

Root Solutions

FERTILIZER DEEP PLACEMENT (FDP) FOR POVERTY REDUCTION IN VIETNAM

CODESPA Foundation
2011



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LIST OF ABBREVIATIONS

AECID:	Spanish Agency of International Cooperation for Development
AES:	Agricultural Extension Station
AGRIBANK:	Bank for Agriculture and Rural Development
BDS:	Business Development Services
BoP:	Bottom of the Pyramid
CODESPA:	CODESPA Foundation
CPRGS:	Comprehensive Poverty Reduction and Growth Strategy
CSR:	Corporate social responsibility, also called sustainable responsible business
DARD:	Department of Agriculture and Rural Development
IDE:	International Development Enterprises
IFDC:	International Fertilizer Development Center
FDP:	Fertilizer Deep Placement
GIS:	Geographical Information System
HUA:	Hanoi University of Agriculture
MARD:	Ministry of Agriculture and Rural Development
M&E:	Monitoring and Evaluation
MSME:	Micro, Small and Medium Enterprises
MCC:	Mu Cang Chai (District)
NK:	Nitrogen (N) and Potassium (K)
NPK:	Nitrogen (N), Phosphorus (P), and Potassium (K)
PC:	Placement Center for vocational training and education programs (Women's Union)
PPP:	Public-Private Partnership
R&D:	Research and Development
SAO:	360 square meters
TOR:	Terms of Reference
TOT:	Training of Trainers
TT:	Tram Tau (District)
WU:	Women's Union

Partner institutions

CODESPA Foundation

The CODESPA Foundation, a private Spanish NGO, has been supporting development initiatives in Vietnam since 2000. Under the auspices of AECID, CODESPA has been promoting project activities that address poverty alleviation in the rural communities of Northern Vietnam, by facilitating the creation of small business enterprises and market-based solutions to address rural poverty through income generating activities.



CODESPA is strengthening the human and institutional capacity among local partners to design and implement a pro-poor, market-oriented development model. In addressing rural poverty, CODESPA has particularly taken into account gender relations and the central role of women as primary participants in the rural economic activity of Vietnam. CODESPA is also supporting project activities that promote stewardship and the enhanced sustainability of the environment.

The Women's Union (WU)

The WU in Vietnam was founded in 1930 with the mandate to protect women's legitimate rights and to strive for gender equality. At present the WU¹ has a membership of above 13 million members belonging to 10,472 local women's unions in communes and towns throughout the country. The organizational system of the WU is divided into 4 levels comprising the Central level, the Provincial and Municipal level, the District level, and the Commune level. The Yen Bai WU has been the owner of the Fertilizer Deep Placement (FDP) project in Yen Bai.



The Department of Agriculture and Rural Development (DARD)

The DARD² of Yen Bai is the implementing partner of the FDP project. This provincial department is under the authority of the Ministry of Agriculture and Rural Development (MARD), a government ministry responsible for performing state management functions in the fields of agriculture, forestry, salt production, fishery, irrigation/water services and rural development nationwide. The Ministry maintains 64 provincial department offices throughout Vietnam.



¹ Women's Union website: <http://hoilhpn.org.vn/newsdetail.asp?CatId=66&NewsId=819&lang=EN>
² DARD's website: <http://www.agroviet.gov.vn/en/Pages/history.aspx?TabId=AboutMARD>

International Development Enterprises (IDE)

IDE is a non-profit, non-governmental development organization dedicated to helping the poor invest their way out of poverty. It was launched in 1981 and is registered in the U.S., Canada, the U.K., and Switzerland. IDE has offices in Vietnam, Cambodia, China, Nepal, Bangladesh, India, and Zambia, and operational headquarters in the U.S. city of Denver. Its projects are market driven, stimulating change by creating a demand for ideas and technologies, including irrigation, drinking water supplies, improved health practices, and post-harvest processing that have positive developmental impacts. Since 1991, IDE³ has worked in 15 provinces throughout Vietnam.



Hanoi University of Agriculture (HUA)

Hanoi University of Agriculture is the biggest and oldest agricultural university in Vietnam. Its priority area is the Red River delta, the northern midland regions, and the transition zone between the mountainous regions and the delta region. Research also increasingly focuses on the northern mountainous region. The university works under the umbrella of the Ministry of Education and Training and its main responsibility is teaching, though research is increasingly important.



Financing institutions

The Spanish Agency of International Development Cooperation (AECID)

Created in 1988, AECID currently has 1,300 professional staff working in the field of poverty reduction in some of the most disadvantaged countries in the world. The agency develops cooperation programs and projects and provides essential services like technical assistance to partner countries as well as financial aid, microcredit lines, internships and apprenticeships. In addition, the agency provides training for development professionals by financing several events and publications, including this report.



The Ebro Foundation

The Ebro Foundation is a Spanish non-lucrative organization linked to the Corporate Social Responsibility policies of Ebro Food Inc., a leading company in the country's food industry. Their support has made the intervention of CODESPA in Vietnam possible, specifically in the development of a value chain for Fertilizer Deep Placement in order to achieve the eradication of poverty in Yen Bai Province.



³ IDE's website: <http://ide-vietnam.org/default.asp>

Presentation letters

CODESPA FOUNDATION

It is not a new and revolutionary composed fertilizer, nor is it the Philosopher's Stone; it is just an idea; something new, different, spherical, trendy and promoted by energetic and kind women.

The FDP Project is an agricultural efficiency project working to improve the rice harvesting process through reduction in the number of seedlings required, better planting practices that reduce root crowding and the plants' fight for sunlight, prevention of the washing-away of essential soil nutrients by rain flooding and creation of unfavourable environments for plagues.

The results are a stronger rice plant, greater grain yields, higher incomes for farmers, retailers, local small and micro enterprises, and increasing opportunities for rural households to ensure that their primary economic activity is a sustainable and profitable way of living.

CODESPA Foundation has a clear approach based on an extensive background with previous experiences analyses, which show that "hand-outs" and enterprise training alone do not produce optimal results; this is an accepted truth in the international development community, as these stand-alone programs have consistently failed in sanitation infrastructure and other initiatives. This type of approach is even less likely to be successful with technology-based initiatives. Local communities are demanding active participation and decisive autonomy with respect to the specifics of their involvement in the project. The aid concept has evolved from charity to something more like a symbiotic partnership between donors and beneficiaries, which views all participants as highly capable equals. The beneficiaries should be able to question the project staff about the concrete benefits of FDP and the organization's involvement.



Ricardo Fernández, CODESPA Vietnam Representative working in the rice fields.

In some cases marketing, sales and commerce have become controversial words due to some irresponsible practices and weak regulations, but commerce should be understood as simply the sharing of goods and services, and the generation of economic flows and opportunities for poverty reduction. In this project, the Vietnamese rural households were viewed as the Board of Directors, whose input was highly valued in the design of plans to promote and strengthen local markets, thus maximizing economic, socio-cultural and environmental benefits.

Working on FDP local market development, CODESPA Foundation begins with the initial project design, always keeping in mind an effective phased withdrawal, by first defining which good or service responds to a real need and could improve the farmer's way of living, and by evaluating its accessibility for people with the lowest resources and its potential for scaling-up. Then CODESPA Foundation begins the local market base study by simply researching interest in producing the product and interest in buying the product, and by exploring potential for connecting supply and demand.

From there the process flows locally and naturally; CODESPA Foundation only has to control the developing market parameters, conduct monitoring and evaluation at every step and evaluate every fluctuation to find the balance between actors and to avoid abusive situations.

This publication aims to document, package and present how the market-based approach and value-chain income generation can be a feasible and fair way to support local development. Specifically, the publication will provide a report of how Foundation CODESPA together with its local partners, Women Union, The Department of Agriculture and Rural Development and IDE, has applied the connection of demand and supply under equitable, sustainable and technical criteria in Yen Bai Province by combining public strengths and private efforts to extend the benefits to the greatest amount of local market players as possible.

FDP is a valuable tool for Northern Vietnam and other areas specialized in paddy rice production to combat effects of droughts and typhoons, to increase production, to encourage self development and to promote sustainable management of rice plants and soil quality.

The visionary, critical thinkers behind this project have been essential to its development along each step of the process. Specifically, CODESPA would like to thank Javier Costa and IDE for their previous work in Vietnam and their dedication to ensuring that FDP was adequately adapted to the local population and successful in achieving the greatest impact possible. The project could not have been possible without their valuable involvement.



Ricardo Fernández Algora
CODESPA Vietnam Representative

WOMEN'S UNION

The FDP project is innovative in its market-based approach and in its consortium collaboration model with the participation of agencies coming from different backgrounds and functions. On our way to the four targeted goals, we have experienced a variety of difficulties, from households' inadequate plantation techniques and low-income communities' chronic thinking about assistance-based cooperation projects to the lack of experience of the implementing institution facing a market-based project, in this case, the Placement Center of the Women Union in Yen Bai's Province. So what should we do to keep good pace of the project's progress and how we should do it?

With regard to the new methodology, we are well aware that professional responsibility will never be sufficient; personal enthusiasm and a spirit of co-responsibility should be a must. I still remember those days when project staff revised each square meter of each village and knocked at each household's door in order to make people know and understand about FDP. We spent most of our time with our rice cultivators: eating together, living together and working together. Starting from a pilot project with intervention in 3 communities of one district, presently FDP pellets have reached 9/9 towns and 37000 households have shifted from antiquated cultivation techniques to a new nationally certified technology; an FDP market has been established and is flowing natural and sustainably, making a significant contribution to the 4% reduction of poor households all over the province of Yen Bai.



Kim Thu, Director of the Center for Training and Job Placement; Coordinator of the Chu Quốc Tuấn project (left of Thu); Vice President of the People's Committee of the Nghĩa Lộ, Yen Bai district; and Hà Thị Xuân Lan, President of the Nghĩa Lộ district Women's Union, visit the FDP fields in a field meeting in Pủ Trạng, Nghĩa Lộ, in 2009.

Not only has the project resolved food security problems, but YBWU's capacity has also been reinforced from the province level to our centipede-footed network in every hamlet. Our activity agenda has become more animated with FDP competitions, capacity-building courses on promotional techniques, presentations of successful demonstrative plots and a great number of other activities.

The success that we see today in the project has been the result of efficient co-responsibilities of all project partners, from the invaluable support of local authorities and rice households to, of course, the timely financial and psychological supports of CODESPA Foundation. Familiar names like Javier, Ricardo, Huong, Hang who have been always in our company will be present in every sao, every bung of rice farms in our Yen Bai province.



Ms. Kim Thu Tran

Director of Yen Bai Women's Union Placement Center
and FDP Project Coordinator

The FDP value chain in 8 frames



Combining traditional knowledge from Japan and applied research in Vietnam, fertilizer capsules were developed that strengthen rice plants when inserted into the ground, thus avoiding being carried away as runoff from the rains and reducing the required amount of nitrates to be applied, as well as minimizing the rice farmers' labor input; these capsules are called FDP (Fertilizer Deep Placement).



Erosion, the intensification of irrigated rice system, an excess of superphosphates... these are some factors that have gradually eroded the fertile soil of Northern Vietnam, so that rice cultivation is less profitable every day. For this reason, an innovation of this type should be disseminated, so that all rural homes know about its advantages. But how to accomplish this? How to stimulate demand in hundreds of communities? And in thousands of villages? The Public Promotion Network of the Women's Union has the solution.



But it isn't enough to explain the virtues of FDP; the demand should be stimulated by the supply hand, and that way provision and logistics can be designed, risks analyzed and every variation foreseen to ensure the creation of markets at the local level that can flow naturally. First, metal workers included compacting machines in their product range, starting the value chain...



These producers created commercial links with medium, small and micro enterprises, usually those they were already familiar with, that acquired the compacting machines and the different FDP components to carry out controlled production, generating stable incomes while encouraging best practices for cultivation in their home regions.

There were already rural households that wanted to try FDP, and there were kilos and kilos of prepared FDP for application on terraces, but there was a lack of coordination between the remote mountain villages and the compacting workshops; here was the basic role of the promoters, the private intermediaries and the distributors that recorded orders and allowed the producers to reduce their uncertainty, generating additional income for many families through logistical services, while increasing autonomy in FDP trade.



The families receive FDP in their villages – sometimes on credit, sometimes in cash, sometimes through previous orders and other times stimulated by the distributors' promotion. The rural families are sceptical of innovation because with small-scale agriculture there is no margin of error; a typhoon, a drought, a plague can destroy food reserves and savings, so FDP needs pioneering homes that can serve as a demonstrated example for the rest.



With the support of agricultural extension agents and cultivation technicians, the farmers perfected their FDP infiltration methods, ensuring that all the seedlings receive sufficient nutrients, that they do not apply more pellets than needed, that the roots do not get in the way and that the leaves do not block the sun; this way the data for monitoring and evaluation of the sustainability of the market can also be collected.

When the first rice harvest arrives with the application of FDP, the reaction is unanimous: "much more grain, more colorful, with less days of work and much less water pollution...without a doubt, the next harvest we will use FDP again."



There are already more than 40,000 families that have applied FDP in Northern Vietnam, and tens of thousands of others in the central and southern regions of the country, who ensure sufficient rice for the whole year, generating income in all the links of the chain in a sustainable and lasting way, since all the participants (machine producers, FDP compactors, distributors, rural homes...) are interested in maintaining the flow of the market without the need for external support from Codespa.



Executive summary

The CODESPA Foundation, a private Spanish NGO, has been supporting development initiatives in Vietnam since 2000. Under the auspices of AECID, CODESPA is now promoting project activities that address poverty alleviation in the rural communities of Northern Vietnam, by facilitating the creation of small business enterprises and market-based solutions to address rural poverty through income generating activities. CODESPA is strengthening the human and institutional capacity among local partners to design and implement a pro-poor, market-oriented development model. In addressing rural poverty, CODESPA has particularly taken into account gender relations and the central role of women as primary participants in the rural economic activity of Vietnam. CODESPA is also supporting project activities that promote stewardship and the enhanced sustainability of the environment.

In 2006 CODESPA sought out new approaches to achieve sustained economic development in rural communities. Drawing on the market-based approach that the organization International Development Enterprises (IDE) had already used to successfully introduce the Fertilizer Deep Placement (FDP) technology into other parts of the country, CODESPA designed a project model bringing together a consortium of private and public entities with the goal of improving the income of farm households through the increased use of the concentrated fertilizer (FDP) by farmers in Yen Bai Province.

While developing farmer demand for FDP supplies, the project also developed a commercial supply chain by encouraging businesses already involved in fertilizer sales to produce FDP pellets. As the FDP has previously shown good results on crops, the project sought to improve the use of it and increase the number of fertilizer pellet suppliers, (including producers, distributors, and retailers), as a means to ensure that the use of FDP technology was sustained and spread to new areas. Another component of the FDP project was the development of a replicable model that could be transferred to other regions, and the development of the capacity of local partners to design and implement a plan for expansion.

Project impact

The project has recorded significant achievements. By January 2011, the project had reached nearly 40,000 farm households (25% of these being poor households⁴), exceeding by ten the original target of 3,850, and a total of 133 small enterprises in Yen Bai had been created or strengthened, and were already participating in the supply chain. FDP has had a significant impact on rural poverty and food security, boosting farm income by USD 60-90 (1,1M - 1,6M VND⁵) in Yen Bai per year. In terms of wealth creation and return on investment, the project has demonstrated very favorable gains in net income for farmers and service providers in the value chain, with a benefit-cost ratio of 7.77 and leveraging of 3.45. FDP contributed considerably to improving crop yields; farmers using FDP achieved the significant increase in their rice yield of 22.5%.

Also FDP technology has had a positive effect on women, enabling them to increase farm income while also economizing labor time that can then be used productively for other income earning activities. Furthermore, FDP utilization has improved soil and water quality owing to the significant reduction in the use of fertilizers, pesticides, and herbicides, and the reduced levels of the runoff of urea and other chemicals into the water supply.

With regards to market sustainability there are grounds for optimism. Considering demand for FDP continues to grow in both previous and current project areas, there is evidence of a commercially viable FDP supply chain taking root. This is especially so given the fact that the responsibility for the technical and project management has been successfully assumed by the local partner institutions.

⁴ Poor households are those defined according to Government of Vietnam's criteria. According to Decision 170/2005/QĐ-TT in 2005, a household in rural areas is considered poor if the monthly income per head is 200,000 VND (US\$11) or below.

⁵ Exchange rate: USD1 = VND 18,500 (the average value during 2007-2010). Source: vietcombank exchange rate applied to financial reports CODESPA, WU (2007-2010) and transferring statements.

Best practices drawn from the project lie in the following areas: (I) a market approach; (II) a consortium model; (III) rural marketing; (IV) public private partnership; (V) supply chain development; (VI) business development services (BDS); (VII) sustainability; and (VIII) a strategy for scaling up.

Key lessons learned and recommendations include:

Phased market withdrawal and public/private functions

The creation of demand through marketing campaigns may need to remain a public supported function and be transferred in a gradual fashion to private sector actors in the value chain. The role of the local government is critical in this aspect, especially given that the WU is not a functional government agency in charge of the promotion of agriculture. Therefore, responsibility for the management of the project needs to be transferred from the project partners (i.e. IDE and the WU) to local and specialized government agencies (i.e. the DARD and the People's Committee).

Solid communication strategy to integrate the promotion of FDP into local public policies

Market functions, particularly in weak markets, are well known to take a minimum of three to six years to develop before all external support from donors can be withdrawn. Experience from the FDP project to date suggests that despite encouraging signs of progress, the FDP market in Yen Bai is not yet fully self-sustaining and some market functions, such as advertising and market promotion, may require continued support. Thus, the local government may need to integrate FDP into their agricultural development strategies and allocate part of their budget to FDP.

More action is needed to persuade the government to adopt policies such as: (I) to encourage the development of the FDP market in Yen Bai with the integration of FDP into government programs and the programs of international organizations in the area; (II) to encourage enterprises to participate in the production and distribution of pellets by creating good conditions for enterprises to start up and develop their business, for example, by providing preferential credit for these enterprises or a tax reduction/exemption for the first crops harvested; (III) for farmers, solutions should be found to help them buy pellets on credit. This could involve supporting the enterprises that sell pellets, so that they can then do so on credit, or providing access to loans for farmers to purchase pellets.

Role of the WU as market facilitator and service provider

The WU has a comparative advantage in relation to private sector entities, particularly in the more remote rural areas. This is due to their extensive ongoing presence and their cultivation of longstanding relationships with farmers throughout the country. As a result, the WU has taken on a dual role in the project, being both the market facilitator and service provider. As the project comes to an end, the distribution and retail functions should gradually be transferred to private sector agents, as part of a clear exit plan for the withdrawal of the WU distributors from the FDP market.

CODESPA remains open on the question of if and when the WU should relinquish its role as the market service provider in distribution and retailing. This is because of the benefits that the strong position of the WU currently provides to other actors in the value chain. However, CODESPA takes the view that the WU may only continue as one of the many FDP providers as long as private sector actors are provided equal opportunities to compete. These actors, such as private retailers, other mass organizations (i.e. the farmers' union, the youth union), cooperatives, and village leaders, must be given the opportunity to be a market service provider in both the fields of distribution and retailing.

The report is presented in four parts, including: an Overview (part 1), Project Impact (part 2), Best Practices (part 3) and finally the Conclusions and Recommendations (part 4).

Introduction

Since 2006 CODESPA has been supporting the development of the market value chain for a fertilizer application technique called Fertilizer Deep Placement (FDP), through the project *“Helping poor families in Yen Bai Province to sustainably improve their rice production by integrating them into markets for fertilizer pellets with the fertilizer deep placement method.”* The project has been conducted continually in 3 phases, piloted in one district in Phase 1 (October 2006 - June 2008), then expanded to seven districts in Phase 2 (July 2008 - June 2010), and finally introduced in the two remaining poorest districts (July 2010 - June 2012). By October 2010, the project covered the whole province of Yen Bai.

FDP is a fertilizing technology popularized in Bangladesh by the International Fertilizer Development Center (IFDC) from the late 1990s onwards. The technology was introduced to Vietnam in 2000 and then refined and adapted to local conditions by the Hanoi University of Agriculture (HUA) and International Development Enterprises (IDE), a US non-profit NGO⁶. It was designed to boost rice crop yields, reduce labor inputs in rice farming, and decrease the amount of fertilizer used in rice production. The deep placement of fertilizer brings about the effectiveness of the new fertilization method.

The technology is extremely simple, consisting of ordinary chemical fertilizer that is physically modified into discrete particles of fertilizer commonly called fertilizer pellets. Under FDP, farmers insert by hand compressed chemical fertilizer pellets into the moist clay soils during the transplanting of rice. The advantages of this technique are that fertilizers are delivered directly to the roots of rice plants, while simultaneously reducing fertilizer run-off. The benefits are increased nutrients for the crop, increased production and income, an inexpensive input, and lower environmental impacts than when using traditional fertilizers. At the end of 2005, the refined and adapted FDP was certified by the Ministry of Agriculture and Rural Development (MARD) as a technical innovation and FDP was officially approved for the scaling up of its dissemination in Vietnam.

As it is shown later in Figure 4. *Map of the FDP value chain*, CODESPA's strategy to address rural poverty was built on the development of market-based private networks to provide products and services that can benefit rural populations. The model integrates rice farmers into the FDP market, which has positive developmental impacts, offering an alternative to traditional subsidized livelihood improvement models. FDP is produced, marketed, distributed, and sold through a network of small-scale rural enterprises (mainly small or micro local enterprises), that maintain local supply of FDP on an unsubsidized, for-profit basis.

⁶ Report by Dr. Vo Tong Xuan, “FDP- a routine practice of transplanted rice farmers in Northern Vietnam”, 2009. IDE Proposal for FDP Project in Yen Bai, 2006.

CODESPA designed a project model bringing together a consortium of private and public entities with the goal of improving the income of farm households through the increased farmer use of FDP technology. Yen Bai Women's Union has been the project owner, Yen Bai Women's Union Placement Center (PC)⁷ has been the implementing partner, International Development Enterprises (IDE) has provided consulting on market development and local capacity building, HUA has provided technical consulting on FDP technology and adaptation, DARD has developed FDP quality control policy and procedures, the Agricultural Extension Station (AES) has provided technical training on FDP application, and CODESPA has played an important role in project design, supervision and it has coordinated all these actors.

To ensure ongoing access to training and technical assistance for small farmers, the project built the capacity of local organizations and government extension services with an emphasis on improving production techniques. FDP quality control policies and procedures were introduced to ensure reliable and consistent quality and to build the trust farmers have in the product.

By catalyzing both supply and demand for products and services appropriate for smallholders, the project makes a market for FDP work for the rural poor in Yen Bai, enabling farmers and small holders to develop their businesses and continually invest their way out of poverty.

This scheme provides a practical solution to the market's failure to provide access to information to rural populations. At the same time it is a sustainable way to bring technological and financial services to these populations. This FDP project in Vietnam is one example of a number of CODESPA's projects that adopt a market-based, value chain development approach to address rural poverty.



Rice field in the Tô Mậu commune, Lục Yên district in 2008.

⁷ Yen Bai WU Women's Union Placement Center (PC) belongs to Yen Bai Women's Union and was assigned to directly implement this FDP project.

Context

Vietnam, a country with 85 million people, is a predominantly agricultural-based economy. In 1986, it started its economic reform which transformed the country from a centrally-planned economy to a socialist-oriented market economy. The economic reform has brought about significant achievements and the average annual GDP growth has reached approximately 8% over the past decade. However, Vietnam is still a very poor country with around 10% of the population still below the poverty line⁸ and economic gains have yet to be equally distributed among the urban and rural areas. There are 62 districts that contain over 50% of the country's poorest households according to government criteria (90% of these are from ethnic minority groups⁹).

The government of Vietnam laid out its Comprehensive Poverty Reduction and Growth Strategy (CPRGS) in 2003. One of the goals of this strategy is to provide poor households with opportunities to augment their income by accelerating broad-based growth in agriculture. Specific goals for agricultural development include ensuring food security and increasing investments in agriculture. Of special interest to the government is economic development that stabilizes and raises the living standards of ethnic minority groups that are particularly vulnerable to poverty. The FDP promotion project closely aligns itself with this strategy and plays a role in the process of moving towards the stated goals. It does this by increasing incomes through innovation in agriculture in remote rural areas where a significant percentage of the population belongs to ethnic minority groups.

Rice production is an essential component of the food supply in Vietnam and is an integral part of life in the country. Along with Thailand and the U.S., Vietnam is one of the top three rice exporters and the world's seventh-largest consumer of rice. The Vietnamese economy largely depends on agriculture with 80% of the population working in this sector and the main crop is rice. Land set aside for the cultivation of rice makes up around 75% of the country's total cultivated land, and wet rice cultivation in Vietnam allows for two or three crops a year.

Over the past years, the rice yield and output in Vietnam have been enhanced significantly thanks to high yield seedlings and improved cultivation techniques. However, according to Nguyen Tat Canh, from the Hanoi University of Agriculture, the assessment of the Ministry of Agriculture and Rural Development is that the economic efficiency of rice production is still low due to costly input expenses (85% of fertilizers used in agriculture must be imported from abroad). In order to improve the economic efficiency of rice production, yield and output, and to contribute to environmental protection, the research and application of innovative fertilizer types and fertilizing methods were necessary. FDP was the product of this research.

Women play a prominent role in rural farm life in northern Vietnam. The majority of the work in rice farming is done by them, while men assist with the heaviest field tasks, such as the preparation of soils and plowing.

Yen Bai, shown in figures 1 and 2, is one of the poorest mountainous provinces in the north of Vietnam. It is comprised of Yen Bai city, Nghia Lo town, and seven districts, Luc Yen, Van Yen, Mu Cang Chai (MCC), Tran Yen, Yen Binh, Van Chan and Tram Tau (TT). The proportion of poor households and ethnic minorities accounts for 35% and 51% of the total population respectively. The province is heavily dependent on agriculture and the rural poor make a living from rice cultivation, the raising of animals, and the cultivation of other crops. As illustrated in Table 1- Dissaggregated data of districts in Yen Bai Province, rural population represents around 90% of total population (except in Yen Bai city and Nghia Lo town).

⁸ Ministry of Labor, War Invalids and Social Affairs (MOLISA)

⁹ MOLISA: http://www.jicwels.or.jp/about_jicwels/ASEAN&JapanHighLevelOfficialsMeeting/7th_2009_pdf/Vietnam_Country_Report.pdf

FIGURE 1. MAP OF VIETNAM

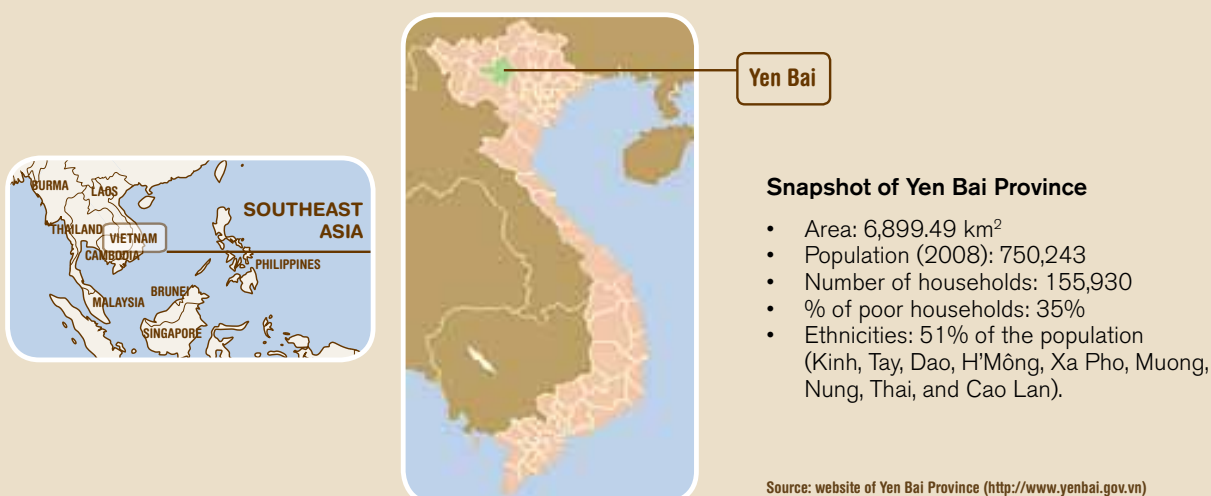
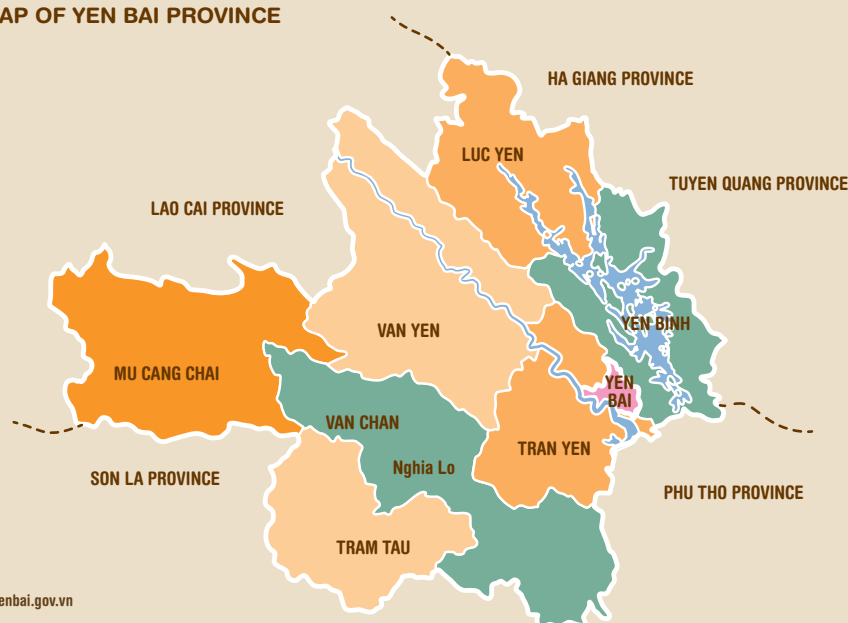


FIGURE 2. MAP OF YEN BAI PROVINCE

TABLE 1. DISAGGREGATED DATA OF DISTRICTS IN YEN BAI PROVINCE¹⁰

	YEN BAI CITY	NGHIA LO TOWN	LUC YEN DISTRICT	VAN YEN DISTRICT	MCC DISTRICT	TRAN YEN DISTRICT	TT DISTRICT	VAN CHAN DISTRICT	YEN BINH DISTRICT
Area (km ²)	108	29	813	1,391	1,201	628	746	1,210	773
Population (2008)	94,915	27,303	104,770	117,121	47,590	81,177	24,764	146,378	106,225
No. of communes ¹⁰ , wards	17	1	24	27	14	22	12	31	26
Rural population (%)	30	30	92	91	95	93	91	89	86

Note: USD1= VND 18,500 (the average value during 2007-2010).

Source: Project progress report and calculations from project database as of October 2010.

¹⁰ Commune is the third-level of administrative subdivision in Vietnam. Each commune may consist of a number of towns and villages but often urban districts are divided into residential neighborhoods or wards which differ from rural communes.

In Yen Bai, people engaged in agriculture mostly cultivate rice. However, the rice sub-sector faces the challenges of low output, low yield and environmental degradation due to the lack of high quality and affordable inputs, and the use of inadequate farming techniques. These include the dense transplanting of rice seedlings and the inappropriate application of fertilizers and pesticides. As it is explained later, there also exists an increasing risk of water pollution due to the effects of the chemical fertilizers used in the rice fields.

While rice cultivation is the greatest source of income for households in Yen Bai, local farmers cannot keep and consume all the rice they produce. Outstanding loans and other short-term needs make them sell part of the rice production for cash. Rice, in this case, being non-perishable and having higher liquidity, is considered a safer cash crop than other crops. This leaves them with the problem of a shortage of rice for consumption. Each year, as farmers have to sell part of their harvest, they have to spend an average of USD 65 (VND 1.300.000) to purchase supplemental rice to cover the shortage. Therefore, an increase in rice yield and a reduction in production costs could help farmers secure a year-round supply of rice for consumption and potentially help them to invest in income-increasing activities.

On this basis, FDP was introduced in Yen Bai for the purpose of providing significant rice yield increases and cost savings for farmers, thereby improving their income and the overall economic situation of farming households in the province.

Benefits of FDP application have been proven: nationwide rice yields have increased 16-30% (equivalent to 1 tonne per hectare) compared with conventional fertilizer use and cost savings averaged 7-10%, which result in an income increase for rice farmers of \$300/hectare/crop. A network of suppliers is established in the country, including 5 machine manufacturers, 60 pellets producers, 200 retailers, and 1,500 sales agents, with total sales of 1,500 FDP tons/year for around 6,000 hectares of irrigated rice¹¹



Because rice is non-perishable, it is an important cash crop for Vietnamese farmers and a source of livelihood security. FDP creates an increase in rice yields, thus improving farmers' income stability.

¹¹ Source: IDE. November 2010

PART 1

Project overview





PART 1. PROJECT OVERVIEW

1. OUR APPROACH

In many projects, efforts by development organizations and the Vietnamese Government to improve the livelihood of upland farmers have yet to yield positive or sustainable results. The key limitations of these development efforts have been:

- Not enough attention is given to the key role of small-scale private sector players in the provision of affordable services and products to farmers. In other words, there is a lack of emphasis on the development of the supply side of the market;
- A heavy subsidy on inputs and the provision of technical advice increases the farmers' reliance on external aid; and
- Interventions have mainly addressed production and technical constraints while neglecting market demand requirements.

CODESPA, in cooperation with IDE, has adopted an innovative methodology to address the rural poverty confronted by farmers and small markets. The project stimulates changes by creating a demand for new technologies that have positive development impacts, and offering an alternative to traditional subsidized livelihood improvement models.

The project is based on the understanding that rural farm families can and will invest in their farms and new technologies, and progressively work their way out of poverty when they have access to high quality, affordable agricultural inputs and training in production techniques. The project enables small families to invest in fertilizer pellets to gain higher rice yields. The challenge lies in making these inputs and services available to poor farmers in a sustainable manner. This challenge can be met by adopting a market-based approach.

The approach is based on a public-private partnership, in which public sector institutions of the Vietnamese Government create awareness and stimulate demand for FDP through mass marketing and public advertising campaigns. In conjunction with this, FDP is produced, distributed, and sold through a network of small-scale private commercial enterprises. The project's aim was to generate profits for all actors in the value chain (not only in farmers) and involved local actors both in the demand and the supply chain.

The project seeks to develop a replicable model for integrating rice farming households into a market for FDP, which they will invest in and benefit from in a sustainable way, during the implementation of the project and after its completion. The project will build the capacity of local partners to replicate and expand the model to other geographical areas after the completion of the project. This contributes to ensuring ownership by local partners and sustainability of the strategy when the project ends and local actors should take over. In this sense, there are two aspects to be taken into account: capacity building for local partners and bottom up and participatory planning. The project has been planned from the bottom up with participation from all stakeholders, as they were involved in all the project planning activities and most of the implementation activities.

The Vietnamese government had an important role in carrying out one of the crucial factors of this approach: rural marketing. The project adopted principles of commercial marketing in a rural context where WU, due to its strengths and capacity to reach every corner of the province, conducted these innovative rural marketing techniques and adapted them to local culture and customs in northern Vietnam. FDP was considered a commercial product promoted by CODESPA; producers as business partners and; farmers as consumers. With this approach, farmers would benefit as well as all other actors in the market, and as a result, sustainability was ensured.

The project adopted a decentralized production model comprised of several small producers (instead of a big factory model) given their advantages of easier access for farmers and higher competitiveness between producers. The production business development strategy that was applied by the project is to encourage small production units to produce pellets for a relatively small geographic area, rather than having a large producer covering the entire project area. This approach limits transportation costs, helps producers manage the seasonality of demand for FDP pellets and reduces the risk of monopolies being established.

**There were four main factors
leading to success:**

- Technological innovation
- Rural marketing
- Supply chain development and
- Financial value chain

Furthermore, the project does capacity-building at two levels: civil society and local partners. The project seeks to strengthen local capacity by developing skills of poor people and establishing an association of producers to manage the collective purchase of inputs and get preferential terms with input suppliers. At the same time, it provides technical assistance, business planning, and local capacity-building to train farmers. Training of Trainers (TOT) sessions were conducted for leaders of local organizations, extension agents and key farmers in the target areas, as well as training for communicating the local knowledge of the pellets production process and FDP application techniques.

Also, with the aim of making these services available after the completion of the project, capacity-building was conducted with local partners. This capacity-building was carried out to ensure sustainability, as CODESPA knew that for the supply chain network to develop, it had to function itself as an integral part of the market without material support, including subsidies, from the project. Additionally, capacity-building is an important aspect in order to replicate and expand the model to other geographical areas.

Financial access is integrated right into the value chain. Rather than linking farmers with external credit and micro-finance institutions, the project facilitated access to credit for farmers through:

- prestige of WU to guarantee for farmers to purchase FDP from producers,
- establishing linkages for producers and retailers with banks so that they could, in turn, have resources to provide credit for farmers, and
- establishing a leasing fund to help producers purchase briquette machines on an installment scheme to reduce their financial burden.

Other issues taken into account in this project were gender mainstreaming and environment impact. As explained in detail later on, the project worked mainly with women. It was critical to analyze whether women were being empowered and in what way, and whether gender relations are moving towards a greater equality in terms of labor division and decision-making. The project has been trying to empower more women through the application of FDP. The project also considered reduction of soil and water pollution to be another goal, since the FDP pellets have the potential to greatly reduce the amount of fertilizer applied to the soil and the amount of runoff into local streams.

2. OBJECTIVES

The project's three main specific objectives were to:

- **Improve rice production.** 30,000 rice farming households were expected to adopt FDP by the end of the project (initial target for phase 1 is 3,850 households). These families would gain an increase in rice yield of 16% to 30% through applying FDP and the new rice cultivation techniques introduced by the project, thus generating an additional income of around USD 30 (VND 550.000) per household per year.
- **Create a network of SMEs to produce and distribute FDP.** The project created a network of Small and Medium Enterprises (SMEs) to produce and distribute FDP to a level where local production will be a viable enterprise. These included briquetting machine manufacturers, input material producers, pellet producers, retailers and distributors.
- **Develop a replicable model to be transferred to a local partner for expansion.** This market-based approach of integrating poor families into the market system and of improving rice production with FDP will be developed into a sustainable model that would function through local partners after the project ends, and would also be replicated in other areas of the country.

The ultimate goal of the project was to have influence at the policy level, proving that a market-based approach can be transferred to the government structure.

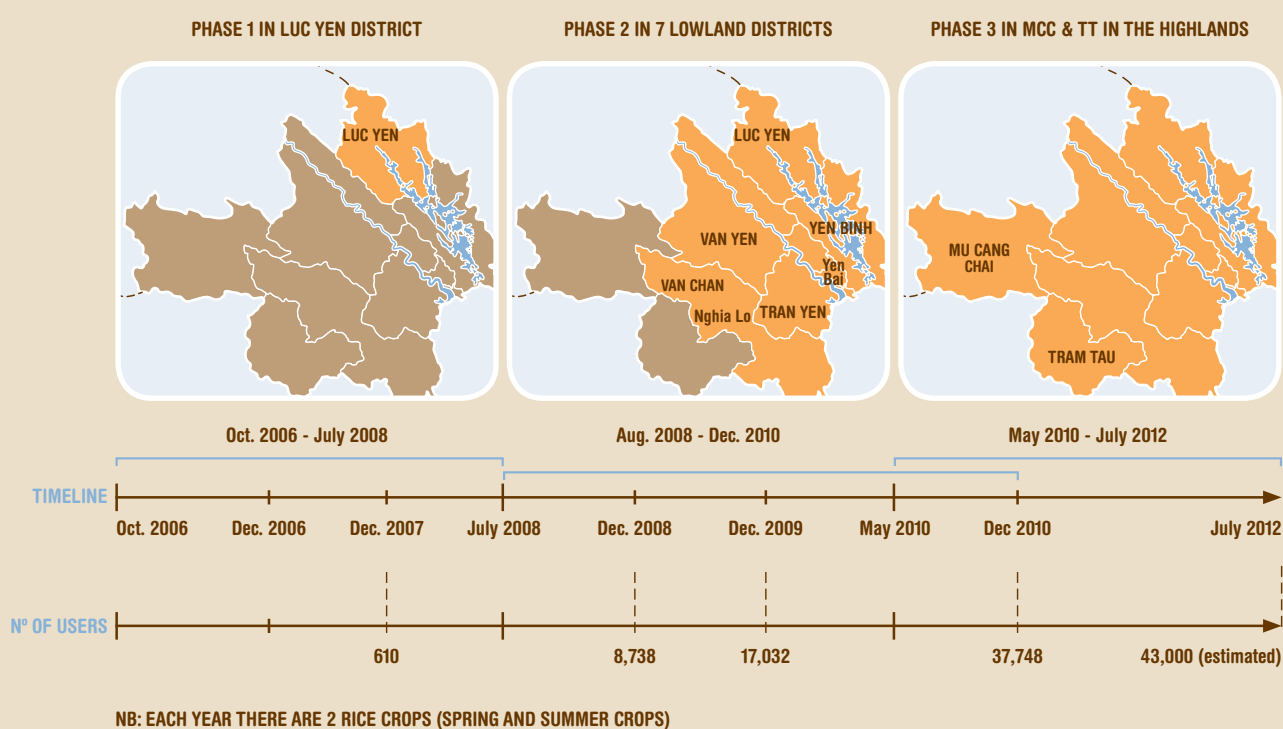


The creation of an SME network involved various actors along the value chain, stimulating beneficial economic activity on many levels.

3. TIMELINE

As shown in the timeline chart below, CODESPA began the FDP project in the pilot district of Luc Yen district in Yen Bai Province in October 2006. The first phase lasted for 21 months, including 3 months for project inception followed by three rice crop cycles of six months each. Luc Yen is a purely agricultural district with 47% of its households classified as being poor. 90% of the district population is dependent on agricultural production. Essentially their livelihood is based on rice cultivation (40%), animal husbandry (40%) and the cultivation of other crops (20%). Like other districts in Yen Bai, farmers in Luc Yen can produce almost enough rice for their own consumption but have to sell part of the harvest to pay for loans and other needs. Farmers mentioned that if they had higher rice yields to secure a year-round supply for consumption, they would invest resources into other more profitable agricultural activities. Therefore, FDP, with its benefits of increasing rice yields, reducing fertilizer use and improving environmental protection, met the needs of the farmers in Luc Yen.¹²

FIGURE 3. TIMELINE OF GEOGRAPHICAL EXPANSION



Source: CODESPA

The 1st phase was a great success and exceeded all expectations. By the end of the first phase, 8,738 households had switched to investing in FDP pellets for rice cultivation, doubling the initial target of 3,850 households. Farmers adopting FDP have been able to make an additional USD 60 in household income per year versus the initial target of USD 30 per year, thanks to increased rice yields and lower input costs. In addition, according to studies carried out by the DARD the use of FDP resulted in the water and soil being less polluted.

¹² IDE Proposal for FDP Project in Yen Bai, 2006.

In light of the success of phase one, the project team embarked on an ambitious plan to expand its activity into phase two, covering the seven lowland districts of the province (Luc Yen, Van Yen, Tran Yen, Yen Binh, Van Chan, Yen Bai city and Nghia Lo town) with the objective of achieving that 35,000 households adopt FDP. More success followed and in May 2010 CODESPA decided to extend the reach of the project for the 3rd phase to the last two highland mountainous districts of the province, Mu Cang Chai (MCC) and Tram Tau (TT), which are among the poorest districts of Vietnam. This was made possible by combining the project with other government-support programs for poor and ethnic districts, including 135 and 30 A programs¹³. During this period, the project team gradually withdrew its direct involvement in project activities and now maintains a lower level of control in the monitoring of activity.

It should be noted that before the completion of the project in Yen Bai, between December 2007 and August 2009, CODESPA implemented FDP in a district of the Thanh Hoa Province called Thuong Xuan, in the central region of Vietnam. In October 2010, CODESPA also started implementation of FDP in the northern region of the Tuyen Quang Province; this project will last for 3 years until December 2013.

Farming families in 27 provinces, mostly in the North and Central regions of Vietnam, have been using this FDP technology, and 30% of these farmers are poor¹⁴. The popularity of FDP is attributed to IDE, which, in 2000, started promoting FDP practices with transplanted rice farmers in Hue, Quang Nam, Quang Tri and Thanh Hoa in Central Vietnam. In 2005, when MARD officially approved FDP for its application on a national level, the organization then expanded to northern mountainous areas.



Member of the WU and project collaborator in the Mường Lải, Lục Yên commune, teaching the FDP technician (summer harvest 2008).

¹³ Program 135 II is a 5-year poverty reduction program during 2006-2010, which targets 1,644 poor and mountainous communities in 45 provinces that are home to the majority of Vietnam's ethnic minorities (see the link: <http://chuongtrinh135.vn/Default.aspx?alias=chuongtrinh135.vn/english>). Program 30A was initiated in 2008 with the issuance of Resolution 30A/2008/NQ-CP of the government, aiming at reducing poverty in 61 poorest districts in Vietnam.

¹⁴ Data was provided by IDE (November 2010). The 27 listed provinces are: Lai CHUA, Lao Cai, Yen Bai, Cao Bang, Son La, Bac Giang, Ha Nam, Ha Giang, Hoa Binh, Phu Tho, Vinh Phuc, Lang Son, Ha Tay, Hung Yen, Hai Duong, Hai Phong, Nam Dinh, Ninh Binh, Thai Binh, Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, and Ninh Thuan.

4. PROJECT PERFORMANCE

As shown in Table 2, after 4 years of implementation, a well-functioning market for FDP has been established in the entire province of Yen Bai. With a large number of households (40,000) adopting FDP, occupying around 30% of total market, and a chain of suppliers operating profitably, the market is well-positioned to sustain itself.

TABLE 2. FACTS AND FIGURES ABOUT THE YEN BAI FDP PROJECT

Demand:
<ul style="list-style-type: none"> Nearly 40,000 households adopted FDP in Yen Bai (25% of which are poor households). Annually, over 1,000 tons of FDP are used in 5,000 hectares of irrigated land for rice cultivation. Rice yield is up 20% vs. the yield produced when using the conventional method. Annual household income is up USD 40-60 per year vs. the target of USD 30 per year.
Supply:
<ul style="list-style-type: none"> 1 briquette machine producer. 22 pellet producers. 110 pellet retailers. Nearly 1,000 WU distributors.
Local capacity building:
<ul style="list-style-type: none"> 14 provincial government officials, 21 district government officials, 250 staff from the WU and AES, and over 1,000 promoters have improved their capacity and skills in presentation, communication, project planning, implementation, M&E, and in understanding and applying the market-based approach and value chain development principles.

Source: IDE & the WU

Highlights of the FDP project in Yen Bai

- Market coverage and depth.** The project has reached nearly 40,000 farm households to date, far exceeding the initial target of 3,850. Among those that adopted of the FDP method, 25% are poor households¹⁵. This corresponds roughly with the percentage of total poor households in the project areas.
- Poverty.** FDP has had a significant impact on rural poverty, boosting farm income by USD 40-60 in Yen Bai per year¹⁶. In this regard, the project has been effective in addressing structural poverty and food insecurity.
- Project wealth creation and return on investment.** The project has demonstrated very favorable gains in net income for farmers and service providers in the value chain. Positive rates of return have also been demonstrated, including a benefit-cost ratio of 7.77, i.e. USD 7.77 was created for each USD 1 invested by the project.
- Leveraging ratio.** Returns on investment, in terms of farmer benefits, were roughly 3.45 USD per dollar spent on project costs.
- Improved crop yields.** Farmers using FDP achieved a significant increase in their rice yield of 22.5% (48 kg/sao¹⁷).
- Gender.** FDP technology has had a positive effect on women, enabling them to increase farm income while also economizing on labor time that can then be productively deployed for other income-earning activities.
- Environment.** FDP utilization has improved soil and water quality due to the significant reduction in the use of fertilizers, pesticides, and herbicides, and the reduced runoff of urea and other chemicals into the water supply.
- Small enterprise development.** A total of 133 small enterprises in Yen Bai have been created or strengthened to date, by participating in the supply chain.

¹⁵ Poor households are those defined according to Government of Vietnam's criteria. According to Decision 170/2005/QĐ-TT in 2005, a household in rural areas is considered poor if the monthly income per head is 200,000 VND (US\$11) or below.

¹⁶ The average monthly income per head in Yen Bai was US\$60 in 2009 (source: www.baoyenbai.com.vn)

¹⁷ 1 sao = 360 square meters

- **Technical training and marketing capacity.** These have been successfully assumed by the local partner institutions.
- **Quality control and monitoring capacity.** The quality control monitoring functions have been effectively transferred to the local partner institutions.
- **Access to credit among value chain service providers and farmers.** Facilitating access to credit, among FDP commercial enterprises and rice producers.
- **Market sustainability.** The demand for FDP continues to grow in both previous and current project areas, and there are strong signs of a commercially viable FDP supply chain taking root.



Factors leading to project success

Innovation: instead of working with farmers on final products, the project looked behind the value chain to find a gap, in this case an input for rice farming -- the fertilizer -- and then applied new FDP technology in the field. While compressing fertilizer is not a new technology, it is new in Yen Bai and has brought about tremendous value for the rice farmers. This innovation in approach and technology application was instrumental in the success of the project.

Rural marketing: the project adopted principles of commercial marketing in a rural context with the goal of generating profits for all actors in the value chain. FDP was considered a commercial product promoted by CODESPA, whose business partners were the producers, and of course the farmers were the consumers. With this approach, farmers would benefit as well as all other actors in the market, and as a result, sustainability is ensured. In this project, innovative rural marketing techniques were applied with adaptation to local culture and customs in Northern Vietnam. WU has been selected to conduct these marketing activities considering their strengths and capacity to reach every corner of the province.

Business Model:

- **Supply chain development:** the project adopted a decentralized production model comprised of several small producers (instead of a big factory model) given their advantages of easier access for farmers and higher competitiveness between producers. The criteria for selecting the producers were designed by the project, including their business experience, location, prestige in the community, and financial resources. Furthermore, the project built the capacity for producers by providing them with training activities on business planning and establishing an association of producers to manage the collective purchase of inputs and get preferential terms with inputs suppliers.
- **Financial access:** it is integrated right into the value chain. Rather than linking farmers with external credit and micro-finance institutions, the project facilitated access to credit for farmers through (I) prestige of WU to guarantee for farmers to purchase FDP from producers, (II) establishing linkages for producers and retailers with banks so that they could, in turn, have resources to provide credit for farmers, and (III) establishing a leasing fund to help producers purchase briquette machines on an installment scheme to reduce their financial burden. That is to say, the project facilitated cooperation between banks, producers or retailers and farmers, so that the producers or retailers had sufficient credit from the banks to be able to in turn provide farmers with FDP pellets on credit, which they could pay off once they received income from their harvests. The project also provided the briquette machines on a for lease basis, which allowed producers to “rent to own” these machines gradually.

5. STRATEGIES AND ACTIVITIES

FDP is a new product and was introduced in Yen Bai, a poor mountainous area where the income of farmers is low and where enterprises are hesitant to engage in the production and distribution of a new product. Therefore, it was necessary for the project to invest sufficient resources in the initial stages to build both demand and supply, and then to link them together until the market could function by itself.

Various rural marketing methods were used to raise farmers' awareness and to foster their demand for and adoption of FDP products; for example, the far-reaching network of the WU was used at grassroots level. Micro and small enterprises were identified, selected and trained to be able to participate in the production and distribution of FDP, either as producers or retailers. The WU distributors and village leaders were also mobilized to facilitate the delivery of FDP to remote areas where private retailers didn't exist. Also, it was important to have an exit strategy for these distributors when the private sector reached the point when it could fully accommodate the distributing role. All of these players in the value chain have to act in a cooperative and competitive manner and adequate profit margins for each one must be maintained to keep them in the market.

As it was mentioned before, this project has been designed and carried out in alliance with other local and international actors, private and public. The specific expertise and capacity of the implementing organizations have been crucial to achieve the success of this project:

- **Yen Bai Women's Union (WU)** has been the implementing partner. The WU contributed placement centre staff who were willing to learn this new approach and who worked under the direct supervision of IDE's more experienced staff. The WU also used its network of members at district, commune and village level to reach, train and motivate farmers. The WU at all levels was involved in introducing the FDP methodology, organizing farmer contests, and other promotional activities.
- **International Development Enterprises (IDE)** has provided the experience of having been the first to introduce FDP technology in other provinces of Vietnam. The organization also contributed its experience in market development to provide services and products needed in poor communities and has facilitated local capacity building.
- **Hanoi University of Agriculture (HUA)** pioneered the adaptation of FDP to Vietnam and collaborated with IDE and CODESPA, leading FDP research and field testing, as well as the training of DARD and AES staff and farmers on demo plots. HUA has provided technical consulting on FDP technology and adaptation to the specific soils and conditions of the Yen Bai Province to ensure that the area was suitable for FDP application.
- **Yen Bai Department of Agriculture and Rural Development (DARD)** has developed FDP quality control policies and procedures, including sampling protocols and penalties for variations in production. The DARD also developed the project's Geographical Information System (GIS), mapping soils across Yen Bai Province and identifying areas suitable for FDP application¹⁸.
- **Yen Bai Agricultural Extension Stations (AES)** have provided technical training on FDP application to farmers
- **CODESPA** has designed, participated, monitored and supervised all the stages of the project and has coordinated all these actors. Also, as its ultimate objective was to have influence at the policy level, it designed the new organizational structure based on:
 - the model developed by IDE with a consortium structure at the provincial level (previous IDE's pilot projects on sanitation worked only at the district level)
 - the scheme to transfer the market-based approach to the government (this approach had not been transferred to a government body before).

¹⁸ See maps in Appendix 1. Land maps of FDP distribution in Yen Bai Province.

CODESPA has also carried out budgeting, planning, reporting, negotiating and implementing of the project at different levels and by increasing the level of ownership of each partner in the project (CODESPA signed contracts with each partner and transferred funds directly to them). Finally, it has provided technical assistance and financial support, by designing additional components and by integrating the new organizational structure into the original model. CODESPA was responsible for the leasing fund design for access to FDP machines, FDP quality control procedure design and policy promotion, transfer TOT programs from HUA to the DARD and from DARD to the AES, as well as FDP machine manufacturing capacity to Yen Bai and the standardization of FDP machines. CODESPA played the central role in coordinating with all the stakeholders (IDE, WU, DARD, HUA, AES) and acted as the facilitator in all project activities.

Technology Introduction and Adaptation

Research and development (R&D) is essential when introducing a new model in market development; especially a model that can affect a large farming population in a poor province.

The FDP product promoted in the project is the first generation¹⁹ FDP (composed from NPK or NK pellets)²⁰. The formula and the procedure of application were studied and developed by HUA.

Stage one was considered to be the period for adapting the FDP technology owing to the fact that the technology was new to the district area. Poor farmers are willing to invest in new technologies for their farms once they see the benefits of these technologies. The focus of stage one was trials of FDP on limited rice plots in order to minimize risk. The process of creating demand was also limited to demonstrating technical performance and to holding a number of meetings with target audiences.

The adoption of FDP was restricted to early adopters, mostly experienced rice farmers. The input supply network was initiated on a small scale to allow suppliers to get familiarized with the project and the new business.

Stage one was implemented during the first two crops until FDP application was complete. There were promising results in terms of technology advantages and economic benefits compared to the conventional fertilizing method. Once informed of the advantages of using FDP, farmers have shown a strong demand for the technology.

The project team played a direct role in designing and implementing the activities, while gradually building the capacity of local partners to take over some of these activities. During the first crops when the new technology was introduced and adapted, the project staff and the local partners at the district level jointly carried out these activities.

Technology Dissemination

Stage two started in the second year of project implementation (2008) when the project was expanded into new areas. During stage two, the technology was almost ready for widespread dissemination. The focus of stage two, therefore, was on a) diversifying and intensifying marketing activities to create demand and b) recruiting those people who would make up the input supply network.

¹⁹ The second and next generations of fertilizer pellets have been tested by HUA but have not been applied in the province of Yen Bai during the implementation of the project. However, second generation FDP was tested on a pilot basis and on a small scale in the Luc Yen district of Yen Bai Province and new generations of FDP have been successfully applied by HUA in other areas.

²⁰ Nitrogen (N), Phosphorus (P), and Potassium (K)

a) Demand creation through rural marketing

First, market research was conducted during the initial stages of the project to gather and evaluate information on the local demands and conditions. Meetings with various local stakeholders were held and a clear project plan was formulated, incorporating proposals from local partners while taking into account the needs and priorities of the local communities.

Rural marketing activities targeted farmers with irrigated rice production, with a focus on women through the network of the WU, from the provincial level to the grassroots level. The project conducts diversified and innovative marketing campaigns for FDP techniques and fertilizer pellets. When the technology of FDP was finalized, project areas were expanded; the project focused on technology dissemination, decreased its direct involvement in promotional activities and helped the local network itself carry out marketing activities.

Gender mainstreaming was an integral part of rural marketing activities. The project involved men in almost all activities and included both men and women as beneficiaries of all the project activities (i.e. training, rural marketing, demonstrations and study tours). Messages on gender equality such as the need to share the labor involved in rice cultivation equally between men and women, or the need to involve both men and women in making decisions on the application of FDP, are currently being promoted.

Rural marketing methods used in the project included:

- **On-farm demonstrations.** These were one of the most important activities as farmers always wanted to witness the impact of FDP with their own eyes.
- **Technical training on FDP application for farmers.** Technical training was provided to demo farmers and other FDP buyers to help them gain more knowledge on crop protection.
- **Farmers' promotional meetings.** These were conducted at the commune level towards the end of the demonstrations to show and talk about the results and impacts of FDP.
- **Field visits.** The visits were organized during the rice crop to show farmers the usefulness of FDP.
- **FDP technical application contests.** These were intended to provide technical training for the FDP users in a different and entertaining way.
- **Development, production and distribution of training and promotional materials²¹.** These included FDP leaflets, FDP posters, training calendars, training brochures and booklets, FDP banners, demonstration billboards, the FDP logo, the FDP video (developed by the local TV station), and the provision of uniforms for volunteers.
- **Project summary meetings at commune, district and provincial level.** Meetings were organized to present the results of the project and to strengthen the relationship between the project organizers and the local authorities. The meetings also aimed to introduce the project approach and FDP to government representatives to then enable the possible scaling up of the project.
- **The setting up of the local volunteer network.** This network was set up to provide first-hand technical assistance in placing the pellets and in carrying out crop protection. Volunteers also took part in the promotion of FDP, in the development of the pellet supply network and in the gathering of data on harvests to provide reliable statistics.
- **FDP logo design.** The logo was used in all promotional and training materials to increase the awareness and image of FDP among the farmers and local government.
- **Consumer understanding research.** This research was carried out to gather information on the perception, motivational factors, and local beliefs of rice farmers so as to develop an effective marketing campaign.

²¹ Poster and leaflet examples can be found in Appendix 2. FDP Promotion materials used for Rural Marketing activities

The local network adapted the concepts and materials already developed throughout the project. It is important to note that, from the second year on, the marketing campaign was intensified with a greater focus being put on mass marketing as it was identified as the best option given the need to scale up marketing activities and the budget constraints²².

b) Input supply chain development

In parallel with building awareness among farmers and fostering demand for the FDP product, one of the most essential activities was the development of the supply chain for fertilizer pellets.

The project developed it to function according to market principles without subsidies from the project.

The project tapped into the networks that already existed in the local economies. As shown in figure 4, there was an emphasis on facilitating the establishment of the input supply network of SMEs for FDP, made up of machine manufacturers, pellet producers, pellet retailers and distributors.

In order to strengthen the supply chain, the project focused on the following key aspects and carried out different activities to achieve them:



1. Identifying actors
2. Capacity-building
3. Promoting agricultural cooperatives and creating social capital
4. Assuring quality and good access to market
5. Facilitating access to capital
6. Research and Development

1. Identifying actors

Briquetting machine manufacturer. The project team worked with an agricultural equipment manufacturer in Yen Bai city, which was a mechanical workshop that had experience in making agricultural tools, to develop locally produced briquetting machines for FDP producers in Yen Bai (in addition to machine manufacturers in Thanh Hoa and Thua Thien Hue provinces). Significant improvement has been made in standardizing the quality of these machines as evidenced by the fact that most FDP producers for the project have purchased machines made in Yen Bai.

Pellet producers. The project team presented the business of producing and selling FDP pellets to the owners of existing businesses that were already producing and selling agricultural products.

CODESPA facilitated the development of a leasing program implemented by the WU PC. By making briquetting machines available on a lease basis, the program lowered the risk posed to small businesses and allowed them to test the viability of pellet production.

²² This was owing to the results of a Comparative Study Report of Communication Channels that was undertaken. The report analyzed the effectiveness and efficiency of each form of marketing and proposed mass marketing as the best option.

As the network of FDP producers grew, the project team supported them in developing relations with raw materials suppliers, to whom they could place bulk orders at discounted prices and on credit. The project team also supported loan applications made by producers to secure capital for equipment or working capital.

Recruiting was carried out in new communes as well as in existing communes, with more focus on the poorer rice farmers. The criteria for selecting the producers were designed by the project, including their business experience, location, prestige in the community, and financial resources. The efficient selection of communities and homes for FDP implementation allowed some new communes to access local production of FDP from the first harvest in which the project intervened, meaning they often did not even have to wait for one crop period for the FDP technology to be implemented.

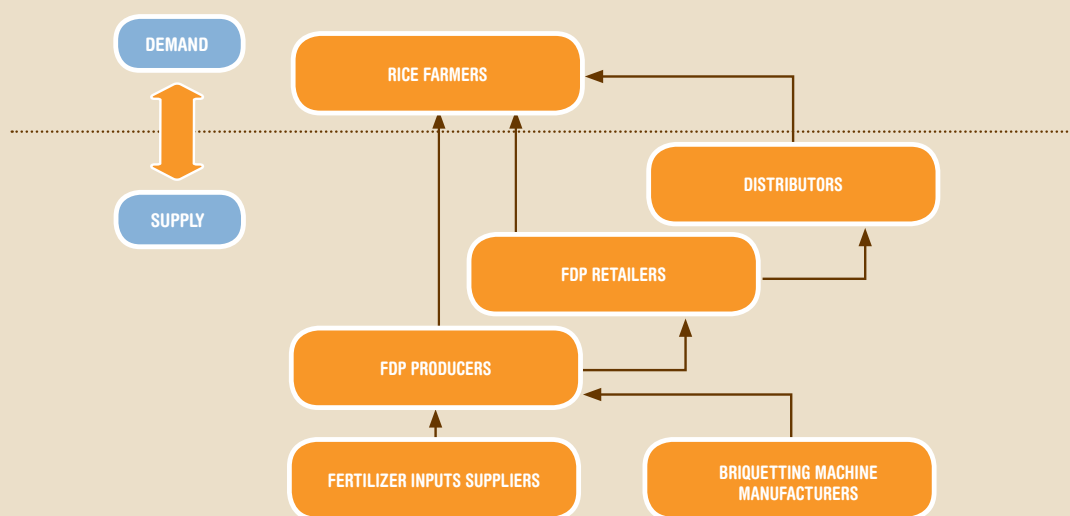
Time for production was compressed into one month at the beginning of each 6-month rice season offering the producer only two months of business per year. Most producers are adding FDP pellet production to other business activities.

Pellet retailers. Most of the pellet producers were already established fertilizer suppliers, and a number of pellet retailers were retailers of similar products, before the project began. Those fertilizer and animal feed retailers in the project areas have been adding FDP pellets to the products they sell to farmers.

While the demand is strictly seasonal and limited to the planting season of each rice crop, it is a profitable additional product line for their businesses. Retailers in the system vary in their capacity to offer FDP pellets to farmers on credit. Those who are well established and have access to capital are able to sell FDP pellets on a delayed payment basis. Other retailers who are newer to the market have less capacity to do this.

Distributors. As the project built up farmer demand for FDP and the supply system simultaneously, the WU at commune and village levels began to play a direct role in the supply chain. Distributors were WU members who already had experience in distributing fertilizers. WU members registered farmers' orders, collected payments and deposited these orders with producers. The pellets were then delivered to the WU for distribution to farmers. A network of WU distributors emerged as a result of the need to get FDP supplies to farmers during the first crop cycles, particularly to those in very remote areas.

FIGURE 4. MAP OF THE FDP VALUE CHAIN



Source: Value chains, creating business links for poverty reduction (with information from IDE). CODESPA 2010.

2. Capacity-building

A key objective of the project was to build the capacity of the local partners so that they would be able to design and implement market focused projects. These would be based not only on reaching out to farmers but also on supply chain development, with the goal of facilitating commercial transactions that can be sustained long after the project activities have ended.

One of the key elements in the supply chain development process was the focus on building the capacity of the whole network, so as to be able to supply pellets in a timely fashion in order to satisfy demand. In order to get the potential providers of products and services interested in the FDP business, project staff developed business plans showing both extremely positive and realistic prospects. The direct link between input suppliers was established and the project acted to strengthen their business relations.

For the longer-term capacity building, the project provided training on pellet production, on starting up businesses and business plan development, basic marketing and accounting. There were also training courses on gender mainstreaming to extension workers and other stakeholders in July 2010 as it was important that they convey an understanding of gender issues to farmers.

Capacity building activities covered project planning, implementation, and supervision, and were undertaken as on-the-job training, by involving the partners in the project processes. Over the course of the project, the local partners worked closely with the project management, learning the market development approach through direct involvement in the whole project cycle. Also, by carrying out promotional activities at the village level, the local partners acquired more effective communication skills with a new emphasis on customer service. Importantly, the engagement of the WU members at the commune and village levels helped develop the communication, organizational and presentation skills of many women in the project area.

Gender has been one aspect considered in the yearly planning, reviewing and assessment of the project. A quota for men and women's participation in all project activities has been established. Of course this doesn't mean that all activities will require participants to be equally balanced between men and women but quotas should be set according to the context, situation and activity, with the overall aim being gender mainstreaming.

3. Promoting agricultural cooperatives and creating social capital

Strengthening relations between pellet producers and machine manufacturers

Visits to machine manufacturers were organized for the first pellet producers. During the visits, pellet producers had the opportunity to be trained on pellet production, machine maintenance, and machine monitoring. When the machines had problems, machine manufacturers were assisted in visiting pellet producers to provide the maintenance service. Because the machine manufacturers were too far away from the buyers, a local machine manufacturer was recruited in Yen Bai at the beginning of Phase 2.

Strengthening the links between pellet producers and cheaper input suppliers

This activity aims at reducing the pellet production costs in terms of raw materials (fertilizer materials), so that either producers can benefit more from the production of pellets or the price of pellets can be reduced for farmers, or both. Lists of potential suppliers of fertilizer were collected and provided to pellet producers. Visits to potential suppliers were also organized for producers so that they might interact with them, develop their relationships and negotiate their contracts. Producers were also advised to group their orders in one bulk order to benefit from lower prices, which saved them around USD 0,054 (VND 200 up to VND 1,500) per kilo, when compared to individual prices in the provinces of Lao Cai and Ha Giang.

Establishing a pellet retailing network

Producers were assisted in developing their own retailing network and in establishing their business relationships, through meetings between producers and potential retailers, exposure visits and meetings to develop contracts.

Establishing the pellet distribution network

Distributors are necessary for supplying pellets to clients in the absence of a retailing network. The WU at district, commune, and village level was engaged in the distribution of pellets from the beginning of the project. This network, was paid a commission by producers for their work, and has proved to be extremely effective. However, the risk is that because the WU is a government body and is heavily involved in the distribution process, it could potentially prevent the participation of private retailers and distributors in the market.

Helping with the development of a “pellet producers club”

The benefits of creating a club for all the pellet producers were clear. Such a club could help the producers to reach agreements between themselves. For example, they could use the club to discuss the best way to serve the market when the market went beyond the physical administrative boundary of a producer, and thus prevent unhealthy competition between them. They could ensure the quality of all pellets produced and enjoy the benefit of doing business together, in terms of using group orders to purchase fertilizer inputs.

4. Assuring quality and good market access**Assisting producers in labeling/packaging design and production**

To help improve the quality of the supply service, the project helped the pellet producers to create better packaging for the pellets. As a result, pellets were packed into 10kg bags when sold and had application instructions and the producer's information (name, address, contact phone numbers) printed on the bag. The cost of the bags was subsidized by the project for the first two crops, but then covered by the producers themselves from the third crop onwards.

Facilitating the registration of businesses

This activity was carried out in order to help producers to gain a legal status for their businesses and was achieved with the assistance of the WU. One of the benefits of having this status is that producers can gain from the government's tax incentive policy.

Assisting input suppliers in promotional activities

This was done through the provision of promotional materials and by assisting them in advertising their products and services, for example by using a loudspeaker system. Also, by involving producers and retailers in meetings and events organized by the project, they were able to enhance their visibility among potential and existing buyers. The project team provided advice on how to market FDP, for example by providing discounts on pellets for buyers in new areas. Producers have become more proactive in marketing and some of them have even co-sponsored one of the FDP contests, which test and reward farmer knowledge and skills with respect to FDP, encouraging them to become active learners. Others have invested in erecting their own billboards.

Carrying out a promotional sales campaign

Sales promotions are incentives to encourage farmers to try pellets and therefore accelerate the demand for FDP pellets. A sufficient amount of pellets for the maximum of one sao of rice land was provided free as an incentive for poor farmers, but only if they actually invested in some pellets. Discounts were never used, as they may have led to a lack of clarity over prices.

Establishing a FDP pellet quality control system

This activity was initiated at the beginning of the spring crop of 2008 in response to the farmers' concerns over the quality of pellets purchased from producers. This was the first step towards the development of an official FDP quality control and management procedure. To implement this activity, a local quality control and management board coordinated by DARD was set up with the responsibility to collect pellet samples and have them checked by a formal institution in Hanoi, Vietnam's capital.

FDP competitions and events

Looking for new linkages between producers, promoters and farmers, the local partners proposed new activities like trade fairs, mobile promotional activities and provincial FDP competitions, where the farmers could become familiar with generic FDP concepts in their specific context by putting a face and a name to their potential suppliers.

5. Facilitating access to capital

Facilitating access to loans for working capital in order to help businesses grow

In order to generate confidence in the supply chain, a financial value chain was also developed. Information on loan availability, loan products and terms was gathered both informally and formally to help producers make decisions on securing extra working capital. Special help was given to producers to develop and update their business plans to apply for loans. This was done to enable the selling of FDP on credit, a factor which was required by the farmers.

Producers were assisted in accessing and signing agreements with the Hoang Lien Son Foodstuff Company. These agreements covered the provision of raw materials, which allowed 4 months of credit for 40% of the total purchase. In addition, producers were supported by the WU to access AgriBank or the Bank of Social Policies or both to meet their borrowing needs. Many producers secured loans from these local banks with subsidized loans and low interest rates. As a result, the producers had financial resources to sell on credit to farmers via the WU distributors (90% of FDP sold in the market was on credit).²³

Leasing FDP machine through a credit leasing fund

This activity was another way of providing financial assistance. It has been carried out by the Yen Bai PC to enable potential pellet producers to enter the business more quickly and has proved to be relatively helpful. Pellet producers can rent the machine for a certain period of time to produce the pellets. This also helps them to share the risk of any losses.



Microleasing has made the pellet-producing machines available to low-income community members, involving them in a new micro-enterprise in the value chain.

²³ WU Report on Supply Chain Development, April 2010

6. Research and development

Support in briquette machine production in Yen Bai

The purpose of this activity is to identify and assist the local manufacturer in Yen Bai in production of machines of a better quality at a quicker rate. The presence of the local manufacturer, with technical assistance and training from the project, has made access to maintenance for repairs easier for pellet producers. The local manufacturer has been supported by a machine producer in Thanh Hoa, and has been successful in producing and providing briquette machines for FDP producers.

FDP machine improvement

The aim of this activity is to develop a catalogue of the existing versions of FDP machines that are of good quality. The catalogue will detail the design specifications of these machines so that standardized machines can be produced. This is one of the efforts being made to overcome the problems caused by unreliable briquette machines. By the end of the project, the detailed specifications of machines will have been recorded, standardized and provided to the machine manufacturers.

Study on procedures for quality control and fertilizer business management

This study provided guidance for the development of an official procedure for FDP pellet quality control and aimed to assist provincial government bodies in developing an FDP quality control procedure. Such a procedure will help pellet producers to legally and officially register their pellet production; it will also help protect farmers from unwittingly buying poor quality pellets. The project team has worked with functional bodies in Yen Bai Province, such as the DARD and the Yen Bai Bureau of Quality Measurement, to gather information and decide on such things as policies, methods of enforcement and the design of quality registration forms.



Quality control of pellet machines and the pellets themselves ensure that farmers receive the value they are paying for from the product.

PART 2

Project impact





PART 2. PROJECT IMPACT

PROJECT MONITORING SYSTEM

CODESPA, in collaboration with IDE, developed a monitoring system database²⁴, in which project staff regularly compiled information on project activities and their impacts. Forms were designed to collect data from farmers, producers and retailers on the use of FDP, including farm costs, production levels, sales and profits.

Information from farmers was collected by the WU at commune level. A team including the village FDP promoter, the WU collaborator and a farmer met to fill out the form at the end of each harvest. Information was sent to the project office in Yen Bai to be copied onto the computer system. The project team also collected information from producers and retailers at the beginning of each crop period. The data was collected during an interview and sent to the project office to be recorded.

There was continuous technical data collection on rice harvests. This was done by IDE staff and local partners using the mentioned forms. All farmers were instructed on how to keep records of rice growth during its development stages and were provided with forms for compiling the information. Data on conventionally fertilized rice areas were also collected for comparison. The data collected will help further research on the impact of FDP compared with the conventional fertilization method, in terms of yield, income, and other indicators.

The WU provided the project team with information on the total amount of FDP distributed through its network. On the basis of the kilograms of FDP reported to have been distributed in each commune, and the commission paid to distributors by the FDP producers, total revenues and net profits were calculated. However, this process is now largely dependent on the WU's data collection system and thus is lacking in data from farmers who purchase FDP through other retailers.

CODESPA has organized the GIS, which was created by the DARD and maps all the soils of Yen Bai Province, indicating those that are suitable for FDP application. The GIS also incorporates all the information from the project database.

The report data system recorded relevant information on gender issues. The method of gender analysis and the indicators used should be followed strictly. This analysis has been gradually implemented within the scope of the project.

²⁴ Appendix 3. Database managed by the project for on-going Monitoring and Evaluation (M&E) contains the "Key Performance Indicators" sheet as a excerpt from the database.

CODESPA has redesigned the data collection and entry procedures and provided training on managing the database and the processing of data. These data forms, monitoring aids and database development for monitoring and evaluation were useful to gather information and measure results of the project. All of them were transferred to the local partners.

The main monitoring and evaluation tools carried out during the project were as follows:

- Data forms, monitoring aids and database development for monitoring and evaluation.
- Demo farmers' meetings: These served to gather feedback from the demo farmers in order to make necessary adjustments for the next crop.
- Monthly and quarterly meetings with local partners. At these meetings, CODESPA, IDE staff and partners' staff discussed and checked the progress of the project, provided updates on any problems and important issues, and made plans for the following month.
- Continuous technical data collection on rice harvests. This was done by project staff and local partners. All demo farmers were instructed on how to keep records of rice growth during its development stages and were provided with forms for compiling the information. Data on conventionally fertilized rice areas were also collected for comparison. The data collected will help further research on the impact of FDP compared with the conventional fertilization method, in terms of yield, income, and other indicators.
- Case study development. Success stories about FDP adopters, and especially poor farmers, were documented for evaluation and promotional purposes.

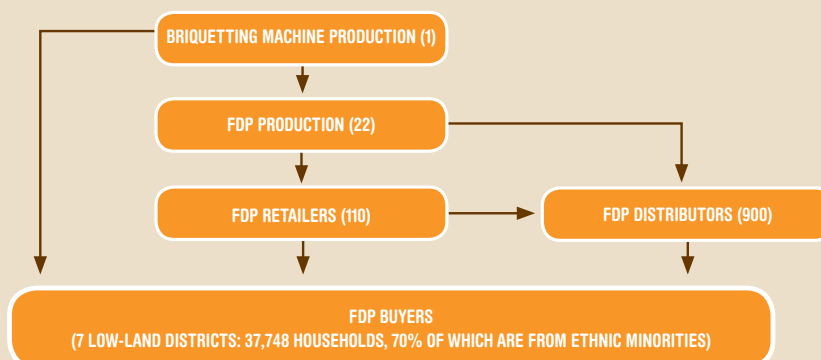
The information system proved to be a very important element in designing the project, in formulating strategy and in planning activities, to be able to then establish the priority areas for developing the market. Also, it has allowed CODESPA to measure and monitor results. Information system components are classified as follows:

The project has been effective in addressing structural poverty as it has developed a market directed by local actors and whose product had a beneficial impact on their earnings and food security.

1. FDP MARKET DEVELOPMENT

After 4 years of implementation, a well-functioning market for FDP has been established in the entire province as it is shown in Figure 5. Production and supply network of FDP in Yen Bai, significant number of households (40,000) have adopted FDP, occupying around 30% of the total market, and given that a chain of suppliers is now operating profitably, it seems that the market is well positioned to sustain itself.

FIGURE 5: PRODUCTION AND SUPPLY NETWORK OF FDP IN YEN BAI



Source: CODESPA

2. WEALTH CREATION AND RETURN ON INVESTMENT

The project has demonstrated very favorable gains in net income for farmers and service providers in the value chain. Of paramount importance in evaluating the overall performance of the project is to determine the total wealth creation generated²⁵, the rate of return on investment or benefit/cost ratio, and the leveraging ratio²⁶ of farmers adopting FDP technology²⁷.

As table 3 below show, the benefit/cost and leveraging ratios of the project show very impressive returns in terms of the overall project wealth creation in relation to each donor dollar invested. The total net income generated was USD 2.59 million (VND 48 billion) and the total project cost was USD 333,938 (VND 6,1 billion).

TABLE 3. PROJECT WEALTH CREATION AND RETURN ON INVESTMENT (ROI)

VALUE CHAIN BENEFICIARIES	2007	2008	2009	2010	TOTAL NET INCOME INCREASE (VND)	TOTAL NET INCOME INCREASE (USD)
Farmers FDP adopters	610	8,738	17,032	37,748		
Additional income for FDP adopters	179,240,000	2,775,390,590	11,986,806,194	29,483,374,926	44,424,811,710	2,401,341
Local Machine Manufacturer	1	1	1	1		
Additional income for Machine Manufacturer	12,000,000	21,000,000	15,000,000	16,000,000	64,000,000	3,459
FDP Producers	1	7	14	22		
Additional income for FDP producers	4,488,000	221,595,000	399,725,000	1,947,926,000	2,573,734,000	139,121
FDP Retailers	1	28	58	110		
Additional income for FDP retailers	250,000	59,500,000	79,502,200	238,386,400	377,638,600	20,413
FDP Distributors	43	280	390	916		
Additional income for FDP distributors	1,890,000	62,674,000	62,674,000	354,857,000	566,148,790	30,603
Total Net Income Increase					48,006,333,100	2,594,937
Total Project Cost					6,177,853,000	333,938
Benefit/Cost Ratio					7.77	
Farm Investment in FDP					21,314,870,392	
Leveraging Ratio					3.45	

Note: USD1= VND 18,500 (the average value during 2007-2010).

Source: Project progress report and calculations from project database as of October 2010.

The benefit/cost ratio was 7.7 or a return of USD 7.70 for every USD 1.00 invested. The leveraging ratio of farmer investment in FDP over project cost was 3.45, or roughly USD 3.45 invested for each USD 1 spent by the project.

²⁵ i.e. the total net income increase for all beneficiaries

²⁶ i.e. the total net income increase over the total project costs

²⁷ i.e. the total farm investment over the total project costs

3. WOMEN EMPOWERMENT

As women play an important role in rice farming, women were the principal participants and beneficiaries of the project, and have been directly involved in field trials and demonstrations, during which they have learned about FDP planting techniques and about the correct spacing of rice seedlings.

The adoption of the FDP methodology means that the labor involved in fertilizing rice fields is reduced, thereby reducing women's workload. Women particularly appreciated this benefit because it freed them up to take on other income-generating activities (e.g. small animal husbandry, including pig and chicken farming).

Women have been included in project management at different levels, in key groups and have been involved in the extension network at provincial and communal levels. As illustrated in Table 4. FDP Value chain participants by gender, the number of women participating in the FDP value chain as both service providers and market facilitators is also significant. Women have been actively involved in producing, distributing and retailing FDP supplies. Furthermore, women comprise one-third of all the FDP producers and wholesalers in the two provinces, over 50% of the private retailers, and 100% of the distributors.

TABLE 4. FDP VALUE CHAIN PARTICIPANTS BY GENDER²⁸

VALUE CHAIN PARTICIPANTS	YEN BAI PROVINCE			
	MALE		FEMALE	
SERVICE PROVIDERS	N	%	N	%
Briquette Machines	1	100	0	0
FDP Pellet Producers	11	50	11	50
Distributors	0	0	916	100
Retailers	45	42	61	58
Market Facilitators	N	%	N	%
Women's Union	3	2	120	98
AES	61	60	40	40
DARD	8	100	0	0
Total	96	14	577	86

Source: Project progress report and calculations from project database as of October 2010.

It can be concluded that FDP technology is well suited to the economic needs of women; it enables them to increase farm income and save labor time. Increases in rice yields and farm income have enabled women to make productive investments. For example, a number of women have expanded the area of land assigned to rice production with FDP or they have invested in other farming activities. Most importantly, the adoption of FDP has helped women to raise more income for the health, education, and basic needs of their families.

As producers and retailers of both sexes have been invited to participate in training courses on management and business, as well as study tours and other capacity building activities, the husbands have been able to understand, support and help their wives to apply FDP. Because men are involved in the project, they understand the benefits of FDP technology and support women in the project activities. This could also reduce the burden on women who are traditionally solely responsible for the conventional application of fertilizer.

²⁸ Calculations from Project Database as of October 2010.

4. IMPACT ON DEMAND ACTORS

FARMERS' INCREASE OF INCOME

Case Study 1 provides an example of the impact on household income through the adoption of FDP. Evidence has shown that the combination of increased yield and savings that FDP application provides has significantly increased income for farm households.

- **Increased rice yield.** Farmers reported a broad range of increases in rice yield but all agree that with FDP use they harvested more per sao than when using the conventional method. The data displayed below in Table 5 confirms this. Typical reported increases were 40-50kg/sao more with FDP use. Typical increases in yield were 22.5% (48 kg/sao²⁹) higher than when using conventional fertilizer application techniques. The following table compares the rice yields obtained from three crops (summer 2009, spring and summer 2010), when using FDP and those obtained when using conventional methods:

TABLE 5. FDP VERSUS CONVENTIONAL FERTILIZER APPLICATION (RICE PRODUCTION YIELDS)³⁰

Indicator Yield (kg/sao)	FDP			Conventional			Difference			Average for 3 crops
	Summer	Spring	Summer	Summer	Spring	Summer	Summer	Spring	Summer	
	2009	2010	2010	2009	2010	2010	2009	2010	2010	
+ Mean	229	253	192	193	217	170	36	83	22	47
+ Min	151	170	120	115	120	110	36	60	10	35
+ Max	360	432	250	288	331	233	72	199	17	96

Source: Project progress report and calculations from project database as of October 2010.

- **Cost savings.** Farmers use less rice seed when planting with FDP, typically using 0.25 kg/sao less than when using conventional fertilizing methods (See Table 6). They also spend less on FDP supplies than on supplies of conventional fertilizers. Interviews with farmers confirmed the data collected by the project team. Overall this data indicated that savings were made when FDP pellets were used instead of conventional fertilizers. On average, in 2009 investment costs when using FDP were USD 6.6 (VND 122,044) less than when using conventional fertilizing methods.

TABLE 6. FDP VERSUS CONVENTIONAL FERTILIZER APPLICATION (INVESTMENT COSTS)³¹

Investment Cost (VND/sao) - 2009	FDP	Conventional	Difference (VND)	Difference (USD)
+ Mean	573,646	695,690	(122,044)	-6.60
+ Min	411,200	491,000	(79,800)	-4.31
+ Max	1,011,500	906,000	105,500	5.70

Source: Project progress report and calculations from project database as of October 2010.

29 1 sao = 360 square meters

30 Calculations from Project Database

31 Calculations from Project Database

5. ACCESS TO CREDIT

In terms of credit the project created links between producers and farmers to facilitate FDP purchases on credit, by both assessing small business to analyze the risks and credit goals and by generating confidence between market actors; as far as January 2011 around 90% of FDP sales were made on credit, a basic tool that allows farmers to address often unpredictable harvest results, which could mean positive revenues or unexpected losses.

6. BETTER QUALITY OF LIFE

- **Reduction in labor input.** Because FDP pellets are applied only at the beginning of the rice season rather than three times per season, as is typical when applying fertilizer in the conventional manner, there is a significant reduction in labor for farmers. This is estimated to be between 1 and 1 ½ days per sao or 30-45 days per hectare per crop. Farmers often referred to this as the benefit that they valued most highly, since it freed them up for other income-generating activities. Therefore FDP resulted not only in direct labor cost savings but also produced the indirect benefit of additional time for other income-earning opportunities.



Case Study 1

The case of the farmer, Ms. La (To Mau Commune)

Ms. La began using the FDP approach as a demo farmer with the spring 2007 crop, so she now has two full years of experience. She plants 5 saos of rice on a field that she owns and rents an additional field of 4 saos. On average she harvests two tons (2,000 kg) of rice each season. Initially she found FDP application labor-intensive, but with experience she now finds it provides a significant labor reduction. She can now apply FDP to all nine saos with three laborers in just two days. Having her time freed up to dedicate to other work has been an important benefit to Ms. La. She was able to get a job with the road construction crew that repaired the road running through her village. She has also been able to help her husband with his work constructing latrines in the neighborhood. Ms. La has been able to sell additional rice as a result of increased yields. She holds the rice until she needs cash and then sells typically 20-30 kg at a time. She estimates that she sold 1 ton (1,000kg)



of rice worth USD 282 (VND 5 million). With her increased income from rice, animal husbandry, and other employment, Ms. La was able to buy more things for her family, for example a motorbike that cost approximately USD 1,000 (VND 18 million). Ms. La is enthusiastic about the benefits of FDP application and expects to continue to use it on all her rice fields.

Source: FDP project mid term evaluation report – May 2009.

- **Meeting households' needs.** Typically farmers reported that by using FDP they are now able to grow enough rice to meet the needs of their households for the entire year. Previously many households experienced a 1-2 month shortage of rice from their own production. With the increased yields resulting from FDP use, more farmers are now meeting all the household's needs which then frees up resources for other income-producing activities. The activity most frequently reported by farmers was animal husbandry.

It is important to note that this increase in income has not necessarily been in the form of increased cash income. However, the excess of rice was held as a reserve to be sold if and when the household needed cash. Several farmers reported selling rice when short on cash, but no interviewees regarded such sales as a formal business enterprise.

According to the IDE survey, high yield rice varieties, which are priced 50% higher than basic yield varieties, are applied on a large scale in Yen Bai. The combined use of FDP and high yield varieties will provide even greater profits for farmers, reaching an estimated additional income of USD 60-90 per household annually, compared with USD 40-60 with the more common variety.

7. IMPACT ON SUPPLY ACTORS

Pellet producers:

The project has succeeded in attracting MSMEs into the FDP supply chain. During phase one, two businesses began to produce FDP pellets, but as the project moved into the next phase, and continued introducing FDP application to many new communities in new districts, the number continued to grow. At the moment of this publication, there were 22 producers in the whole project area.

As Case Study 2 illustrates, FDP producers clearly find this a profitable addition to their businesses and plan to continue to supply pellets to their network of distributors and retailers, as well as to sell directly to farmers. It is estimated that an average profit of USD 0,05-0,08 (VND 1000-1500) per kilogram of FDP was made by producers.

With this average profit per kilogram of FDP, producers received a total profit of on average USD 2,200-3,200 (VND 40-60 million) per year.



Pellet producers have found their new businesses to be profitable, and new producers have entered the market.



Case Study 2

The case of the producer, Mr. Lich (Minh Xuan Commune)

Mr. Lich was the first producer of FDP pellets in Luc Yen District. He was approached by members of the project to consider FDP as a business opportunity because he was already an established vendor of conventional fertilizer materials, and his business was centrally located in the original project area. His long-standing business experience also positioned him well to be able to mobilize the capital needed for this new venture.

Mr. Lich participated in the study tour to Hue that was organized by the project. This gave him an opportunity to learn more about the business and about the equipment needed to produce pellets. He bought his first machine from Hue and a second in Yen Bai.

Mr. Lich sells pellets on credit to many of his customers (reportedly 50% of his sales). 70% percent of his sales are through the WU distributors. 15% are to retailers, and the rest are sales outside the project area. He prefers to sell through the WU since he relies on them to collect payment from farmers. He is reluctant to extend credit to individual farmers.



Producing FDP pellets has been very profitable for Mr. Lich. His household income has increased by approximately 30%. Sales peaked at 28 tons of pellets sold for the summer 2008 crop. Since then his sales have decreased. He attributes this to the fact that many more producers have entered the market. However, he finds it profitable enough to continue this as one of his product lines. Rather than use the additional income from FDP on household items, Mr. Lich prefers to re-invest it in his business. He has now expanded the animal feed production side of his business.

Source: FDP project mid term evaluation report, May 2009.

Retailers

Retailers are also entering the market in growing numbers as FDP use grows. A network of retailers was selling traditional fertilizer supplies to farmers. Many are now finding it profitable to add FDP to their product offering (See Case Study 3). At the beginning of phase two, the number of private sector retailers selling FDP supplies was only 28 and after 2 years, it has now reached a total of 110. The project reported that on average retailers gained a net profit of around USD 0,05 (VND 1,000) per kilogram. This comes to about USD 162-270 (VND 3-5 million) per year.

As of April 2010, sales via private sector channels represented just 30% of the total sales, the rest were still via the WU network.



Case Study 3

The case of the retailer, Mr. Dinh (Khanh Thien Commune)

Mr. Dinh has been selling traditional fertilizer and animal feed products for more than 20 years and has found it profitable to add FDP pellets to his product range. He buys pellets from a producer whose quality he trusts and who has a strong reputation with his farmer customers. He extends six months of credit to farmers with an interest of 1.5% per month. These terms are the same as those he offers on his other products. While he reported some delayed payments he said he does eventually collect outstanding debts from his customers. He is well known in the community and relies on word of mouth for his advertising. He received both business training and technical training in the FDP



methodology from the project. He is now positioned to instruct his customers in the proper application of FDP. Mr. Dinh reported a 20% increase in business income after the introduction of FDP.

Source: FDP project mid term evaluation report, May 2009.

Briquetting machine manufacturer and distributors

With an estimated profit of USD 216 (VND 4 million) per machine, the machine manufacturer could earn USD 3,460 by selling 16 machines (VND 64 million). Also, the WU distributors earned a commission from producers of around USD 0,05 (VND 1,000) per kilogram of FDP.

8. LOCAL CAPACITY-BUILDING

Project implementation provided WU members at village, commune, district and provincial levels the opportunity to develop new skills and gain leadership experience. At village and commune levels women were engaged in planning and implementing promotional activities, reporting to local leaders, distributing FDP supplies and demonstrating the application of FDP.

a) Local partners

Market-based programming was new for the WU PC staff. The experience of working closely with IDE during phase one improved their understanding and developed their capacity to use this approach, which may become useful for them in other future economic endeavors.

The project strategy to transfer market facilitation skills directly to local institutional partners, including the WU, the DARD and AES has been relatively successful. Thanks to permanent training, the WU has familiarized itself with the market-based approach and has changed its way of thinking on FDP project implementation and expansion. Also, the quality of the WU's and the DARD's work has shown significant improvement. The WU and the DARD also confirmed that they have become much more confident in developing ideas and work plans, as well as in implementing the project. Most importantly, the WU at the provincial level expressed what it regards as one of the greatest successes of the project: the fact that the WU project team is now capable of carrying out project management by itself, thanks to its training.



Project implementation provided WU members at village, commune, district and provincial levels the opportunity to develop new skills and gain leadership experience.

The WU quickly and successfully adopted a market-oriented approach. They applied this approach to creating demand, through marketing, advertising and promotional campaigns. They also applied it to supply chain development, through the use of technical training that covered such subjects as agronomy, FDP application, M&E and business development, to support a viable network of FDP service providers. Furthermore, the WU has demonstrated competency in carrying out marketing campaigns, attested to by the steady increase in demand for FDP. The organization has expressed its willingness to assume a continued role in stimulating demand for FDP through promotional activities. It has also raised its target to reach a greater number of farmers in more communities than was planned for and budgeted for in their contract with CODESPA. So the WU appears to be strongly committed to both the technology and the market-based model that they have adopted from the project.

AES and the DARD have also demonstrated a strong capacity to carry out their roles in technical training and quality control management in the FDP market, despite some initial problems experienced with the briquette technology in Yen Bai, involving complications with the gear attachment. AES maintains regular check-ups on FDP pellet quality among the producers and has established a good working relationship with the WU, especially in terms of collaborative training on FDP application in field demonstrations. The project

monitoring databases shared with the evaluation team by AES and the DARD appear to be thorough and well organized. The only area where more data collection at the local level could prove useful is in the monitoring of soil and water quality and in the documenting of the longer term environmental effects of FDP, specifically in communities where it is being applied. Obviously, this has budgetary implications in terms of having adequately trained staff, technology (e.g. GIS), and financial resources needed to carry out effective monitoring and an environmental impact assessment.

It has been reported that the WU has now applied what it has learned in project planning, implementation, and reporting, and the union has met about 70% of the required quality standards. The WU's inability to meet the remaining 30% is due to its staff's lack of experience in project implementation, project management and problem solving. However, this can be gradually resolved through continued development of the project.

The documentation produced by the WU, including work plans and reports, are considered evidence of WU's efforts and increasing capacity.³²

Project results by March 2010:
100% of FDP producers were linked to cheaper fertilizer suppliers
61% of FDP producers had access to loans with low interest rates
94% of FDP producers were pellet quality registered
New FDP producers had been selected according to established selection criteria
100% of FDP producers had been officially registered with the government
100% of FDP producers were selling FDP on credit to both poor and slightly wealthier farmers (FDP sold on credit was up to 90% of the total quantity sold)
The percentage of loans collected was very good at 98%
94% of FDP producers had developed business plans
100% of FDP producers had been trained by the briquetting machine provider on machine operation and maintenance
61% of FDP producers had expanded their business areas from since the spring 2010 crop
83% of FDP producers had been trained in business planning
100% of FDP producers were using knowledge of business and marketing in their production and sales processes

b) Value chain actors

Through training in business planning, financial management and marketing, the management and business capacity of MSMEs was improved.

The results were: 14 provincial government officials, 21 district government officials, 250 staff from the WU and AES, and over 1000 promoters have improved their capacity and skills in presentation, communication, project planning, implementation, M&E, and in understanding and applying the market based approach and value chain development principles.

9. INTEGRATION IN PUBLIC POLICIES

In phase three of the project, the WU took the initiative to expand to the two districts of MCC & TT with a new model to integrate FDP into government poverty reduction programs (i.e. 135, 30A).³³

The DARD has worked with the Department of Finance to add FDP onto the list of fertilizers under government management (i.e. the government controls quality and prices), so that FDP can be integrated into government programs and so that enterprises involved in FDP production can have access to extra support from these government programs. FDP's inclusion on the list is important, as producers will continue to receive support from local authorities in carrying out sampling procedures for quality control. As a result, they will continue to hold certificates of FDP quality which are needed to maintain the trust of their customers. In support of the project, DARD has developed instructions on the implementation of the governments Decree 15 which imposes "administrative fines in fertilizer production and business" and applies to all fertilizers, including FDP in the province of Yen Bai.

³³ Program 135 II is a 5-year poverty reduction program during 2006-2010, which targets 1,644 poor and mountainous communes in 45 provinces that are home to the majority of Vietnam's ethnic minorities (see the link: <http://chuongtrinh135.vn/Default.aspx?alias=chuongtrinh135.vn/english>). Program 30A was initiated in 2008 with the issuance of Resolution 30A/2008/NQ-CP of the government, aiming at reducing poverty in 61 poorest districts in Vietnam.

10. ENVIRONMENT

As it was already mentioned, the environmental benefits of applying FDP include improved soil and water quality due to the significant reduction in the use of fertilizers, pesticides, and herbicides. There is also less runoff of urea and other chemicals into the water supply. This is beneficial to the community because it ensures the continued quality of natural resources, but also because nitrate-polluted water can have public health effects with respect to blood cell oxygen supply. Reducing this water pollution also reduces the communities' public health risks. A study³⁴ conducted by HUA confirmed no negative impacts on the soil from FDP use and lower levels of urea in the water than after the conventional application of fertilizer.



FDP reduces the use of fertilizers, pesticides and herbicides and by introducing the pellet inside the field, it is decreased the runoff of urea and other chemicals into the water supply.

FDP and complementing products (the standard combination) were applied on 2,480 hectares of land used for rice cultivation and analyzed for one year. Based on the results of this quantitative analysis by HUA, the concentration of nitrates accumulated in groundwater underneath areas where fertilizer had been applied in the conventional manner was 66.60 mg/L. This was much higher than the permitted quantity of 45 mg/L, according to the Vietnamese standard. In areas where FDP had been applied, the concentration of nitrates was only 38.88 mg/L, there were savings of 280.7 tons of urea and 61.4 tons of potassium and herbicide costs were reduced from USD 1.15/sao (VND 21,280) to USD 0.75/sao (VND 13,881), equivalent to a saving of USD 0.39/sao (VND 7,399).

So FDP can help to reduce the problem of fertilizer dissolving into groundwater. As FDP pellets are placed relatively deep into the soil there are only insignificant traces of ammonia in the surface water. Hence, FDP application helps to limit many of the negative effects of fertilizers both in groundwater and surface water.

There are some limitations in the use and effectiveness of the first generation of FDP (FDP1). As noted, FDP1 does not respond well in sandy soils, and is therefore not being used in project areas with this type of soil (new generations of FDP could be used to address this problem). To maximize rice yields and gain the full benefits of FDP1, the technology should be supplemented with the use of phosphorus and organic manure. The ideal balance of all inputs per hectare include: 202 kg of FDP, 11 kg of manure, 150-200 kg

of lime, and 220-270 kg of phosphorus. It is more than likely that many farmers have not been applying the full spectrum of inputs that would really optimize crop productivity; this is probably due to the cost and/or labor time required to apply all of these inputs.

34 Environmental Impacts of FDP by Dr. Nguyen Tat Canh, HUA. The analysis was conducted from July 2008 to July 2009 and tracked the environmental impact of the application of FDP.

PART 3

Best practices





PART 3. BEST PRACTICES

1. MARKET-BASED APPROACH

“The Rush to serve BoP needs”

Despite the fact that BoP³⁵ local markets don't have the potential commercial scale that other markets do, their scale of social impact can be far more meaningful over the long term. Thus, at the beginning of the project, CODESPA found itself questioning three basics:

1. How can we be sure that the supply chain and job creation in poor communities will not incur excessive resource usage and waste?
2. Is it enough to look at income creation alone without knowing what difference it can make in the quality of life of the poor?
3. And will the priority of enterprises to pursue profit drive down price for local producers from poor regions?

The key factor to the success, impact and sustainability of the project has been the market-based approach in which both demand and supply are developed in parallel.

CODESPA, in cooperation with IDE, has adopted an innovative methodology to address the rural poverty confronted by farmers and small markets. The project is market-driven, stimulating changes by creating a demand for new technologies that have positive development impacts, and offering an alternative to traditional subsidized livelihood improvement models. The approach is based on a public private partnership, in which public sector institutions of the Vietnamese Government create awareness and stimulate demand for FDP through mass marketing and public advertising campaigns. In conjunction with this, FDP is produced, distributed, and sold through a network of small-scale commercial enterprises.

This new method of implementing development projects is very different from the approach traditionally taken by NGOs. Contrary to the traditional subsidy approach, a farming household is considered as an enterprise that needs to invest in production and business, and requires services for business development. Farmers will invest in technology when they foresee clear economic benefits and therefore, a new technology like FDP with all its associated benefits can be promoted successfully. The supply chain functioned according to market principles

³⁵ In economics, the bottom of the pyramid is the largest, but poorest socio-economic group. In global terms, this is the 2.5 billion people who live on less than \$2.50 per day. The phrase “bottom of the pyramid” is used in particular by people developing new models of doing business that deliberately target that demographic, often using new technology. This field is also often referred to as the “Base of the Pyramid” or just the “BoP” (http://en.wikipedia.org/wiki/Bottom_of_the_pyramid)

without subsidies from the project. The introduction of a market-oriented approach to poverty alleviation has proven successful in creating income generating opportunities for small businesses in a sustainable manner. In the case of Yen Bai, a poor mountainous area where the income of farmers is low and where enterprises are hesitant to engage in the production and distribution of a new product, it was necessary for the project to invest sufficient resources in the initial stages to build both demand and supply, and then to link them together until the market could function by itself. Various rural marketing methods were used to raise farmers' awareness and to foster their demand for and adoption of FDP products. Micro and small enterprises were identified, selected and trained to be able to participate in the production and distribution of FDP, either as producers or retailers. The WU distributors and village leaders were also mobilized to facilitate the delivery of FDP to remote areas where private retailers did not exist (with an exit strategy for these distributors when the private sector reached the point when it could fully accommodate the distributing role).

2. PUBLIC-PRIVATE PARTNERSHIPS (PPP)

“Pooling all our resources for achieving a common goal”

The introduction of a new technology like FDP in a mountainous area with a high poverty rate, with the objective to reach an ambitious number of users (35,000) was a challenging task. The solution the project found was to make use of a PPP with the participation of the DARD, the WU, IDE and private sector actors (mainly local micro and small enterprises that supply the products and services). This has proved to be a highly effective and

successful model in bringing large numbers of the poor into the rural marketplace.

Role of Yen Bai DARD:

DARD, as a functional government body in charge of agricultural development, has provided an efficient public service through technical training and quality control management in the FDP market. DARD has compiled a manual for broadcasting FDP, conducted check-ups on FDP pellet quality among the producers, undertook policy advocacy to include FDP in the list of fertilizers under state management and developed instructions applied locally on the implementation of state regulations on fertilizer management. DARD has played an increasing active and important role over the project period along with the transfer of project management role from WU to DARD by the end of the project.

The project worked closely with the People's Committees at all levels. The WU has had a key role to play in providing some limited market functions and in reaching out to farmers throughout the project area. The People's Committee representatives have participated in project steering boards and have supported the communication efforts of the project. Some local leaders have incorporated support for the use of FDP into the People's Committee's annual resolution.

While having advantages, the consortium model is a complicated structure with multiple partners, so each issue requires a long time for discussions and agreement by all parties. The coordination of this model also demands a great deal of effort and skill on the part of the participating partners. It is needed strong coordinator skills from the leader organization.

The cooperation between public and private sector actors has demonstrated that government institutions have a key role to play in providing a number of limited market functions. These institutions have a comparative advantage in leveraging human resources and activating social networks to stimulate strong demand for products and services.

The innovation and flexibility of local partners during the implementation of the project has been a key factor for the success of the project. The WU and the DARD have creatively applied the tools provided by IDE, especially in solving problems (e.g. once when a machine broke down, rumors were spread about the pellets containing rice worms or diseases, which was solved by prioritizing quality control and public display of quality certificates issued by DARD). The local partners took the initiative to propose additions and changes to the

IDE guidelines according to specific local conditions and budget constraints. For example, the WU proposed that some communes needed to be supported to cultivate one crop while others needed support for at least two crops to ensure sustainability. The WU also proposed new activities outside IDE's list of proposed activities designing them in detail and implementing them effectively (e.g. trade fairs, mobile promotional activities and provincial FDP competitions).

Based on previous experience, the WU is expanding the project into the MCC & TT districts, adopting a new model that combines both the market approach and the approach adopted in the government subsidy programs. These programs are carried out to address the poverty that exists in these 2 districts which have a large population consisting of a considerable number of ethnic minority groups and poor farmers.

At the same time, it is of course necessary that private sector actors are active in carrying out promotional activities of FDP. As of January 2011, sales via private sector channels represented just 36% of the total sales, the rest were still via the WU network. Data obtained on profit margins, credit supply channels and capital liquidity flows suggest that most private FDP producers earn a sufficient profit to be able to cover the additional costs of marketing aimed at stimulating enough demand for FDP. The private producers interviewed were willing to absorb such costs but also acknowledged that they did not have efficient means to reach out to customers in the most remote rural communities. They also said that they are at a major disadvantage, given the WU's presence and capacity to mobilize large numbers of farmers in the more distant and inaccessible rural mountain areas and hinterlands. Private producers will need to design marketing strategies that favor the building of a network of private distributors and retailers. Using the network they can then negotiate as a group, share costs and carry out marketing together.

Taking into account the needs of producers and retailers, the project team conducted training courses in marketing skills for these groups in 2010. The goal of these courses was to make the private enterprises capable of designing and implementing marketing activities for FDP before the project ends. According to the WU, many producers have improved their capacity as a result of this training. A number have started to build up their brands, to design marketing strategies and some have tried to promote FDP through pricing policies or product improvement. Others have sought to sell to other markets in neighboring provinces like Ha Giang, Lao Cai and Tuyen Quang.



The Directing Committee of the Placement Center project in an evaluation meeting in the Lâm Thượng commune, Lục Yên district in June 2008.

3. RURAL MARKETING

“Shaping the message, source of transmission and channel to countryside perceptions”

Role of Yen Bai Women's Union:

The Women's Union is perceived as trustworthy and the organization used that credibility to build the confidence of farmers to try the new technology. The multi-tiered organizational structure of the WU makes it an integral part of these rural communities. A message for the promotion of FDP can be transmitted via the channels of the WU to grassroots level, to the rice farmers and micro enterprises in the FDP supply chain. In addition to communication activities to stimulate the demand for FDP, the WU also actively participates in the project as distributors in the supply chain. The WU, therefore, fulfils two roles, both as market facilitator and as an actor in the supply chain. It is noteworthy that nearly 100% of distributors are WU members who work alongside private sector retailers to distribute FDP between producers and farmers.

High adoption rates by farmers demonstrate that the rural marketing efforts of the project succeeded in reaching farmers throughout the targeted area.

Rural marketing activities targeted farmers with irrigated rice production, through the network of the WU, from the provincial level to the grassroots level. The rural marketing efforts of the FDP project were made in order to educate and create awareness to rice farmers on FDP, to encourage families to change and shift to adopt FDP, and to stimulate farmers' demand for the pellets. Mass marketing through loudspeakers and other media was accompanied by specific instructions on how to use FDP. This was delivered via training sessions with the WU members at the commune level and with extension workers who then trained farmers. The main marketing activities were also carried out through demonstrating successful examples of the application of FDP, through group meetings and other events hosted by the Women's Union, capitalizing on the powerful tool of word-of-mouth marketing among farmers. In each

commune 20 farmers were selected as demo farmers and these also received specific training in the use of FDP as well as general training in crop management. Creative methods were used such as the organizing of competitions for farmers in which they might be asked to create and perform songs or poems about the benefits of FDP. Such events have caught the interest of many and built enthusiastic support for FDP as a new way of cultivating rice.

Rural marketing methods were adapted to each phase of the project. During the first crops when the new technology was introduced and adapted, the project staff and the local partners at the district level jointly carried out these activities. In later phases, when the technology of FDP was finalized, project areas were expanded; the project focused on technology dissemination, decreased its direct involvement in promotional activities and helped the local network itself carry out marketing activities. The local network then adapted the concepts and materials already developed throughout the project. It is important to note that, from the second year on, the marketing campaign was intensified with a greater focus being put on mass marketing. This was owing to the results of a Comparative Study Report of Communication Channels that was undertaken. The report analyzed the effectiveness and efficiency of each form of marketing and proposed mass marketing as the best option given the need to scale up marketing activities and the budget constraints.

Emphasis was put on the real benefits of FDP including increased rice yields, reduced costs, improved incomes, and labor saving. Messages such as “Just 1 FDP use per crop, 40% savings on fertilizers, and non-dependence on the weather” were communicated to households in a bold way, via posters, leaflets, and other marketing materials. It is noteworthy that commercial marketing methods were used in place of awareness raising or educational propaganda. Farmers were treated as clients who could buy and use the product and not as farmers who were simply receiving educational information.

In order to design the content of marketing campaigns, the project team conducted market research, in order to define which tools and messages were best for communicating to farmers the benefits of using FDP.

It is also important that these messages were created taking into consideration the local socio-cultural aspects in each area. For instance, the project team created songs about what FDP contains by using popular folk music; this appealed to rice farmers as they are used to this kind of music. As poems and rhymes are easy to remember, they were used to summarize the FDP technique in only a few sentences. Based on the results from the household perception survey which revealed the variety of ethnic minority groups living in each district, the project team adapted the tools to meet local requirements and preferences. For example, in MCC District, where 90% of the population is part of the H'Mong minority, the project recorded FDP songs using the H'Mong language. In Tran Yen songs were composed in the Kinh (Vietnamese) language and were based on the folk music familiar to the farmers in the north delta.

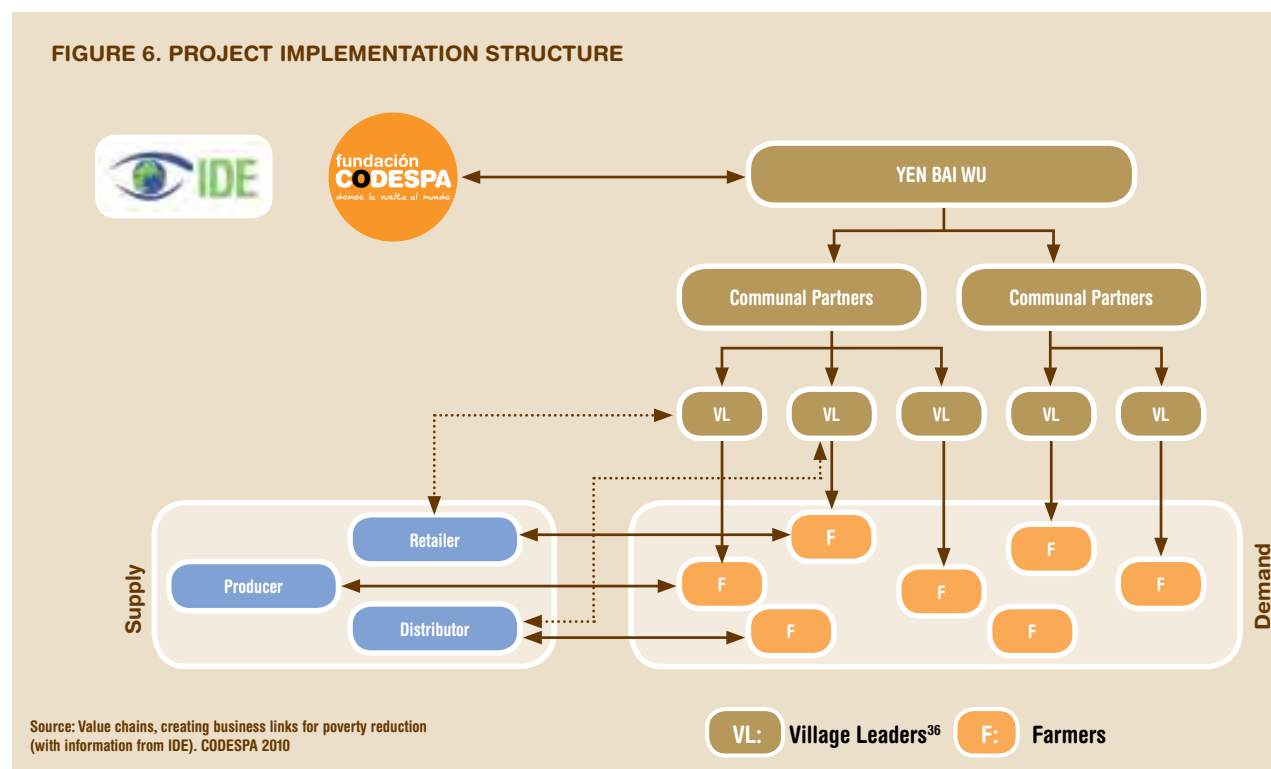
4. SUPPLY CHAIN DEVELOPMENT

“How to deliver the right product to the right place at the right time and for the right price in this vast market?”

As it is shown in figure 6, the project has been successful in creating a new value chain within the already existing one. The project team achieved this by identifying various actors and linking them into a chain made up of input suppliers, machine manufacturers, producers, retailers and distributors, and end users. The strategy of empowering existing supply channels gives sustainability to the project.

The market development activities were implemented in an orderly fashion to ensure that the market demand and supply were well balanced. New suppliers were gradually added to the market according to the increase in demand. In this way, the project ensured that small firms joining the supply chain could be profitable and that they had a sufficient share of the market in the initial stages; the initial stages being when the market was not yet developed and when demand was still fragile. At the same time, it was important to avoid generating monopolies or oligopolies.

FIGURE 6. PROJECT IMPLEMENTATION STRUCTURE



³⁶ Village leaders are voted by the people in the village. Since 1998, in accordance with Instruction 30 on Grassroots Democracy by the Government, the election of village leaders has been carried out in Vietnam.

There are different aspects identified that the project has taken into account to achieve an efficient and sustainable supply chain:

Capacity building to ensure quality and continuity

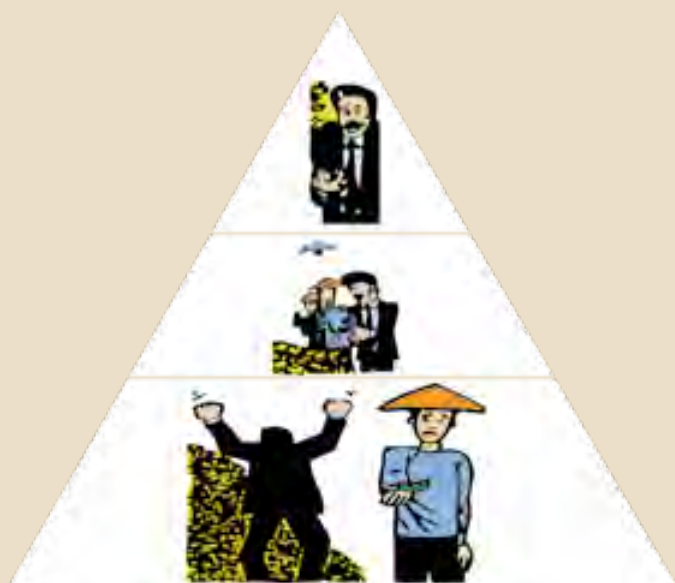
One of the key elements in the supply chain development process was the focus on building the capacity of the whole network to supply pellets in a timely fashion in order to satisfy demand. With the aim of improving the capacity of small business owners, the project provided training on pellet production, starting up businesses and business plan development, as well as basic marketing and management. The training was provided to business owners who had only recently set up their businesses, as well as to those who had already been in business for many years.

Technical assistance provided through a mentoring relationship and in the context of project implementation, has shown itself to be an effective model for capacity building. The staff of the WU PC feel prepared to lead the implementation of the project on from Phase two, partly thanks to the experience they have gained working with the project staff and partly because they have access to the documentation prepared to guide the next steps of the program.

Trapezium model instead of pyramidal model

The business development strategy for production pursued by the project team was to encourage the operation of small production units, to assist local producers and retailers of agricultural products, and to produce and supply pellets for a relatively small geographical area. This was preferred to establishing a large production factory supplying the whole province. Currently there are at least two producers per district and one retailer per commune to accommodate the demands of local households. It could be said that the project did not follow the traditional pyramidal model but rather its structure came to resemble a trapezium as seen in figure 7. Trapezium model.

FIGURE 7. TRAPEZIUM MODEL



CLASSIC

PYRAMID MARKET

Production is controlled by a small group of businesses, which receive the vast majority of market benefits due to their ability to decide oligopolistically where, when, how much to produce and at what price to bring it to the market.

Intermediaries and businesses dependent on the productive company distribute the product with all the logistical complications implied by an exclusively rural area, both in terms of access and in terms of post-sales service and availability of guarantees.

The households depend highly on the distributor and do not have relationships with the productive companies, which creates an important asymmetry of information, where farmers suffer the consequences of their limited negotiating abilities and their lack of access to direct credit and discounts for payment in cash.

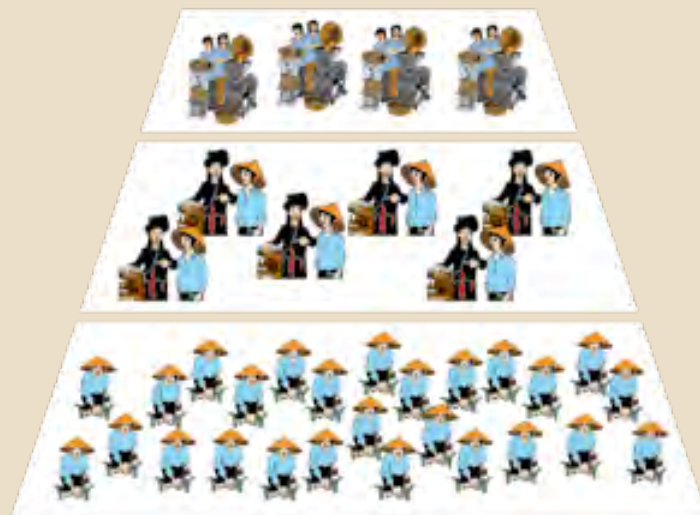
FDP

TRAPEZOID MARKET

The product is universalized, the production is decentralized and small family businesses take on the local demand, ensure access to information and respond to a social responsibility to offer quality and ease of exchange; on this micro level, individual actors sometimes also move between different links in the value chain, so that producers sometimes sell directly to households, collaborators perform as retailers, and everyone plants FDP on their own land, becoming users as well.

The dispersed distribution allows extensive provision networks to be formed, with coverage to each community and each village, including the most isolated mountainous settlements; specialized distributors and collaborators of the WU attend to the household orders and ensure an exchange in time for the start of each planting season.

The FDP implementing homes multiply as knowledge of the product spreads, both in terms of its origin and benefits and in terms of the technical procedures for correct infiltration during the transplanting time; local lines of credit are established, and a degree of trust with respect to job creation and the extensive distribution of benefits that each local FDP market generates is formed.



Generating confidence in actors

When the suppliers were initially reluctant to join the market, as they hadn't yet seen the benefits of the business, the project took on the responsibility of distributing FDP by involving WU members. These members were involved at commune and village level as distributors with a strategy to gradually withdraw. This intervention was necessary in the initial stages to build up market demand by taking advantage of the WU's wide network and trustworthiness. Specifically, a network of Women's Union distributors was set up in order to distribute FDP to farmers during the first crops, especially in remote areas or where private retailers did not exist.

In order to generate confidence in the supply chain, a financial value chain was also developed. This was done to enable the selling of FDP on credit, a factor which was required by the farmers. Producers were assisted in accessing and signing agreements with the Hoang Lien Son Foodstuff Company. These agreements covered the provision of raw materials, which allowed 4 months of credit for 40% of the total purchase. In addition, producers were supported by the WU to access AgriBank and/or the Bank of Social Policies to meet their borrowing needs. As a result, the producers had financial resources to sell on credit to farmers via the WU distributors (90% of FDP sold in the market was on credit).³⁷

³⁷ WU Report on Supply Chain Development, April 2010

Introducing local technology

Initial challenges reported by producers focused on the pellet machines but the project team managed to overcome them. The first machines were purchased from Hue or Thanh Hoa province. This meant that repair services were very far away and the cost of returning the machine for repair was high. So, the project worked with a manufacturer in Yen Bai town to produce machines locally so that producers could establish a relationship with their equipment manufacturer and access repair services more easily. While the first local machines had some defects, the project staff worked with the manufacturer to improve the quality of these machines. The results of this improvement can be seen in the fact that most of the machines purchased by Phase 2 have been made in Yen Bai. The DARD was also providing technical support to Phase 2 of the project and has been working with producers to closely monitor the consistency and quality of production. The DARD samples the production of each batch of pellets produced to test their quality and provides a quality certificate to the producers after the test is passed.

5. BUSINESS DEVELOPMENT SERVICES (BDS)

“Stagnation is not just a lack of ongoing capital”

CODESPA is convinced that a combination of financial credit and operational support is crucial to help entrepreneurs succeed in today's marketplace, regardless of where the micro entrepreneur is competing; any entrepreneur has to have a combination of technical, operational and strategic skills.

Also, it is important to provide BDS in a sustainable manner. This has been achieved by working in consortium with local private and public companies so that when the project ends, the links have been established and the needed assistance continues. Their expertise and know-how could have a high impact on the entrepreneurs' businesses results.

The technical skills come with the commitment, creativity, experience and knowledge they have within their field. The operational skills can often pose a challenge and create the need for support. Finally, strategic skills can take an entrepreneur from the start-up phase to the next level in business management.

Also, it is important that projects include a component to access to credit. Credit is a need for any entrepreneur that wants to start up a business. It is important that development projects incorporate an access to credit component to avoid creating dependence and to allow people to access capital needs.

However, credit is not the only need for new entrepreneurs. Most entrepreneurs believe a lack of ongoing capital is the reason for stagnation within their businesses. While this can be an important factor, a lack of continual operational skills support also plays a strong role in Micro and Small Enterprise (MSE) failure, or in MSEs not reaching their growth potential. As it was already described, the project provided financial support and technical assistance to the pellet supply chain network by strengthening the links between actors, establishing networks and assisting in aspects such as promotional activities, credit and quality.

With the support from the project, business owners could access BDS in the form of loans from AgriBank or the Bank for Social Policies, the packing service provided by private packaging companies, business consulting from consulting and training companies, technical training from agricultural extension stations and the provision of fertilizer inputs on credit from the Yen Bai Agricultural Materials Company³⁸, the main provider of FDP components in the province.

38 <http://www.allcompanyonline.com/company/36/3/13/829799/-Yen-Bai-Agricultural-Material-Co-.html>



Rice field in the Minh Xuân commune, Lục Yên district (summer 2008 harvest).

The project has sought to ensure that access to these services is maintained after the project's withdrawal. In addition, links between actors, such as input providers, producers and retailers, have been strengthened over time as a result of their inter-dependence. In terms of FDP pellet quality control, the project team has cooperated with both the Department of Agriculture and the Department of Finance to try to get FDP included in the list of fertilizers under government management. When this has been achieved the government's quality management system for fertilizers will be responsible for the quality control of FDP. Teams with representatives from the DARD, the police, Market Management and other relevant agencies, will carry out the sampling and analysis of FDP. After passing these tests producers will be provided with quality certificates. However, those who fail to pass the tests will be subject to fines in accordance with Decree 15 of the government, issued in March 2010. This decree on "administrative fines in fertilizer production and business" applies to all fertilizers, including FDP. Furthermore, the DARD has developed instructions for the implementation of Decree 15 in the province.

6. POLICIY PROMOTION WITH THE LOCAL ADMINISTRATION

"Having an impact on public policies"

Designing and implementing policy promotion has been a priority for CODESPA throughout the project. The support of local administrations was instrumental to the success of the project and to ensuring the viability of it being replicated. With this in mind the project team regarded the establishment and development of relationships with the authorities as extremely important. The project received a great deal of support from local administrations and other relevant organizations, thanks in part to the visible impact of FDP in terms of productivity and income. In addition, the project has actively introduced FDP to the local authorities and has tried to integrate FDP into local economic plans. Reports on FDP are periodically submitted to the local

government (i.e. the DARD and People's Committees) and FDP is discussed in local meetings with the DARD, the provincial WU, and the Department of Planning and Investment. Field trips were held for district and commune authorities during which they were briefed and updated on the project's progress; also local high ranking officials were invited to FDP competitions and events. As a result, some districts included FDP in their district socio-economic development resolutions, like Nghia Lo and Tran Yen. The leadership of the MCC and TT districts also committed to include FDP in their 30A program from 2011 onwards, assigning public resources for demonstrative plots instead of subsidizing conventional fertilizers.

It is noted that continued support from local leaders is needed to ensure that a supportive environment is maintained to establish the demand for FDP, to sustain the supply chain and to consolidate the benefits experienced by farming households and communities as a whole. Local leaders in the People's Committees and WUs at commune level can play a role in continuing to encourage farmers to adopt FDP, offering training to farmers and incorporating the promotion of FDP into commune resolutions and celebrations.



FDP producer in the Mường Lai commune, Lục Yên district, producing FDP for the summer 2008 harvest.

7. SUSTAINABILITY

“When all the players are driven by self-interest”

With a market-based approach, a functional, competitive and sustainable FDP market with an efficient production and supply network, as illustrated in Figure 5, has been established in Yen Bai.

- Demand is high enough to be maintained by itself. The number of households adopting FDP reached around 40,000, accounting for 30% of the market. There was evidence of the continued use of FDP and most farmers confirmed that they maintained and expanded areas of land with FDP after the completion of the project, and it is expected to increase the number of FDP users in the near future.
- Supply chain meets the demand and is competitive. The supply network has one machine production workshop, 22 pellet fertilizer production units (including 3 large enterprises at district level), 110 retail shops and nearly 1,000 distributors. This network has sufficient capacity to meet market demand. Most of the pellet producers have implemented a number of marketing and promotional activities by themselves, including the establishment of demonstration models in new areas, the provision of technical guidance for clients and advertising using a variety of different channels. Most of the producers and retailers have confirmed that they maintained and expanded the provision of FDP services after the project withdrew.
- Financial sustainability. FDP provision is a fee-based service and each actor in the value chain benefits from the market. As it was described in the project impact, all actors have increased their income. These benefits have met with the people's expectations and therefore the value chain has been able to sustain itself.
- Institutional sustainability. Rice is a national strategic crop and therefore the replication of technical advances in rice cultivation should involve the government. In Yen Bai the DARD actively participated in FDP quality control and policy promotion. Some districts had even included FDP in the local socio-economic development resolutions such as Nghia Lo and Tran Yen districts.
- Enterprises have access to BDS. Businesses involved in FDP have access to credit supplies, packaging services, business consultancy, technical training, communication services and supplies of fertilizer materials on credit, among other things.

The project designed a strategy to reach this number of households by increasing neither the budget, the amount of time allocated nor the number of activities to be carried out.



The number of households using FDP reached 30% of the market and is expected to increase.

8. STRATEGY FOR SCALLING UP: “Jumping from 500 to 40.000”

The project has been carefully planned and implemented with the strategy being to expand gradually, increasing its geographical coverage and transferring capacity to local partners in three phases:

- Phase one was directly implemented in one district by IDE while also training human resources for the WU.
- In phase two, the responsibility for direct implementation was transferred to the WU which had the objective of expanding the project's coverage into seven other districts; at this stage IDE only took on a consultancy and supervisory role.
- In phase three, the WU took the initiative to expand to the two districts of MCC & TT with a new model to integrate FDP into government poverty reduction programs (i.e. 135, 30A).³⁹

Phase one implemented in Luc Yen paved the way for the subsequent development of the project. During this stage the WU learned about the market-based approach and about the skills necessary to continue the FDP project in phases two and three. This pilot phase also helped IDE adjust the project design according to the local conditions before the next phase. With capacity-building, knowledge and documentation transferred in the first phase, the WU was able to take on the project with confidence and was able to expand it to the whole province in the later phases.

It is worth noting that by taking an innovative and flexible approach in designing the marketing strategies, the project was able to adapt to a client base that increased from the original 500 households to nearly 40,000 households. The project designed a strategy to reach this number of households by increasing neither the budget, the amount of time allocated nor the number of activities to be carried out. To do this, the project team made a comparative study (See Table 7) of various marketing tools and activities. Then they adjusted them to make them more easily scaled up and to increase their effectiveness and efficiency. An activity may be effective for 1,000 households but would not be feasible for 40,000 households due to budget constraints.

Therefore, two different marketing strategies were chosen as being the most effective and efficient and were applied from Phase 2 onwards:

- Intensive marketing: in these communes, a focus on marketing activities designed in Phase 1 were applied (i.e. inviting farmers to TOT and other training sessions)
- Extensive marketing: in these communes, a limited budget was allocated to each commune; the communal WU used this for the printing of promotional materials and advertising via loudspeakers, instead of the more costly marketing activities.

Changes and adjustments to marketing tools were constantly being made to cater to an ever-increasing client base. For example, technical training on FDP was the original focus, but it was decided that change was needed and competitions were organized instead, with the aim of teaching and exchanging knowledge on FDP. These competitions encouraged farmers to become active learners and, importantly, also helped strengthen community solidarity. Overall, effective marketing tools such as a village promoters' network were employed while tools that were seen to be ineffective were removed or adapted. For example, the FDP technical manuals proved to be ineffective because few people actually read them.

³⁹ Program 135 II is a 5-year poverty reduction program during 2006-2010, which targets 1,644 poor and mountainous communes in 45 provinces that are home to the majority of Vietnam's ethnic minorities (see the link: <http://chuongtrinh135.vn/Default.aspx?alias=chuongtrinh135.vn/english>). Program 30A was initiated in 2008 with the issuance of Resolution 30A/2008/NQ-CP of the government, aiming at reducing poverty in 61 poorest districts in Vietnam.

TABLE 7. AN EXTRACT FROM THE ASSESSMENT OF MARKETING ACTIVITIES AND PROPOSED CHANGES⁴⁰ 

CURRENT ACTIVITIES	PROPOSED CHANGES
Technical training on FDP	
Focused training by inviting farmers to training sessions. Participants include demo farmers, users, non users, village leaders, the WU, the Farmers' Union and other key farmers who have prestige in the communities, and who could become promoters for the project.	Develop training methods using mass communication. For example to organize contests on FDP knowledge and skills for farmers, to encourage them to become active learners. Winners will receive awards from the project. Information on FDP can be promoted widely through meetings, via loudspeakers and by using leaflets.
Meetings at the end of the crop period combined with tours to demonstration models	
The purpose of the meetings is to introduce FDP, to encourage farmers to buy FDP and to create a "spill-over" effect. Participants include demonstration households, farmers who live near demonstration models but have not used FDP, village leaders and communal leaders. The meetings are organized at the end of crop periods when the differences between rice yields grown with FDP and non-FDP are clear.	In addition to meetings at the end of crop periods, meetings should be held at the beginning of each crop period when farmers are going to buy fertilizers for their rice fields. These meetings could be combined with the presentation of the technique of deep placement to farmers.
Color leaflets on FDP	
The leaflets are distributed to FDP users on a large scale.	Not many farmers read these leaflets because they were not used to reading them. Also the leaflets were considered to have long texts with large letters so changes of the layout and format are needed. It is recommended that leaflets are distributed after instructions are given to make them more effective.
Posters in the rice fields	
Posters are placed in the rice fields by promoters. The cost of posters is high.	The posters could be printed on cardboard without the need of a wooden frame thus reducing costs.
Pictures and photos	
There are currently only pictures on technical instructions for FDP use.	More pictures and photos should be allocated to all project activities: communications, technical training, supply chain development, policy promotion, M&E and capacity building.
Packaging	
Some producers simply put FDP in a bag without labels or instructions	It is necessary to support the producers to print instructions on FDP use on the bags.

Source: Project progress report and calculations from project database as of October 2010.

40 Comparative study of marketing tools efficiency and activities impact. IDE, 2007 [http://chuongtrinh135.vn/Default.aspx?alias=chuongtrinh135.vn/english/Program 30A](http://chuongtrinh135.vn/Default.aspx?alias=chuongtrinh135.vn/english/Program%2030A) was initiated in 2008 with the issuance of Resolution 30A/2008/NQ-CP of the government, aiming at reducing poverty in 61 poorest districts in Vietnam.



PART 4

Conclusions and recommendations





PART 4. CONCLUSIONS AND RECOMMENDATIONS

1. Phased market withdrawal and public/private functions

The project has clearly demonstrated that investments in advertising, marketing and proactive promotion strategies can create strong demand for new products and services, even in weak markets with a relatively poor customer base. Critical market functions such as creating demand through advertising and promotional campaigns can be justified as a “public good” and therefore be subsidized until the stage when the market is achieving a relative balance between supply and demand. So the creation of demand through marketing campaigns may need to remain a function supported by the public sector, being only gradually transferred to private sector actors in the value chain. This state of affairs should be closely monitored by the project team members and leading partners such as the WU, AES, and the DARD.

Clear benchmarks and limits have to be set to facilitate the gradual transfer of marketing responsibilities to retailers and distributors, as they emerge and expand their share of the FDP market. Training and capacity building activities for private sector enterprises have been carried out but efforts in this area must be doubled to help the private sector take on all of the production and business activities.

Though the market has been established, continued support from the local government would still be required after the project is withdrawn. The local government's role in this context is crucial, especially as the WU is not actually a functioning government agency. So a transfer of project management responsibilities would have to be undertaken by the project partners, the IDE and the WU, to local and specialized government agencies such as the DARD and the People's Committee. This is part of the project's exit strategy consisting of 3 phases:

- The transfer of responsibilities and capacity from IDE to the WU, with gradually less direct intervention and a greater role in monitoring and supervising, leaving the WU to directly implement project activities.
- The transfer of the role of distributing FDP pellets from the WU to private sector actors; this phase has already been implemented.
- The promotion of the creation of policies and the transfer of FDP market management to government agencies. According to the DARD, the project team could organize study tours for provincial leaders so that they might see more clearly the benefits of FDP and integrate FDP into provincial economic strategies. With the endorsement of provincial leaders, meetings between provincial and district leaders could be convened so that local district leaders are more willing to integrate FDP into the current policies and resolutions of their localities.

With this exit strategy, project activities would not be necessary when the market is fully functioning. Also to be mentioned is the specific exit plan for lowland districts that has been designed and implemented by the project between July and September 2010. This exit plan involved:

- Organization of meetings to transfer the project to the provincial and district People's Committees.
- Organization of meetings with district branches of the WU to agree on the gradual handing over of the distribution role to the private sector and also on how to assist private sector retailers to participate in the market.
- Organization of meetings with potential producers and retailers to encourage their participation.
- Printing of training and promotional materials to distribute to all stakeholders in order to facilitate communication and the organization of training activities.
- Building cooperation between producers, retailers and distribution agents.

2. Solid communication strategy to integrate the promotion of the FDP project into local public policies

Market functions, particularly in weak markets, are well known to take a minimum of three to six years to develop before all external support from donors can be withdrawn. Experience from the FDP project to date suggests that despite encouraging signs of progress, the FDP market in Yen Bai is not yet fully self-sustaining and some market functions, such as advertising and market promotion, may require continued support. CODESPA's current support provided during one crop season may not be sufficient to allow a market developed around FDP to take root. As a minimum, external support should be provided during at least two crop seasons, before the phased withdrawal of public support begins. Again this highlights the importance of the role of the local government in integrating FDP into their agricultural development strategies and allocating part of their budget to the development of FDP.

It is clear that a greater effort needs to be made to promote the issuing of policies that favor FDP. Policies should be formulated that:⁴¹

- Encourage the development of the FDP market in Yen Bai by integrating FDP into government programs and the programs of other international organizations in the area.
- Encourage enterprises to participate in the production and distribution of pellets by creating good conditions for enterprises to start up and develop. For example, by providing preferential credit for these enterprises or a tax reduction/exemption for the first crops harvested.
- Find solutions for farmers to help them buy pellets on credit. This could involve supporting the enterprises that sell pellets, so that they can then do so on credit or providing access to loans for farmers to purchase pellets.
- Mobilize more people to adopt FDP, disseminating information in a systematic way through government channels, or launching a campaign to mobilize civil servants and members of the government to pioneer the technology.
- Coordinate among mass organizations and international programs operating in the same area to avoid overlapping. For example, instead of giving pellets to people for free, the government can support enterprises to carry out sales promotion. This will strengthen the relationship and trust between actors working on both the supply side and the demand side, creating a good environment for pellet purchases to continue after the project ends.

⁴¹ IDE Progress Report Sep. 2010

3. WU Dual Role: Market Facilitator & Service Provider

The ubiquitous presence and outreach of the WU into distant rural hinterlands, as well as their invaluable role as both market facilitator and service provider has been a key contributor to the project's success. While the development of the market could not have been achieved without their work, inevitably the WU must operate simultaneously as both service provider and market facilitator. As already mentioned, the WU has a comparative advantage in relation to private sector entities, particularly in the more remote rural areas, due to their extensive ongoing presence and cultivation of longstanding relationships with farmers throughout the country. Small-scale entrepreneurs, who may not be intimately familiar with many rural communities where they operate, lack the strong relationships with customers and the knowledge of customers that the WU possesses. At the same time the success of their businesses must rely on volume of business to achieve economies of scale, in order to make a reasonable profit.

Farmers made it clear that the WU is better able to absorb the costs related to purchasing in bulk, distribution, and the sale of FDP, than a small-scale business. This is due to their logistical presence, efficiency in distribution from the district to communal and village level, and their ability to organize and collect purchase orders within a relatively short period of time. This allows them to efficiently match supply with demand, and to quickly move FDP to more inaccessible rural areas. Furthermore, the WU has been able to arrange with producers to provide credit to farmers, while not many retailers have been able to do the same. As a result of this, the worst fear of some of the farmers interviewed was that the transfer of all market functions to the private sector will inevitably lead to increases in the price of FDP and to difficulty in accessing credit from retailers.

With this in mind, the project team has built a network of private retailers in Yen Bai. Some of these retailers are also WU members, but they serve in a private sector capacity. However, they still benefit from links with existing networks of FDP producers and from access to the distribution infrastructure already in place. As the project comes to an end, the distribution and retail functions should gradually be transferred to private sector agents, as part of a clear exit plan for the withdrawal of the WU distributors from the FDP market.

CODESPA remains open on the question of if and when the WU should relinquish its role as the market service provider in distribution and retailing as long as other actors are existing in the market, competing and providing the same service. This is because of the benefits that the strong position of the WU currently provides to other actors in the value chain. However, CODESPA takes the view that the WU may only continue as one of the many FDP providers as long as private sector players are provided equal opportunities to compete. These actors, such as private retailers, other mass organizations (i.e. the farmers' union, the youth union), cooperatives, and village leaders, must be given the opportunity to be a market service provider in both the fields of distribution and retailing.



The WU has a comparative advantage in relation to private sector entities, particularly in the more remote rural areas, due to their extensive ongoing presence and cultivation of longstanding relationships with farmers throughout the country. However, the distribution and retail functions should gradually be transferred to private sector agents, as part of a clear exit plan for the withdrawal of the WU from the FDP market.

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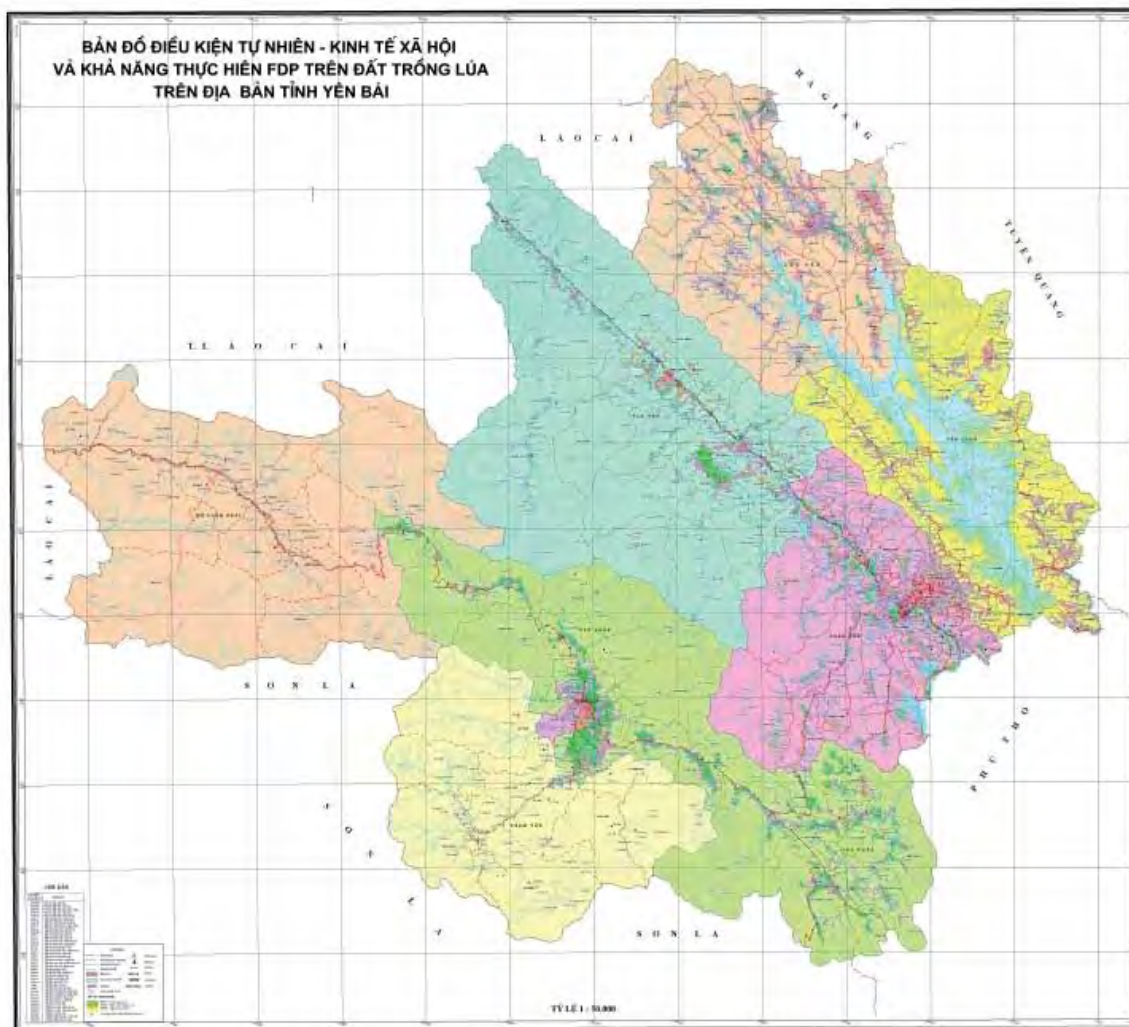
For more updated information about the project, visit www.codespa.org or contact the CODESPA office in Hanoi at vietnam@codespa.org

Appendices





APPENDIX 1. LAND MAPS OF FDP DISTRIBUTION IN YEN BAI PROVINCE, MAY 2010



■ FDP cultivated area

Source: CODESPA

APPENDIX 2. FDP PROMOTION MATERIALS USED FOR RURAL MARKETING ACTIVITIES



APPENDIX 3. DATABASE MANAGED BY THE PROJECT FOR ON-GOING MONITORING AND EVALUATION (M&E)

City	Year	District	Total house- holds	Gr. HH Poor Adaptive to FDP	Dry Yield (kg) FDP	Dry Yield (kg) FDP	HH Average net additional income (\$)	Average % share of FDP net HH	Total HH Average net additional income	Average net additional income	Gr. HH Product- ers	Net income FDP producers	Gr. FDP relations	Net income- FDP relations	Gr. FDP distributions (VNU)
Vu	Năm	Huyện	Tổng số hộ áp dụng FDP	Số hộ nghèo áp dụng FDP	Năng suất khô sạch rừng FDP (kg/ha)	Năng suất khô sạch rừng ĐC	Thu nhập rừng thêm trung bình của hộ gia đình	Trung bình số sao hộ	Thu nhập trung bình của hộ	Thu nhập rừng thêm trung bình đầu người	Tổng số nhà sản xuất phần vườn	Thu nhập rừng của nhà sản xuất phần vườn	Tổng số người bán lẻ FDP	Thu nhập rừng của người bán lẻ FDP	Tổng số đại lý FDP (HPN)
Spring	2010	Nghĩa Lộ	2.119	224	287	243	380.825	3,06	1.164.553	211.817	2	111.535.945	6	3.784.000	71
Spring	2010	Yên Bình	3.836	553	259	242	136.398	1,00	136.398	24.797	2	61.533.917	18	10.908.000	166
Spring	2010	Trần Yên	3.559	362	231	205	177.487	1,32	233.458	42.447	2	88.705.234	10	1.475.000	147
Spring	2010	Lục Yên	8.074	2.710	NA	NA	N/A	1,86	-	-	8	363.537.734	35	17.785.000	237
Spring	2010	Văn Yên	4.612	285	258	208	351.720	1,06	371.428	67.532	2	24.344.841	9	4.105.000	161
Spring	2010	Yên Bái	720	15	204	163	270.659	1,02	274.460	49.902	1	(10.837.205)	3	410.000	35
Spring	2010	Văn Chấn	8.339	2.498	277	237	320.154	1,46	466.493	84.817	1	100.842.467	20	18.160.000	183
Spring	2010	Hà Giang	280	-	NA	NA	N/A	2,05	-	-	-	-	2	2.000.000	-
Summer	2010	Nghĩa Lộ	2.300	540	NA	NA	N/A	3,58	-	-	3	95.113.567	6	7.584.400	60
Summer	2010	Yên Bình	4.259	1.043	NA	NA	N/A	1,57	-	-	2	98.224.217	18	28.107.600	150
Summer	2010	Trần Yên	5.230	1.051	NA	NA	N/A	1,78	-	-	2	231.421.063	10	3.781.200	137
Summer	2010	Lục Yên	9.524	2.381	NA	NA	N/A	1,89	-	-	9	420.492.009	36	63.823.200	211
Summer	2010	Văn Yên	4.563	596	NA	NA	N/A	1,03	-	-	2	6.066.308	9	12.669.600	160
Summer	2010	Yên Bái	817	30	NA	NA	N/A	0,50	-	-	1	(2.469.850)	3	802.800	35
Summer	2010	Văn Chấn	10.789	3.269	NA	NA	N/A	2,06	-	-	2	299.977.300	20	65.020.600	163

OTHER CODESPA PUBLICATIONS

I. CODESPA SYSTEMIZATION OF KNOWLEDGE



Bringing work home.

How to generate rural self-employment for people with visual disabilities in Honduras through pork production. CODESPA, 2011

This publication systemizes the knowledge gained from a collaborative project between CODESPA and PROENOVIS in Honduras in which a pork supply chain was successfully externalized, creating work and income-generating opportunities for a rural population with visual disabilities in a situation of poverty and marginalization. The objective of the systemization is to share the process, its results, lessons learned and challenges so that other development actors (including businesses and NGOs) can replicate it in other contexts. The project is innovative in that it allowed these people to access work without the need to leave their homes and in that it was directed toward an uncommon target population with respect to income-generating projects of development cooperation.

Best practices manual for tourism activities.

Municipality of Copacabana. CODESPA, 2010

Directed toward tourism micro businesses, the objective of this manual is to present best practices and methods that improve current operative management and lead to the development of sustainable tourism and environmental conservation. In this way, fundamental benefits can be gained from sustainable tourism: improvement in the quality of life of the host populations, offer of a high-quality experience to the visitors and conservation of environmental quality, on which the involved actors depend (local populations, visitors and businesses). This manual is a product of the collaboration between CODESPA Foundation, the municipal government of Copacabana and the Apthapi Community Tourism Network of Lake Titicaca within the framework of the Competitive Development Projects of Rural Tourism in the Andes and the Tourism Activity Legislation in the Municipality of Copacabana.



Social innovation in microfinance.

Development methodology for new products: Micro insurance 3x1 and loan for business creation of ADOPEM. CODESPA, 2010

In this publication, the development process is described and analyzed for new microfinance products resulting from a remittance bancarization project that had the objective of improving the quality of life of Dominicans through microfinance services and productive investment linked to remittances. Thanks to this project, a micro life insurance product costing only 4 Euros per year and an integrated business creation loan and business training program were successfully developed.

Value chains.

Creating commercial links for the eradication of poverty. CODESPA, 2010

This document was created in response to the reflections and demonstrated experiences exposed during the forum organized in Madrid during December 14 and 15, 2009 by CODESPA Foundation with the collaboration of Madrid City Hall and the Spanish Agency for International Development Cooperation (AECID).



II. PUBLICATIONS, REPORTS and WORKING PAPERS



Institutional strengthening of civil society for public action and democratic governance in the development context.

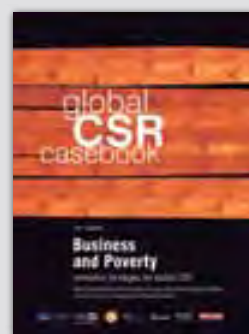
Delamaza, Gonzalo, CECOD Series, 2010

This work tackles the demands, dilemmas and challenges of compromise between civil society and public authority organizations in the context of development, for the obtaining of the goals of deepening democracy, the surmounting of poverty and greater social inclusion. Civil society is conceptualized as an agent of "the public, not the state"; experiences and examples of action agreed on for overcoming social problems are revised, and conditions for the effectiveness of this type of experiences are established. The work ends by formulating a set of conditions and requests for better agreement for democratic governance in the context of development; various recommendations for cooperation towards development, and other necessary distinctions according to the objective of civil society participation in spaces of compromise.

Business and Poverty: Innovative Strategies for Global CSR.

CODESPA and ICEP, 2009

This publication describes nine best practices case studies of European businesses involved in the fight against poverty through a global CSR strategy. Organized by CODESPA in collaboration with the European Commission and ICEP Austria and the support of IESE and Boston Consulting Group.



PRISMA social performance report, Perú.

BBVA CODESPA Microfinance Fund

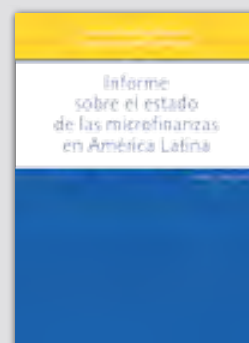
These reports are examples of CODESPA Foundation's work with the promotion of social performance in the microfinance sector.

The participation of CODESPA within the BBVA CODESPA Microfinance Fund consists in the periodic production of social performance reports of NGOs and MFIs in South America and Central America that receive financing from the Fund. These reports provide social information to the investors, while promoting the social mission of the Fund and the incorporation of social performance indicators (not only financial performance) in the management of the MFIs.

Report on the state of microfinance in Latin America.

This report forms part of the work that CEAMI does in collaboration with MicroRate and the BBVA sponsorship.

"The state of microfinance in Latin America" is developed every two years, examining in depth one of the countries in the region. The objective of the report is to become familiar with the advances of the microfinance sector in the Latin American region.





Capacity building and development support from the ground up: the experience of RedAmérica.

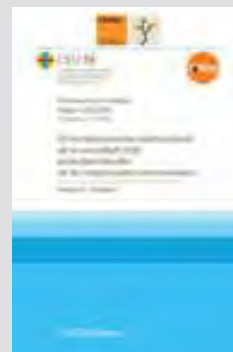
VILLAR, R. CECOD Series, 2009

Foundations and development assistance agencies have prioritized projects that provide direct services or goods with the assumption that those projects are better suited for poverty alleviation purposes. From a different perspective, grassroots development proponents assume that in order to participate in development, poor people need to strengthen their voices and their organizations. Organizational capacity building therefore is central to any project in grassroots development. This working paper analyzes the implication that grassroots development has for the interventions of the different actors in the development chain (grassroots organizations, foundations, development assistance organizations). In the analysis the author uses the example of RedAmérica, a network of sixty corporate foundations that support grassroots development in Latin America.

Institutional strengthening of civil society: the main challenge of International development.

DAUBÓN, R.E CECOD Series, 2009

For six decades international development assistance has operated under an assumption that attributes underdevelopment to essentially economic causes and has designed and implemented corresponding measures, with disappointing long-term results. Assistance agencies have begun to realize this weakness, to explore broader causes for underdevelopment and to search for more comprehensive solutions. This working paper summarizes the history of development assistance and offers an explanation and possible approach to the problem, based on a new donor-beneficiary relationship, a different concerting mechanism, and finally by investing in social capital and capacity building as key factors for the sustainability of the interventions.



III. TECHNICAL NOTES ON DEVELOPMENT



European Volunteering Year: an opportunity for the social involvement of businesses. February 2011

Institutional strengthening. Rural community tourism competition in the Andes in Bolivia, Ecuador and Peru. January 2010

CSR and the stockholders' role in American businesses. December 2009

That microfinance does not lose its opportunity. June 2009

The five stages of CSR. From defensive positioning to business integration strategies as a sustainability axis. December 2008

Strategic relationships between NGOs and businesses. Alliances for development. November 2008

Business and development. November 2008

MORE INFORMATION ABOUT CODESPA

In Spain and in Europe, CODESPA develops initiatives to encourage training, awareness and research concerning topics related to development cooperation and the effectiveness of aid in the reduction of poverty.

The Research and Social Innovation Department is in charge of launching these initiatives in Spain, in terms of the creation of spaces (forums, conferences, workshops, etc.) that foster reflection and dialogue which can advance these fields.

Similarly, the department leads knowledge management of the organization, implementing and coordinating the systemization processes of CODESPA experiences to extract the lessons learned and improvements that lead to deeper impact of the in-country interventions.

This knowledge systematization bears forth CODESPA's publications, which are specialized in the development field (microfinance, Corporate Social Responsibility for Development – CSR+D -, institutional strengthening, etc.). Through these publications, CODESPA shares its knowledge with different development cooperation actors.

Finally, CODESPA develops projects using the latest development cooperation innovation and works together with the private sector, designing projects that allow the business to become a directly involved actor in the fight against poverty.

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