

The Value Initiative

Advancing urban value chain development to help millions of people work their way out of poverty.

Value Initiative Program in Indonesia

AUTHOR

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ports cases study

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About SEEP

The SEEP Network is a nonprofit network of over 130 international organizations that believe in the power of enterprise to reduce global poverty. SEEP members connect in a global learning community to increase their impact in over 170 countries, where they collectively serve over 89 million micro-entrepreneurs and their families. Through SEEP's learning initiatives, microenterprise development practitioners co-create and exchange strategies, standards, and tools for building healthy economies with a sustainable income in every household.

www.seepnetwork.org

About The Value Initiative

From 2008 to 2011, with support from the Bill and Melinda Gates Foundation, The SEEP Network's Value Initiative advanced the knowledge and practice of urban value chain development to stimulate sustainable, large-scale, and poverty reducing economic growth, with a special focus on vulnerable populations. The \$6.5 million Value Initiative has two core Practitioner Learning Programs (PLPs): 1) Urban Value Chain Development and 2) Business Planning for Sustainability and Scale-Up.

Urban Value Chain Development

Although value chain development represents an innovative and systematic approach to address poverty, best practices for urban settings have yet to be well defined and broadly disseminated. In response to this need, the Value Initiative provided technical assistance with three-year grants to four demonstration programs in Kenya, India, Indonesia, and Jamaica. The SEEP Network facilitated capacity building, peer learning, and supported knowledge management process and research to advance and build the industry capacity in urban value chain development. The four Value Initiative Programs (VIPs) were implemented with the following partners.

Program Name	Lead Organization	Partner Organizations	Sub Sector	Location
VIP India	ACCESS Development Services	<ul style="list-style-type: none">• Jan Kalyan Sahitya Manch Sansthan (JKSMS)• Rajasthan Abhyudaya Sansthan (RAS)• Jaipur Jewelers Association	Jewelry	Jaipur, India
VIP Kenya	Academic Model Providing Access to Healthcare (AMPATH)	<ul style="list-style-type: none">• Export Promotion Council (EPC)• Fintrac	Passion Fruit	Eldoret, Kenya
VIP Jamaica	Jamaica Exporters' Association	<ul style="list-style-type: none">• The Competitiveness Company• Area Youth Foundation	Ornamental Fish	Kingston, Jamaica
VIP Indonesia	Mercy Corps Indonesia	<ul style="list-style-type: none">• Swisscontact• PUPUK	Tofu & Tempeh	Jakarta, Indonesia

Business Planning for Sustainability and Scale-Up

The Value Initiative partnered with five organizations to foster learning on innovative business models for sustainable, larger-scale enterprise development reaching a wider target group of marginalized communities:

- Entrepreneurship and Community Development Institute (Pakistan)
- Fair Trade Forum (India)
- LabourNet (India)
- SDC Asia (Philippines)
- KeBal/Mercy Corps (Indonesia)

For more information about the Value Initiative, including tools, additional learning products, photos and videos, please visit www.seepnetwork.org or contact Yibin Chu, Program Manager of Enterprise Development Community of Practice at chu@seepnetwork.org.

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Summary



Modern Jakarta in background with middle-class housing in the foreground (top) and slums (bottom).



Traditional tofu factory and equipment with wood fire (above) and modern stainless steel vat (below).



Greater Jakarta, Indonesia, is a megalopolis of 25 million people that includes Jakarta, Bogor, Depok, Tangerang, and Bekasi. It is a thriving hub of economic activity and its informal sector is one of the economic engines of the city, employing roughly 40 percent (4 million) of the urban workers. Many of these workers live in slums, barely earning enough to survive, linked together by complex social networks, based on their communities of origin, and through sophisticated business networks based on informal reciprocity.

The Value Initiative Program in Jakarta, Indonesia (VIP-Indonesia), introduced cleaner production technology to thousands of tofu and tempeh producers in Greater Jakarta between 2009 and 2011. The value chains for tofu and tempeh (staple foods made from soy beans) exemplify many urban, informal-sector industries. They operate outside regulations with little support from government or economic development initiatives, and offer easy-entry jobs with poor working conditions. Yet they provide a living to hundreds of thousands of people who support each other through social ties based on their community of origin.

VIP-Indonesia took on the challenge of strengthening the tofu and tempeh value chains, which primarily provide affordable food to customers with low-to-moderate incomes. Rather than help a few better-off producers reach high-value markets, the program chose to upgrade fundamental production processes on a mass scale, a strategy designed to benefit large numbers of lower-income producers, traders, and consumers. The upgrade was marketed as “cleaner production,” which included introducing stainless steel vats and boilers, gas cookers, and other modern equipment; and applying more hygienic and environmental production practices. The project helped producers access equipment financing for the upgrade.

The immediate benefits to producers included reduced fuel costs and higher productivity; the benefits for employees were improved working conditions with a cooler (lower ambient temperature), smoke-free environment. The added environmental plus was cleaner air and better waste-water management for the neighborhoods around the factories. Producers adopting the new technology reported higher income, compared to non-users, particularly due to reduced fuel costs and higher labor productivity. The project partners valued the improvements in working and environmental conditions and were satisfied to have found economically sustainable ways of introducing these kinds of improvements into the informal sector.

Strategy

VIP-Indonesia employed a dissemination strategy common in the promotion of agricultural technologies in rural areas—practical demonstrations hosted by community leaders that spread the work through traditional social networks. At the same

time, the project facilitated sustainable commercial relationships to deliver the technology, including finance, equipment, and related installation and training services. The project engaged lead tofu and tempeh producers to demonstrate cleaner production in their factories. These same leaders founded the urban tofu and tempeh communities some 25 years ago: they sponsor workers to migrate to the city and they support workers as they grow into entrepreneurs or simply raise and educate their families. Through these tight business and social communities, the results from the demonstrations stimulated demand.

To support sustainability and scale-up of the many small tofu- and tempeh-producing clusters in the city, the project facilitated linkages between equipment suppliers, newly established distributors, and a leasing company. The Ministry of Environment trained the first cohort of distributors. As a result of this intervention, the distributors, entrepreneurs, and cooperative leaders market clean production packages to producers, using the “lead producer and demonstration factory” approach. The distributors receive orders, purchase equipment from one of several manufacturers, arrange financing through a private leasing company (if the customer desires), install the equipment, and train the producers in cleaner production. Currently, the Mercy Corp team is contemplating how additional distributors can be trained, post-project.

The lease financing was offered by a medium-sized firm, SNP Finance, which had experience in leasing equipment to registered, formal firms, but not to informal-sector businesses. To guarantee the financing, either the cooperative or the distributor agrees to repossess the equipment and take over the lease in case of nonpayment. To jump-start the market, VIP-Indonesia subsidized an introductory discount for one component of the package, but has since phased out this subsidy. The market for cleaner production technology is now expanding on its own.

Results

The VIP-Indonesia team estimates that the program reached over 30,000 households in tempeh and tofu producing clusters. Around 8,700 were producers or workers whose income and/or working conditions improved as a result of access to improved technology, which was purchased by an estimated 2,600 producers who own factories. Because of the structure of the tofu and tempeh production enterprises, when one producer purchases improved technology, an additional 2.3 individuals benefit as factory renters or workers. The remaining households either benefited from reduced pollution in their community (8,000) or received information about the benefits of cleaner production and no-cost improvements they could make, and how to access improved technology.

On average, tofu producers who owned their facilities and purchased the new technology promoted by the program reported an income gain of nearly USD 600 more annually than other tofu enterprises. Similarly tempeh enterprise owners who embraced the new technology—reported annual income increases of more than USD 100 on average than other tempeh enterprises.

The VIP-Indonesia team helped build a sustainable and expanding market system that engaged—in innovative ways—traditional social networks, formal and informal enterprises, cooperatives, and government institutions.

Lessons Learned

VIP-Indonesia’s experience offers a number of key lessons for value chain development and urban development practitioners:



One of many meetings to engage diverse partners in the tofu and tempeh sector.

1. There is significant overlap in methodologies between rural and urban value chain development, but in urban areas one might expect to find fewer opportunities for subcontracting, more opportunities for selling to urban residents with low-moderate incomes, and more opportunities for partnering.
2. Urban services and urban development benefits—such as reduced pollution, improved working conditions, or food security—can be addressed through economically-driven value chain development. There are some strategic choices, however, that support this kind of development, for example, which markets to target and which services to promote. In addition, to enable the market to “sustain” the delivery of social benefits, there has to be sufficient financial benefits to drive the different businesses involved.
3. Urban social networks can be effectively leveraged to disseminate improved technology or other business services.
4. Innovative combinations of public, cooperative, and private sector service suppliers can support sustainable market development, depending on the context. In this case, the public sector provided the “core” technical expertise, which was transferred to entrepreneurs, who leveraged the presence of the cooperative for information dissemination and loan guarantees.
5. Equipment leasing can be a viable source of value chain finance, even when the equipment is very simple and low-cost. Distributors can aggregate demand and reduce risk through guarantees.
6. Reaching vulnerable populations in urban value chain development, in some cases, involves integrating workers explicitly into the value chain development strategy. For example, VIP-Indonesia promoted “cleaner production” technology in part due to its benefits to workers, who are the lowest income group in the tofu and tempeh value chain. It may also involve starting the project with lower impact and easier access interventions, and thereby targeting mid-low value, high volume, geographically close markets for basic commodities.

If VIP-Indonesia had focused on high-value markets, only a few of the most advanced producers would benefit, given the complexity of producing high volumes, of meeting cleaner production standards, and of producing and packaging more complex products. The profits to those business owners would have been higher, but the number of workers benefiting from improved working conditions and the number of consumers with access to more hygienic food would have been much lower.

7. Finally, good execution and teamwork among a diverse set of professionals is critical to success. VIP-Indonesia was implemented by a consortia led by Mercy Corps Indonesia, which included Swisscontact, an international NGO with extensive expertise in rural value chain development, and PUPUK, a leading Indonesian non-governmental organization (NGO) in enterprise development. The three organizations formed one operational team by having Swisscontact and PUPUK second staff to Mercy Corps, whose expertise in this situation was in urban community development. This effective management arrangement built mutual capacity and facilitated seamless implementation. Certainly key success factors in this initiative are the deep and diverse skill set, the innovation, the dedication, and the solidarity of the implementation team and its advisors.

Key Learning Questions of VIP-Indonesia

The VIP-Indonesia team—Mercy Corps, Swisscontact, and PUPUK—explored urban value chain development in the tofu and tempeh value chains,¹ focusing on these key questions:

- What are the similarities and differences in developing urban informal value chains, compared with more formal, agricultural export value chains?
- How can urban social networks be leveraged for effective enterprise development?
- What is the potential for commercialization and growth of informal urban enterprises that generally operate at a subsistence level in a very competitive environment? Are there opportunities for improving environmental and working conditions, and benefits to workers, in the process?
- Can urban value chain development be leveraged to address urban growth issues, such as pollution from informal sector production?

The Tofu and Tempeh Value Chains

Tofu and tempeh have become staple foods in Indonesia, due to their high nutrient content, low price, and good taste. Tofu and tempeh are widely available in many forms, both fresh and cooked by restaurants, informal market stalls, and mobile carts. The tofu and tempeh value chains share similar opportunities, strengths, and constraints:

- Tofu and tempeh are in high demand by a wide range of consumer groups: high and middle income, working class, and very poor.
- Tofu and tempeh are a critical source of food security for people living in poverty.
- The tofu and tempeh production sector in Jakarta is large, with 150,000 businesses that employ approximately 285,000 workers (women make up 40–50 percent) and generate revenues of USD 78 million per year.
- There are diverse types of businesses for both tofu and tempeh (see figure 1). Large, medium, small, and micro enterprises produce tofu, including factory owners and
- producer-renters who pay the factory owners to use their facility. Both tofu and tempeh value chains offer employment opportunities, and producers of both sell raw and cooked products through wet markets, and mobile food vendors, informal market stalls, small grocery shops, formal restaurants, and sometimes wholesalers in different parts of the city.

¹ Initially, the VIP Indonesia team focused on high-value products (snacks) and formal markets (supermarkets and institutional customers), which is typical of value chain development programs. Because of its focus on poverty reduction and on learning, the team refocused on middle- and lower-class consumers. The team hoped that this strategy would more easily engage large numbers of less-elite producers, benefit lower-income consumers and workers, and offer lessons for increasing food security.

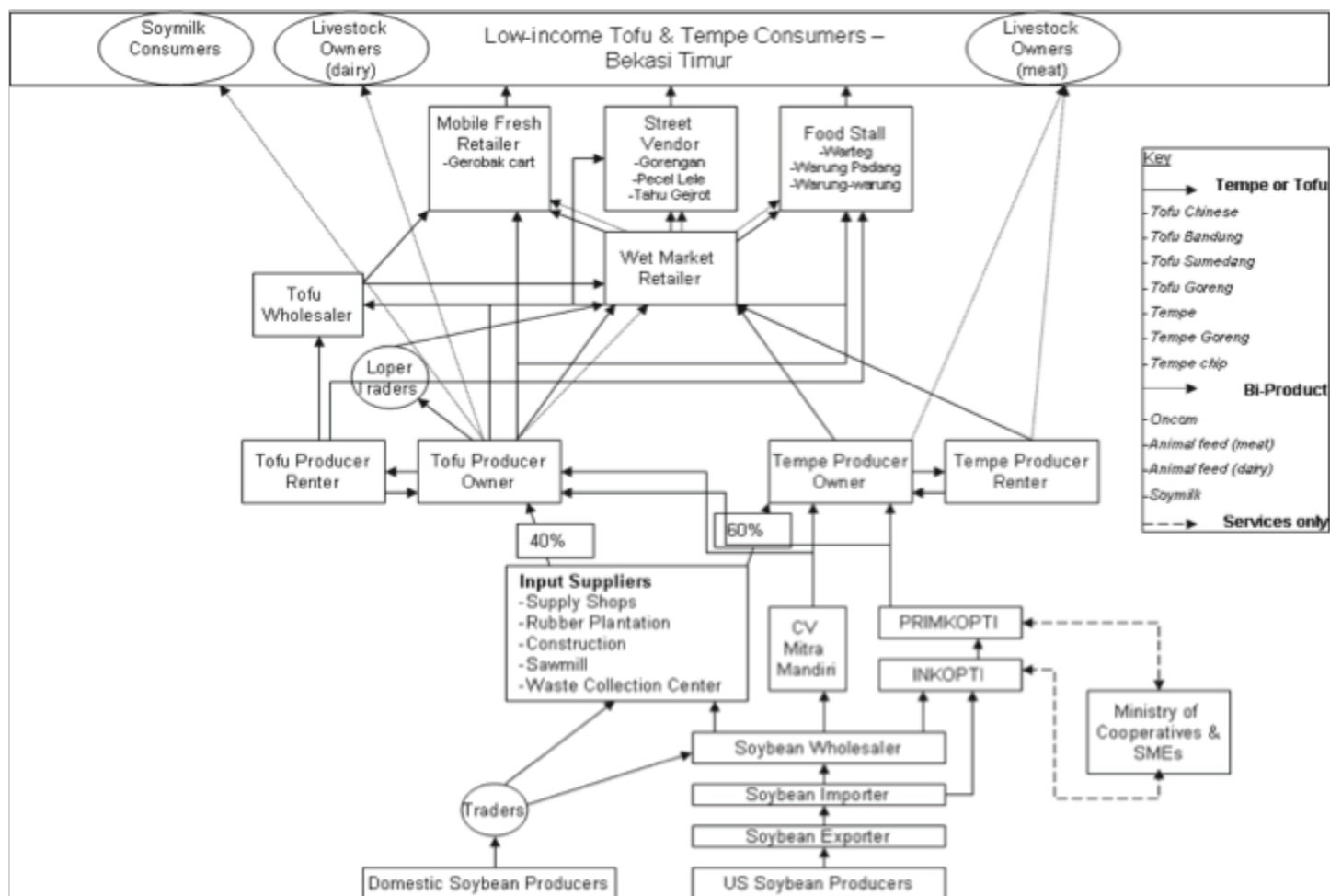


- The tofu and tempeh value chains engage vulnerable people: they employ people with limited formal education and migrants new to Jakarta. They generate income that workers send home to more poverty stricken rural areas. Most of the producers, even if they are economically stable or well off, operate in the informal sector without legal protection from harassment or displacement.
- The tofu and tempeh value chains are a microcosm of the street food sub-sector. Challenges include hygiene, unsafe production practices (such as adding formaldehyde to prolong shelf life), pollution, unsafe working conditions, low productivity, low undifferentiated quality of products, and harassment by officials and “gangsters” who “protect” streets and markets (a particular problem for street vendors).
- The tofu and tempeh sector is dense with social networks and rural-urban linkages. Many workers in the tofu and tempeh value chains follow family traditions that are often rooted in their ancestral villages in East or Central Java.



Typical informal tofu and tempeh sales outlets: bicycle vendor (top left) street cart vendor (middle) and; tempeh (bottom left) vendors and wet market stalls of tofu (above).

Figure 1 Greater Jakarta Tofu and Tempeh Value Chain Value Chain Map



VIP-Indonesia’s Goal and Strategy

VIP-Indonesia’s basic goal was to increase income, improve working conditions, and diminish the negative environmental impact for 15,200 tofu and tempeh enterprise owners and workers in Jakarta, while providing safe, affordable food to consumers in Jakarta. Like other value chain development programs, it worked through private enterprises to generate benefits for its target enterprises—tofu and tempeh producers and vendors—and through them, the vulnerable workers in this sector. VIP-Indonesia crafted innovative combinations of public, private, and cooperative service providers to reach the enterprises and increase their production, productivity, and income. The program was also designed to generate sustainable and widespread benefits for workers and other more vulnerable groups in the value chain (table 1), most notably improved food safety for urban consumers.

Table 1 Vulnerable Program Beneficiaries

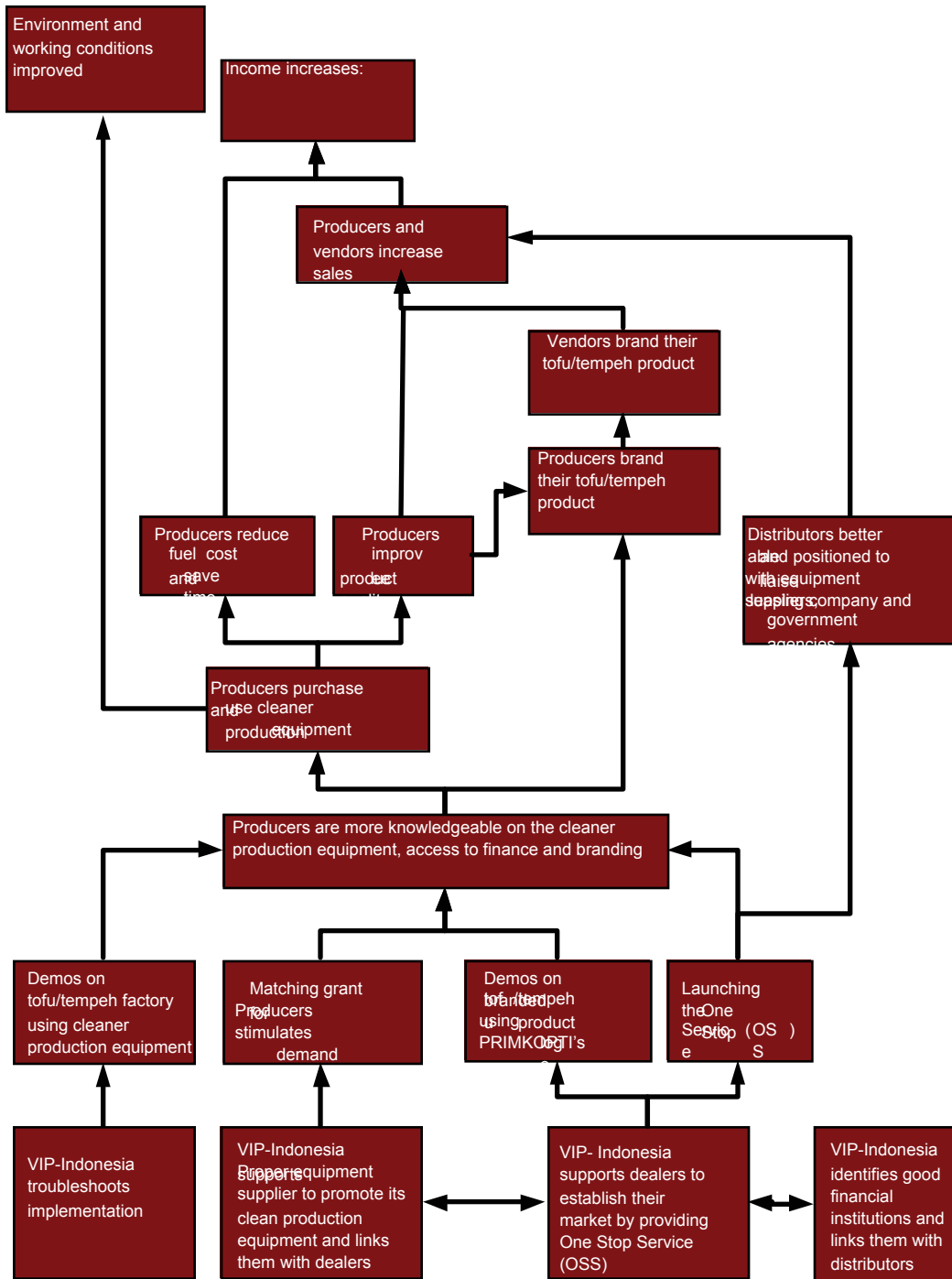
Vulnerable population	Intended benefit	Mechanism
Low-income urban consumers	More hygienic food with same stable availability and price	Increased quality and productivity imply an increase in supply without an increase in price.
Communities living near the factories	Reduced air pollution and reduced smell from waste	Producers adopt improved production technology that increases returns, but also reduces smoke, water-based waste, and the resulting smell of decomposing organic matter.
Workers in tofu and tempeh businesses	Improved working conditions with reduced smoke and heat	Producers adopt improved production technology that increases returns, but also reduces smoke. Improved productivity creates potential for improved wages or living conditions for workers.
Micro-producers and producer-renters	Improved productivity and improved workplace health	Access to improved technology becomes available, either through financing or by renting improved facilities.
Vendors	Higher sales due to improved hygiene and product quality For vendors who cook, reduced cost due to alternative fuels (e.g., used cooking oil)	Vendors can purchase branded, better quality tofu. Vendors use improved stoves that burn used cooking oil.

After a consolidation and winnowing process, VIP-Indonesia concentrated on three intervention areas:

1. Improved production, which has been successful.
2. Branding and marketing of more hygienic tofu and tempeh products, which started much later. Results are still pending.
3. Improved stoves for vendors, which was eventually dropped because newly designed stoves that burn used cooking oil could not compete with gas cookers.

Figure 2 details the causal model for these interventions. Improved production was designed to reduce costs, increase productivity, improve product quality, reduce pollution, and improve working conditions. The branding and marketing services were designed to increase sales and, potentially, price points to help producers realize more benefits from producing more hygienic products, and to raise awareness and stimulate demand for other producers to invest in improved production.

Figure 2 VIP-Indonesia Tofu and Tempeh Causal Model



Note:
Dealers could be tofu and tempeh cooperative (PRIMKOPT) or individual distributors.

This model was primarily used to manage interventions, redirecting work based on changing circumstances, and ensure that everyone on the team was working toward the same intermediate outputs and end goal. Quantitative indicators and targets were selected for each “box.” The VIP-Indonesia team gathered data regularly for each level, using the information to adjust and improve program activities and results. Table 2 below presents the results of the “cleaner production” part of the causal chain.

Table 2 Results for Cleaner Production Element of the Causal Model

Level	Objective	Result
Impact	Environment and working conditions improve	Workers: 3,700 Community members: 8,000 households
	Income increases (amount income increased over the income change among control group producers)*	USD 600/year increase for tofu producers USD 100/year increase for tempeh producers
Outcome	Sales increase	Not available
	Producers reduce fuel, save time, and improve product quality.	15% cost savings
	Producers purchase and use cleaner production equipment.	2,700 producers
	Producers increase knowledge of cleaner production, availability of finance, and branding.	19,000 producers
Output (business model level)	Dealers launch one-stop service.	3 dealers
	Matching grants stimulate demand.	Not available
	Dealers, equipment suppliers, and lead producers demonstrate cleaner production equipment.	3 dealers
Activity	VIP-Indonesia supports dealers and equipment suppliers, and links them to financial institution(s).	Detailed activity reports elaborate this work.

* The cost of soy, the main input, increased dramatically during the period.

Key Intervention: Cleaner Production

VIP-Indonesia’s intervention to improve production consisted of a flexible package of equipment, factory layout, and changes in production process, including:

- gas-powered cookers that cost less to run and produce little smoke, resulting in cleaner air and lower temperatures inside the factory;
- stainless steel equipment for better hygiene in tofu and tempeh production and improved fuel efficiency;
- training in cleaner production techniques (i.e., ban on smoking in the factory, guidance on handling water and cooking oil, employee uniforms, more efficient routines, and tracking of cleanliness procedures); and
- training in better waste management and disposal, and promotion of biogas. (Use of biogas, so far, is on a very small scale because biogas cannot substitute for firewood or gas in tofu or tempeh production; it is better suited to home cooking.)



New stainless steel vats (left) and traditional set-up (right).



Stainless steel vat with gas (left) and typical barrel vats with wood fire (right).



Workers in uniforms with modern skimming equipment and kitchen (left) and informally clothed workers with traditional skimming practice (right).

Pilot

Before VIP-Indonesia started, improved production technology was already in use in Jogjakarta (a city some distance from Jakarta), promoted by the Ministry of Energy. The VIP-Indonesia team tried several ways to engage Jakarta-based producers, identify service providers who could distribute the technology package sustainably on a larger scale, and mobilize finance. This is what ultimately worked best:

1. Mobilizing producers through a combination of cooperatives and traditional social networks. In the traditional social networks, the lead producers were the original migrants to specific neighborhoods. These producers set up shop, brought workers from their home community to the city, and helped the next generation of migrants become producers and establish factories. By communicating through these informal leaders, the VIP-Indonesia team and the distributors easily reached entire local clusters of producers, producer-renters, and workers. The main producer cooperative, PRIMKOPTI, operates in many clusters and was instrumental in introducing the VIP-Indonesia team to new communities of producers.
2. Demonstrating improved production practices in Jakarta. Several lead producers from Jakarta travelled with the VIP-Indonesia team and production experts to Jogjakarta to see the upgraded factories there. As happens with lead farmers, the lead producers then agreed to host demonstration factories, which were critical in proving to community members and other lead producers that savings could be realized.



Training service providers in cleaner tofu production.

3. Raising awareness among a larger community of producers about the importance and value of cleaner production methods, and the availability of technology.
4. Identifying commercial sources for the clean production equipment, which was readily available in the market.
5. Identifying equipment distributors and installers capable of training producers in cleaner production practices. The VIP-Indonesia team strengthened the training capacity of several different distributors: a soybean supplier, who also supplied traditional equipment; PRIMKOPTI, the leading producer cooperative; and an equipment supplier, who was new to the tofu and tempeh value chains.
6. Offering innovative, “smart” subsidies. Introductory discounts for the main piece of equipment (stainless steel vat) were offered by both the program and the equipment distributor. This reduced the risk for early adopters, lowered the cost of upgrading, and stimulated demand for other equipment that was part of the package. Subsidies have since been withdrawn without negative consequences on technology adoption.
7. Developing lease financing in partnership with equipment sellers, a leasing company (SNP Finance) and PRIMKOPTI, in some areas. Project staff identified a leasing company with experience financing formal-sector small enterprises and also helped potential business partners develop a risk-reduction and demand-aggregation strategy to make the market desirable for the leasing company. The cooperative and distributors aggregated demand, distributed and helped clients with applications, and guaranteed the leases. The cooperative or distributors agreed to take possession of equipment in case of default and simply resell the equipment (at a lower price) to another producer.

The demonstration factories helped other producers see that building better production facilities can result in as much as 30 percent increased efficiency in tofu and tempeh factories, although average savings by producers was closer to 15 percent. The cost savings potential due to fuel reduction is USD 16.60 per day. Other advantages are longer shelf life (1–3 days) of the food products and a much better taste. In addition, good facilities mean better working conditions, such as smoke-free factories, lower temperatures inside the factories, and easier processing—plus the air in the communities around these factories is less polluted.

Market Uptake

Initially, VIP-Indonesia expected that upgrading production technology would take off in the market on its own, once it was successfully demonstrated. Through training and visits to other programs, however, the team understood the value of proactively stimulating market uptake. It then built uptake strategies into the pilot project and reaped the benefits. The market is expanding now, without further subsidies by the program, in four primary ways that the project promoted:

1. Lead producers demonstrated the improved production equipment and packages, and informed their cluster and cooperative members how to get the equipment, training, and financing they need. “Cleaner production” has quickly become a trend in communities, following the strong buy-in from the lead producer(s).
2. The Ministry of Environment trained an initial group of producers, potential entrepreneurial distributors, and cooperative leaders to stimulate demand for production improvement. Later, aspiring distributors worked with PRIMKOPTI and other lead producers to market the benefits of the improved equipment and took interested producers to visit the demonstration factories. Some promoters started commercial distribution businesses in which promotion costs are covered by profits from equipment and service sales.
3. Several other equipment manufacturers have increased production, in addition to the manufacturer that the program initially worked with. They are responding to demand from producers and equipment distributors, and are copying the equipment producers who participated in the program. New equipment producers learn equipment

Struggles of a Small Tofu and Tempeh Vendor

Mr. Kasdani (70 years old) lives in Kaum, Margahayu village, in the city of Bekasi, and has been a vendor of cooked tofu and tempeh since 1980. His cart, which he purchased for around IDR 3 million (Indonesian rupiah), is stationed in front of the Pasar Baru wet market in Bekasi. Every day, he earns IDR 160,000 by selling cooked tofu and tempeh, which provides a net profit of at least IDR 20,000 per day. He sells one small slice of tempeh or tofu for IDR 500. Each day, he uses 8 kilograms of frying oil and 3 kilograms of liquefied petroleum gas (LPG) from a canister. He starts to sell at 2:00 pm and returns to his house at 9:00 pm. His wife helps him by purchasing raw materials, such as raw tempeh and tofu, cooking oil, and LPG canisters.

In total, Kasdani pays more than IDR 10,000 per day in illegal fees to the preman (local gangsters). Each evening, the preman collect the fee and sometimes take the cooked tofu and tempeh without paying. Unfortunately, Kasdani does not have the power or the will to challenge the preman because, if he does, they will not allow him to sell in his area any more.

Success Story of a Small Tofu Producer

Sunoto, a tempeh producer in East Jakarta, has been involved with VIP-Indonesia since the beginning. His factory was selected as a pilot, and the project renovated his factory and installed new equipment—a stainless steel drum, LPG, and a permanent stove. He soon experienced the benefits of a much cleaner factory with no more smoke as result of using LPG, and a much better tempeh product as result of using a stainless steel drum. When he realized that his tempeh had better quality, he started to brand his tempeh with the support from the project. He increased his production capacity, which had a positive impact on sales, and he thus increased his income.

Success Story of a Tofu and Tempeh Equipment Distributor

The impact of the cooperation between Ateng, owner of the Hari-Hari Jaya Shop, and SNP Finance was remarkable. Ateng sold around 40 stainless steel drums to tofu and tempeh producers. Not only were stainless steel drums in demand but also soybean peeling machines and stainless steel buckets. Ateng offered different alternatives for payment. Producers could pay in cash, pay on a credit plan for two months with three installment payments, or lease the equipment through an agreement with SNP Finance. Eight tofu and tempeh producers applied for lease finance with SNP, for a total value of USD 2,950. Ateng guaranteed the leases. Using a similar arrangement with SNP, Ateng started a new side business selling laptops to the tofu and tempeh producers, primarily for their children to use.

The market area for Ateng’s cleaner production equipment includes Jakarta, Cikarang, Serang (Cibarusah), West Java, Tambun, and Depok. It is easy for Ateng to introduce his new business because he has a huge network as one of the big soybean suppliers in Greater Jakarta. He became a significant soybean supplier in part because his father is one of the original migrants to establish tofu production in Jakarta; he is also a leader in his community and has longstanding relationships with leaders in other tofu clusters.

In order to market his business, he uses SMS (short message service via text messaging) and the telephone, visits tofu and tempeh producers, and recruits his brothers and lead producers to promote his stainless steel equipment and laptops.

Mercy Corps has supported Ateng by producing brochures for his activities. Ateng realized that a word-of-mouth strategy is very effective for spreading information and promoting new products throughout the tofu and tempeh sector.



Group observing training in more hygienic production of tempeh.

specifications and other manufacturing details, and get connected to the cleaner production distributors through PRIMKOPTI or individual entrepreneurs (such as equipment dealers and soy bean kiosk/shop).

4. VIP-Indonesia trained two distributors, who originally they were soy wholesalers. they now sell clean-production equipment and technology, and are expanding their businesses into new geographic areas.

Results

The VIP-Indonesia team estimates that the program reached over 30,000 households in tofu- and tempeh-producing clusters. Around 8,700 were producers or workers whose income and/or working conditions improved as a result of access to improved technology, which was purchased by an estimated 2,600 producers who own factories. Because of the structure of the tofu

and tempeh businesses, when one producer purchases improved technology, an additional 2.3 individuals benefit as factory renters or workers. Nearby households either benefited from reduced pollution in their community (8,000) or received information about the benefits of cleaner production and no-cost improvements they could make, and how to access improved technology. The VIP-Indonesia team helped to build a sustainable and expanding market system that engaged—in innovative ways—traditional social networks, formal and informal enterprises, cooperatives, and government institutions.

On a structural level, there were five key program achievements by the end of the project.

1. VIP-Indonesia successfully adapted value chain development to the urban context, to the benefit of informal sector enterprises and workers, and also addressed such urban challenges as pollution, high energy use and costs, food quality, and food security.
2. By leveraging urban institutions and resources, VIP-Indonesia was able to promote cleaner production to thousands of tofu and tempeh producers with low levels of program investment.
3. The program successfully leveraged the urban social networks that form the basis for business networks and clusters. The application of “lead farmer” approaches, combined with leveraging urban businesses and public institutions, was effective in the urban context.
4. VIP-Indonesia has successfully stimulated a sustainable market, even withdrawing temporary subsidies, such that existing suppliers are still operational and expanding, and new suppliers are entering the market.
5. VIP-Indonesia introduced an innovative value chain financing mechanism—equipment leasing with a guarantor in the market, rather than the project guaranteeing loans—to reach more informal and lower-income borrowers.

Key Findings and Lessons Learned

1. Many value chain methodologies (also used in rural value chain development) are applicable in the tofu and tempeh value chain development in its informal urban sector:
 - *Understand the entire value chain and prioritize interventions that have an immediate result for larger numbers of producers.* VIP-Indonesia used a process improvement, “cleaner production,” that increased efficiency, improved working conditions, and reduced environmental impact.
 - *Start by upgrading (with demonstrations) the basic production process (improvements) that serve the same, easy-access markets.* Later, graduate to higher levels of upgrading (product, market, function).
 - *Leverage social networks to disseminate information* for both general and individual benefit. For example, use lead producers, in the same way that rural programs use lead farmers, to test and demonstrate benefits of new technologies to other producers in the sector. In addition, the tofu and tempeh value chain entrepreneurs with supporting businesses leveraged their social connections to promote new side businesses, as in the case of Ateng, the equipment distributor who was the son of a leading tofu producer.
 - *“Seeing is believing”:* use demonstration as a primary marketing tool. The impact of visits to demonstration factories, as well as the influence of lead producers upgrading their factories, convinced other producers to follow suit and reap benefits from clean production equipment and more efficient processes.
 - *Offer a full technology package to reach lower-income producers,* such as the stainless steel equipment, skills development, and leasing and finance provided by the tofu and tempeh program.
 - *Offer a flexible technology package so that producers can upgrade gradually,* with lower risk and more affordability.
 - *Utilize government, cooperative, and private sector equipment and service providers in innovative combinations based on capacity and market conditions.* For example, in some locations in Indonesia, cooperatives were strong and entrepreneurs weaker, so cooperatives distributed equipment. In other places, however, cooperatives could not compete with entrepreneurs. Surprisingly, the entrepreneurs were as ready to offer loan guarantees as the cooperatives. Also, the Ministry of Environment trained the first group of entrepreneurs and cooperatives in cleaner production, with the goal of having the private sector take over and spread the environmental practice.
 - *Use smart subsidies to jump start the market for new technologies,* such as supporting incentives and the leasing scheme. Plan to phase the subsidies out, so the market can take over and sustainably deliver equipment and services to larger numbers of people.
2. There is growth potential for informal, urban producers operating in mass markets with low profit margins. It may be important, though, that upgrading options offer a mixture of financial benefits and workplace improvement because financial benefits may be modest. Income increases came primarily from productivity improvements and reduced fuel expenses. Producers seemed equally satisfied with improvements in working conditions as with the cost savings.
3. It is possible to extend benefits to vulnerable populations when targeting a low-moderate income customer base because upgrading strategies are accessible to larger numbers of producers. Production upgrades quickly reached large numbers of producers and therefore quickly improved working conditions for larger numbers of workers.
4. Monitoring and results measurement is more complex in market development programs, but investments in staff training and systems pay off in terms of good project decisions and clear quantitative data to tell the story.

Annex 1: Quality Monitoring and Results Measurement

A key component of the Value Initiative was the application of the DCED* standards to results assessment. VIP-Indonesia committed staff and resources to quality monitoring and results measurement. Some successes include:

- Early investment in results assessment capacity building and systems development;
- Training and engagement of all staff in monitoring and results assessment;

Detailed causal models and pioneering of innovative ways of diagramming “pilot” and “uptake” causal models for each intervention;

- Use of these causal models to guide program implementation; (For example, staff took tailored results assessment manuals to the field so they could check the program results their work was intended to affect. They entered field observations regularly into the results database to help managers aggregate, track, and analyze implementation and market information to make program decisions.);
- Change in program direction based on field results, for example, dropping the intervention on fuel efficient stoves for vendors when the stoves were not viable; and
- Incremental adaption and development of data management and reporting tools according to need.

* Donor Committee for Enterprise Development

Annex 2: VIP-Indonesia Results

Indicator		Results			Notes
		Direct	Indirect	Total	
Awareness about cleaner production: importance, no cost practices, available technology and potential benefits.	Producer-owners	3,000	5,000	8,000	"Direct" means enterprises and individuals reached by businesses, cooperatives, and community members (service providers) engaged with the program. "Indirect" means enterprises and individuals reached by service providers not supported directly by the program, but which copy the business models promoted by the program. These are reasonable estimates, based on data provided by the enterprises and service providers directly assisted by the program, and by the observations of program staff of other enterprises and service providers.*
	Renters	4,000	7,000	11,000	
	Total	7,000	12,000	19,000	
Enterprises purchasing or using improved technology	Producer-owners	1,300	1,300	2,600	
	Renters	1,400	1,400	2,600	
	Total	2,700	2,700	5,200	
Workers benefitting from improved conditions	1,750	1,750	3,500		
Sub-total of individuals in businesses using improved technology (enterprises + workers)				8,700	
Community households experiencing less pollution				8,000	
Total of households (enterprises + workers + community members) reached				30,500	
Average income increase of producers using improved technology, compared to non-technology adopters			Tofu: USD 600 Tempeh: USD 100		

* For more information on the results assessment process, see A. Miehlebradt and C. Riggs, 2012, "Monitoring and Results Measurement in Value Chain Development: 10 Lessons from Experience (Washington, DC: The SEEP Network).

Annex 3: Quantitative Results: The Breakdown

Indonesia directly raised the awareness of cleaner production technology among approximately 3,000 tofu and tempeh producers who own their facilities, and roughly 4,000 producers who rent facilities from them. It is estimated that these enterprises passed their knowledge on to another 12,000 enterprises.

Approximately 1,300 tofu and tempeh owners purchased cleaner-production technologies from the distributors partnering with the project, which also benefited roughly 1,500 producer-renters. It is estimated that roughly the same number purchased cleaner-production technologies as an indirect result of VIP Indonesia's activities, for a total of over 5,000 producers benefiting from cleaner production technologies.

The production technologies and associated practices improved working conditions for approximately 3,500 workers and reduced pollution for well over 8,000 households by the end of the project.

On average, tofu producers who own their facilities and purchased new technology promoted by the program reported an income annual gain of nearly USD 600 more than other tofu enterprises. Similar tempeh production owners who purchased the new technology reported income increases of over USD 100 more annually, on average, than other tempeh enterprises. While many enterprises took advantage of financing, by the end of the project a significant number were also purchasing new technologies with their own funds.

Observation of trends among tofu and tempeh enterprises indicates that the market for cleaner production technologies will continue to grow as word of their benefits spreads