also responding to initiatives arising from local groups in the Autonomous Region in Muslim Mindanao to explore jointly with them the potential for expanding the model into that vast corn-growing region, linking existing yellow corn producers with more markets, including export to Malaysia.



There are, however, challenges which ZGI is currently developing solutions for through discussion and partnership with the Corn Working Group. The Corn Working Group is providing a valuable platform to identify collaborative solutions with other industry partners.

Sustainable Farmer Development Services

Farmer Development Services organized by the project include: identifying and clustering farmers; educating farmers on finance and commercial yellow corn farming; coordinating the provision of productivity improving services; providing linkages to support institutions; and scheduling production and aggregating harvests. All stakeholders agree that these services are crucial to a successful supply chain. In the case of the Zamboanga del Norte Yellow Corn project, the question of how these will be provided sustainably is one that has been answered by the Corn Working Group.

A fund is now being established to support the Farmer Development Services delivered by KCCDFI. ZGI has agreed to provide PHP 0.20 per kg of the total value of corn it purchases from farmers to the fund. Both Post Bank and First Valley Bank are considering implementing a 3% service charge on their loans, thus transferring some of the costs of Farmer Development Services to the farmers. Other members of the Working Group are also willing to contribute a flat annual fee of PHP 150,000 (US\$3,000) to the fund. A long term commitment to funding Farmer Development Services will be critical to ensuring the benefits for smallholder farmers are maintained. If Farmer Development Services become fully sustainable in years to come, it will be a unique example of industry collaboration for the benefit of smallholder farmers.

Financing

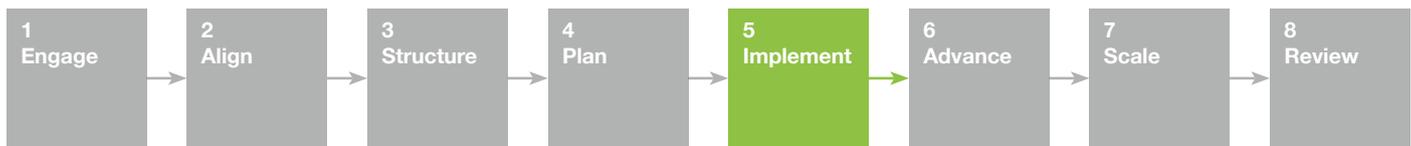
While finance is being directed towards farmers, there is still room for improved financial products and options which address the unique needs of the agriculture sector.

For ZGI, the business itself has capital requirements which are not currently being addressed by the financial system. The business of buying and selling corn has huge capital requirements, as there is typically a two-month gap between purchase of corn-on-cob from farmers and collection of sale proceeds from end-users in Batangas, which ZGI has to shoulder. This gap is not currently addressed by the banking system, as banks still require real estate mortgage in order to lend to a young company like ZGI, and banks do not give a security value to inventory stocks or receivables. This financial gap, unaddressed by any kind of merchant banking for Philippine agriculture, is a serious problem to ZGI as it plans to expand its corn-buying network in 2017. ZGI is preparing for the significant upscaling of its corn supply chain operations by seeking equity investment from development-oriented institutions, both Filipino and foreign, and it is now in advanced talks with two such investment firms.

All members of the Working Group have expressed concern over the lack of appropriate finance, not only for smallholder farmers but also for agricultural companies. In the coming year, the Corn Working Group, with support of PPSA and Grow Asia, plan to bring more financial institutions into the group to develop better and wide-spread solutions for agricultural finance.

Formal Agreements with Input Suppliers

ZGI is seeking to formalize partnerships with input suppliers. Currently farmers choose their inputs, which are purchased from existing local distribution networks in Zamboanga del Norte, with the local marketing agents providing technical assistance to farmers after purchase. ZGI is hoping to establish more formal partnerships with input suppliers so that it can become a direct distributor, - purchasing inputs at bulk rates and passing the savings down to farmers. ZGI also wants to work with the input suppliers to provide technical assistance more regularly – to assist farmers, ensure the proper use of inputs and monitor their progress. ZGI is currently discussing supplier credit options with some of the input suppliers, which would help to improve the cash flow for farmers and would be a great addition to loan financing. ZGI hopes that once credit options for farmers are in place, it can finalize formal agreements for distribution of inputs.



Insurance

The experience in 2016 with El Niño and La Niña emphasized the fragility of farming in the face of extreme weather. While crop insurance exists for farmers, the year proved to be a strain on the system, highlighting the need for more appropriate insurance options for smallholder farmers and better links to finance provided by banks. The Corn Working Group and Grow Asia are looking at ways to support new government initiatives to introduce index insurance for corn and rice farmers across the country. ZGI is also discussing options for input insurance provided by the input suppliers themselves.

Logistics

Trucking services within the Zamboanga del Norte area are limited and can affect the timing of delivery between farms and the post harvest processing center. In addition, the processed grain is shipped from Zamboanga Peninsula to Batangas traditionally – i.e. by ship to Manila Port and then by truck to Batangas. This method is costly and time-consuming but the infrastructure for bulk shipments between the two regions is not in place. ZGI is in early discussions with the National Development Company regarding investment into port storage facilities to allow for shipment by barge between Zamboanga Peninsula and Batangas, which is not only faster but significantly lowers the cost of shipping in bulk. This would involve setting up grain holders in ports in both Dapitan and Batangas, and would reduce the cost of shipping by more than half.

Having bulk storage options increases ZGI's overall storage capacity, which is currently quite limited and not enough to hold its target of 2,000 hectares by the end of 2017. Storage is also an important link in managing price fluctuations and rebalancing power to the producers. It gives the company an option to hold the sale of the grain until the prices are favorable, and storage at the port in particular opens up export potential for when the domestic market is oversupplied. ZGI hopes to establish port storage facilities by the end of 2017.

Power outages at the post-harvest processing center are limiting the processing capabilities and putting both the company's and farmers' incomes at risk. ZGI is exploring options for an alternative power supply. All of these logistical issues are important and need to be addressed before ZGI can effectively increase the scale of production.

Farm mechanization

It is anticipated that as the project scales up to 2,000 hectares in 2017 and on to its target of 10,000 hectares overall, farm mechanization services – such as tractors, seeders and harvesters – will be increasingly necessary.

Yanmar, a Japanese farm mechanization firm, met with the PPSA Secretariat and will be joining the next Corn Working Group meeting to explore how it can help not only in providing Farm Mechanization services but also financing the equipment for farmers or the private sector in partnership with the Japan International Cooperation Agency (JICA).

ZGI continues to explore many different solutions with members, and is hopeful that collaboration amongst the Corn Working Group members will increase and strengthen its work in Zamboanga Peninsula.

Looking ahead

The Zamboanga del Norte yellow corn project clearly has a long way to go. While it remains too early to discuss the stages of Advance, Scale and Review for the project, its experiences so far have been positive. Despite initial setbacks, partners, led by ZGI, have demonstrated a commitment to collaborate to establish a sustainable model of working that adds value to smallholder farmers.

In the meantime, the Corn Working Group will continue to work in partnership for the success of ZGI's Zamboanga del Norte Yellow Corn project, and has plans to assess the project later in 2017 to determine if the model or elements can be replicated or scaled further. A second project is currently being developed and has already been presented and approved by the group, led by Biotech Farms in South Cotabato.

Biotech Farms operates chicken and hog farms and is building an end-to-end supply chain between corn and rice farmers and its livestock production operations. The company is building a new feed mill which will be powered through renewable energy generated on its own livestock farm. The feed mill will supply its farm with chicken and pig feed. Biotech Farms plans to develop its own set of Farmer Development Services (or private extension services) as an internal part of its business in order to develop a sustainable supply of corn and rice for the feed mill. The company is targeting 6,000ha of corn and 20,000ha of rice. While Farmer Development Services are a new activity for Biotech Farms, the company sees value in investing in it, as the cost of working directly with farmers is lower than the cost of transacting through local traders. The company will finance and manage Farmer Development Services internally, by hiring a cadre of Farmer Development Officers and developing training materials with input from the Corn Working Group and the Department of Agriculture.

The key issue facing farmers in the South Cotabato region is their ability to earn a good net income. Farmers in the area already grow yellow corn and have high yields. The issue is that farmers are having to borrow from loan sharks, which charge a high rate of interest; and are selling to local traders, which do not pay a fair price. This reduces the net income that farmers earn from growing yellow corn.

Biotech Farms is learning from ZGI's experience and also hopes to learn from other models developed under Grow Asia in other countries. The company is currently identifying and introducing its services to farmers, hiring and developing staff for the Farmer Development Services, and working out arrangements for how it will work with other Corn Working Group stakeholders. The feed mill is expected to be complete by December 2017, and the project's full activities are anticipated to kick off in 2018.



Corn Working Group

The Zamboanga del Norte yellow corn project is one of the projects in the Corn Working Group. The Corn Working Group provides support to the individual projects, but takes a broader perspective of achieving sector-level change. This section briefly discusses the Working Group's plans, challenges, and important factors for success.

Because of the irregularities with the cropping season in 2016, more systematic data collection and presentation to the Corn Working Group is only expected to start in 2017. The Corn Working Group expects to more thoroughly assess the progress of the project at the end of 2017.

The Corn Working Group will continue to seek projects which will benefit all members, so that the value of collaboration can be proven and the sustainability of the group ensured. Eventually the group hopes to set high-level goals and develop shared projects developed by the group based on industry-level challenges.

Going forward, PPSA will take on a secretariat role for the Corn Working Group. Its main function will be to help coordinate the Working Group, facilitate discussions, support performance measurement of projects, increase membership and make the operations sustainable through member contributions.

The challenges for the Corn Working Group going forward will be:

> Bringing in new members to improve and increase collaboration:

The group recognizes the need to bring in new members – particularly off-takers, NGOs, and financial institutions. Off-takers provide the necessary link between production and demand; NGOs are the crucial link to ensuring the social aspect is considered, particularly helping farmers to transition to new models; and financial institutions are necessary to develop appropriate solutions for farmers and agricultural companies.

> Identifying projects for collaboration:

It will also be important for the Working Group to identify new and collaborative projects, both through existing members as well as by bringing in new members. More projects need to be developed and approved so that more members benefit through collaboration and therefore see the long-term value of participating in the Working Group. So far, Grow Asia has been responsible for identifying and linking ZGI and Biotech Farms' projects with the Corn Working Group. However, it is largely recognized that the identification and development of new projects should be 'owned' by the group itself to ensure commitment and sustainability. Identifying new projects requires the commitment of members—to attend group meetings, share ideas, brainstorm solutions, seek new partners and contribute to new projects.

> Project management

Projects are typically managed by one company with support and collaboration of others on an ad hoc basis. Many of the organizations that are participating in the projects have their own business to oversee and can become quite busy. Effective and results-oriented project management is needed to make sure that all stakeholders are aware of their own roles, the progress and new challenges – so the inputs and skill sets of different stakeholders can be leveraged appropriately and quickly. At a project level, close interaction within the field and outside of the headquarters or Corn Working Group meetings may be necessary so that decisions, changes and solutions can be made on the ground in real-time. This can only be achieved if there is dedicated and effective project management.

> Targeting industry issues

While the Corn Working Group has become a space for individual companies to pitch project ideas and get the support and buy-in from other stakeholders, there are certain issues which affect all members and for which cross-cutting solutions are better suited. One such example is finance – which affects all value chain players. The

Working Group acknowledges that as a group, they can have more credibility than companies individually creating or negotiating solutions with financial institutions. The Working Group already plans to engage more closely with the financial sector in the coming year, and keeping this momentum will be important in solving one of the most pressing issues for the corn industry.

Key factors for the continued collaboration and success of the Corn Working Group were identified by some of the members. These include:

> Long-term commitment:

Commitment, financial and otherwise, from all members with a long-term perspective.

> Cooperation:

The continued openness and willingness of members to voice ideas, pitch project plans, share information and work together.

> Shared projects:

New shared projects would pique the interest of members. That is, projects built together by the members to solve sector-wide issues affecting all – such as sharing risk for new activities in new areas or sharing risk and investment to develop best practices in production or finance.

> Alignment or fulfillment of individual interests:

Stakeholders have their own motives for participating – whether to advance their products and services, influence policy and advocacy, or build and protect incentives for farmers. These interests need to be fulfilled and factored into a project's design in order to secure long-term commitment from the members and success of the Group.

Conclusion

The corn value chain project in Zamboanga has been in operation just over 2 years; it is still too early to tell whether the project will be successful. Nevertheless, this case study brings to light many important lessons for others grappling with the difficulties of early stage project design, development, and implementation, as well as the need to go to scale.

1. While the Corn Working Group identified (i) productivity improvement, (ii) post-harvest, and (iii) agricultural finance as early areas of collaboration, it was not until ZGI joined the Corn Working Group that the vital off-taker role was filled and kick-started the value chain project. Grow Asia's regional experience has repeatedly demonstrated that the participation of a committed off-taker is essential because it provides the necessary motivation for the involvement of the other partners in the value chain. In this case, input suppliers provided technical advice, developed production techniques, and subsequently market their products. The need to finance the purchase of inputs, and insurance policies to de-risk the new enterprise for farmers, subsequently drew financial institutions. Looking ahead, contract mechanisation services may be further introduced to facilitate scaling and reducing costs.

2. A core advantage of the project was the strong and growing market opportunity in supplying yellow corn to the feed mills and hog farmers in Batangas. Additionally, the Zamboanga farmers had experience growing corn, albeit white corn for their own use. Field trials have demonstrated the potential of yellow corn yields in Mindanao to be a third above the country's average. Overall, yellow corn will be significantly more profitable than white corn.

3. Notable challenges include working with farmers with little experience of (i) modern production techniques, (ii) interaction with financial institutions, and (iii) commercial marketing of their products. In addition, gaps remain in the post-harvest system where local logistic costs are high and compounded by small volumes of throughput that result in high transaction costs per ton. If production can successfully scale, unit transaction cost can then be reduced to cost competitive levels. Lastly, the project was unlucky to face some extreme weather events.

4. The government played an important role in making the project work. ZGI could dry, grade, and store their grain using an underutilized government-owned corn processing facility. This obviated ZGI's need to invest its limited capital in expensive post-harvest equipment. Instead, post-harvest operations were undertaken on a toll-processing basis (i.e. charged per unit processed). Additionally, government funds were secured for help finance the initial loans to the farmers.

5. The Zamboanga corn project's approach and lessons are being replicated in Lilooy by ZGI, and in South Cotabato by Biotech Farms, which is developing its own contract farming project for corn and rice based on lessons from ZGI's experience in Zamboanga.

As is typical for early-stage agricultural projects, there have been significant challenges in this journey. Unexpected weather conditions affected the initial harvest and dampened grower enthusiasm as claiming on the insurance policy that was meant to de-risk the out-growers may render them ineligible to be re-insured in the future. This would make it difficult for the trained and experienced yellow corn growers to participate in the project in the future and will need to be resolved, possibly with improved or different crop insurance schemes.

Secondly, as also often the case in agricultural projects, long-term viability is dependent on reaching critical scale to sufficiently lower unit costs and be competitive. The project has not yet reached the scale needed to be profitable and self-sustaining. ZGI additionally realized that the level of support needed to be provided to farmers via the Farmer Development Services was beyond the level of resources that they could afford and has responded by drawing in NGOs and support from the inputs suppliers.

The Zamboanga corn project is by most measures an ambitious project. It is trying to launch a new supply chain of yellow corn from Mindanao to meet a domestic demand. If successful, its impact would be transformative—bringing to one of the poorest areas of the Philippines a substantial new source of income by accessing a growing and profitable market opportunity.