



Corridors for Shared Prosperity

Transfer Journeys of Indian Inclusive Business Models

CASE STUDIES

This assessment was conducted and document written for the International Finance Corporation (IFC) by Intellectual Capital Advisory Services (Intellectap).

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Background and Context

Corridors of Shared Prosperity is the collaborative effort of IFC, a member of the World Bank Group and Intelicap to accelerate the transfer of inclusive business models across developing countries. It consists of knowledge and information around ‘what works’ in successful transfer. Eleven inclusive businesses, which expanded from India to other developing countries, and over 44 industry practitioners interested in the issue of transfer were consulted to gather empirical evidence.

The insights resulting from this analysis have been used to create a framework and roadmap to inform systematic inclusive business transfer with a specific focus on **India-Africa transfer**. Additional knowledge resources that use the framework as a foundation have also been created. These include a deep-dive report, a companion guide with detailed case studies and a downloadable toolkit comprising of a self-diagnostic tool and checklists.

Transfer Journeys of Indian Inclusive Business Models is a compilation of eleven case studies that have been used to bring the framework to life. Each case brings out different nuances of transfer, and illuminates how resource constrained inclusive businesses succeeded in taking their models and their impact to new markets.

Acknowledgements

This report is the product of a study carried out by the International Finance Corporation (IFC), a part of the World Bank Group, and Intellectap. It seeks to inform systematic transfer of Indian inclusive business models to other developing countries, with a specific focus on African countries.

We are deeply indebted to Indian inclusive businesses that shared their successes and failures in transferring to new markets, as well as to private and public sector organizations in India and Africa that shared their insights and perspectives on this issue.

Our special thanks to Anil Sinha, Regional Head of South Asia Inclusive Business, World Bank Group for his direction, guidance and advice.

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Limitations

The Inclusive Business Transfer Framework is specifically designed for small and medium inclusive businesses and is less relevant for other types of business models. It is intended to be an early guide for businesses that are considering transfer to Africa, but given the wide variety of business contexts in India and Africa – this report should only be treated as a broad guide. It is recommended that inclusive businesses validate all insights garnered from this report through their own research and efforts as well. Finally, owing to the lack of reliable and granular data in many of the African countries considered in this report, it relies on qualitative insights from industry experts and inclusive businesses, and hence the insights and recommendations should be treated as broad indicators.

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Agriculture



Agriculture contributes 32 percent of GDP across the African continent, providing jobs and livelihoods to over 65 percent of the labor force¹. The International Food Policy Research Institute has stated that, “In most African countries, agriculture is the engine of economic growth, and agricultural growth is the cornerstone of poverty reduction”.

Case Studies

1. Digital Green
2. Global Easy Water Products (GEWP)
3. Manasa Agro
4. Shree Kamdhenu Electronics (SKEPL)

The agribusiness market in Africa is expected to grow to \$1 trillion by 2030² - with opportunities across the value chain from pre-harvest to post-harvest stages. However, as in most developing countries, the sector is also affected by market inefficiencies such as fragmented land-holdings, inadequate know-how about and access to improved inputs and techniques, limited post-harvest value-addition, and information asymmetry between farmers and buyers which puts excessive power in the hands of middle-men.

This interplay of a large market opportunity and significant challenges creates a perfect test bed for Indian inclusive business models, many of which have been devised to tackle similar challenges.

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1. World Bank Development Indicators Database. Accessed in November 2014.
 2. Growing Africa: Unlocking the Potential of Agribusiness. World Bank. 2014.

CASE STUDY 1
DIGITAL GREEN

Transfer format: Wholly-owned subsidiary
Countries of operation: India, Ghana, Ethiopia, Tanzania, Niger, Mozambique

Digital Green (DG) mobilizes rural communities and educates them about agriculture, healthcare and livelihoods using videos and other multimedia. It works closely with grassroots organizations for outreach and engagement, and customizes media content for local language and context.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: DG aimed to scale the impact of its model by transferring it to new markets, and was also motivated by donors' interest in supporting its expansion.</p> <p>Preparation: It conducted extensive due-diligence ahead of expansion. It examined donor interest and government support in different countries, and identified ways in which its model would need to be adapted to be effective outside India.</p> <p>Format preference: It transferred through country level branch offices started by its US based not-for-profit affiliate as its legal status of a Trust in India did not permit expansion to other countries.</p> <p>Country preference: DG's country choices were driven by donors such as World Cocoa Foundation, BMGF and DFID who funded its expansion to Africa.</p>	<p>Management readiness: DG's India team travelled to Africa to build market understanding and activate networks, and it also recruited a team of local professionals to drive operations. It subsequently hired senior staff in Ethiopia to focus on the Africa operations.</p> <p>Financial readiness: It secured grant funding from the World Cocoa Foundation and other international funders ahead of expansion.</p> <p>Operational readiness: It developed robust information technology systems for cost-effective program implementation, monitoring and evaluation.</p> <p>Validating need for product/service: The donors that funded DG's expansion helped to validate the need for its value proposition in destination geographies.</p>	<p>Local farmer organizations: Presence of a significant number of producer/ social groups that collectivize farmers and rural communities.</p> <p>Implementing partners: Presence of like-minded partners with existing relationships with farmers to facilitate adoption of GAP.</p> <p>Internet: Penetration of internet and telecom connectivity (broad-band connection) for storage and dissemination of videos among farmers and rural communities.</p> <p>Active donor organizations: Access to adequate and long-term grant support to implement projects.</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Inadequate penetration of telecom and internet connectivity, and erratic power supply
Sector: Limited aggregation of farmers and rural communities through farmer groups, cooperatives and producer organizations.
Business: Higher cost of skilled human resources in African countries than in India

KEY TRANSFER INSIGHTS

- Given its reliance on grant funding for operations, DG secured partnerships with donors ahead of expanding to new markets. In addition, it identified services that can be made remunerative to create long-term sustainability of the model
- It assessed the local environment in destination countries by partnering with grassroots organizations, which also assisted it in community mobilization
- It gathered on-ground information and feedback in order to identify what works in each market and accordingly modified its business model

Digital Green combines technology and social organization to build capacity of community members on improved, sustainable agriculture, livelihood, and health interventions. The firm was set up in 2008. Since inception, it has reached 5,000 villages across India, Ethiopia, and Ghana and improved the lives of more than 500,000 community members (70 percent women) in South Asia and Sub-Saharan Africa.

HEADQUARTERS: Delhi

YEAR OF FOUNDING: 2008

FOUNDERS: Rikin Gandhi

LEGAL STRUCTURE: Trust (in India)

BUSINESS MODEL: Business-to-business (B2B)

SECTOR AND SUB-SECTOR: Agriculture, Technology



Credit: Digital Green

INTRODUCTION

Rikin Gandhi started Digital Green (DG) as a project in Microsoft Research India's "Technology for Emerging Markets" team in 2006. The project spun out as a trust in 2008, and uses a digital platform to disseminate information on good agriculture practices (GAP) to small and marginal farmers to help improve crop yields. DG's agriculture extension³ methods have greater efficacy⁴ and cost effectiveness⁵ than traditional agriculture extension methods.

DG adopts a participatory approach to make videos on GAP in crop husbandry, from pre-sowing to production and post-harvest phases.⁶ The DG team partners with local public, private, and civil society organizations to disseminate these videos among small farmers to encourage GAP adoption. Currently, DG operates in six Indian states - Karnataka, Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, and Odisha – and is engaged with over 1 million farmers across 11,000 villages. In 2010, DG registered its not-for-profit arm in the U.S. to undertake projects in other countries such as Mozambique, Ghana, Ethiopia, and Tanzania.

DIGITAL GREEN'S BUSINESS MODEL IN INDIA

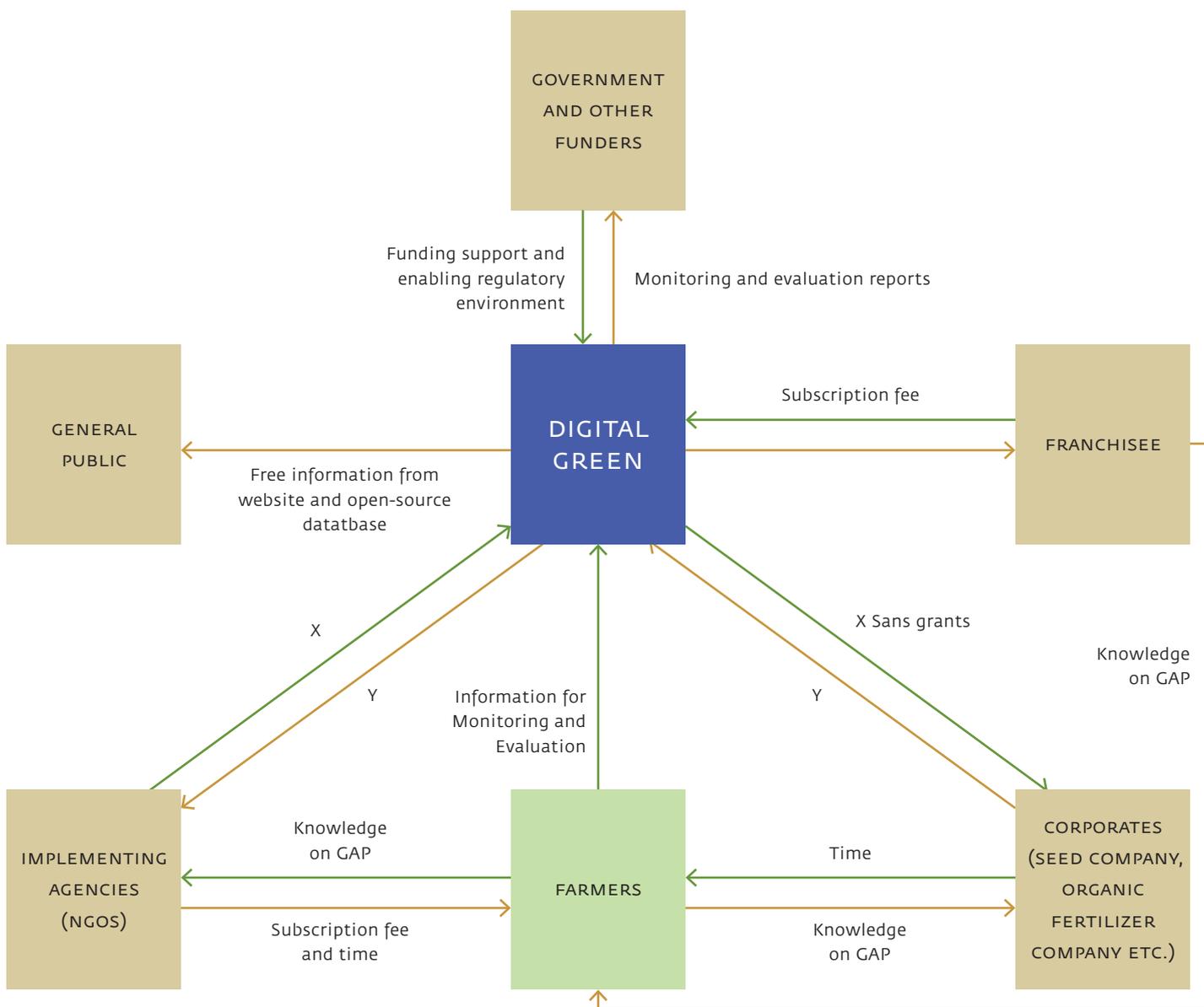
A majority of small farmers in India have limited access to agriculture extension services. The existing agricultural extension system in India is not very effective in moving farmers to adopt scientific and modern techniques. Moreover, the costs of reaching small farmers, especially in remote regions, are high. DG addresses this information asymmetry by focusing on knowledge dissemination, process innovation, and channel innovation.

"Good agricultural practices are effectively adopted by farmers only when information is shared by the community members who face similar constraints themselves."

Vinay Kumar
COO, DIGITAL GREEN

3. Agricultural extension is the application of scientific research and new knowledge to agricultural practices through farmer education. Traditionally, agriculture extension is facilitated by government-appointed agriculture extension workers or through special radio and television programs committed to agricultural extension.
4. In a controlled evaluation of DG's method, the uptake of new practices was found seven times more than with traditional methods.
5. A controlled evaluation of DG's method proved that it was ten times more cost-effective than traditional methods of agriculture extension.
6. Apart from agriculture, DG also produces videos on health, nutrition, and sanitation. However, the bulk of its work is in the agriculture sector.

FIGURE 1
DIGITAL GREEN'S OPERATING MODEL



- | | |
|---|--|
| <p>X</p> <ol style="list-style-type: none"> 1. Funding (grant) for program Implementation 2. Technology support (hardware like camera, pico-projectors, systems and accessories) 3. Maintenance support for hardware and software 4. Capacity building of management team and field staff of implementing agencies/corporates/Franchisees 5. Training on editing and uploading of approved videos in Digital Green's website and database 6. Program management, and inputs on better program implementation | <p>Y</p> <ol style="list-style-type: none"> 1. Progress report in terms of achievement against planned targets on number of videos shot, edited, approved, uploaded and disseminated 2. Recruitment of field staff and Facilitation of training for field staff 3. Cooperation on monitoring and evaluation for Digital Green implementation |
|---|--|

THE KEY ELEMENTS OF DG'S BUSINESS MODEL INCLUDE:

Business process innovation

DG works closely with implementing partners, such as NGOs, public sector development agencies, or corporate firms such as Syngenta Foundation, to reach marginal farmers. It provides technical assistance, program management, and financial support to field agencies. DG maintains quality by adhering to its proprietary standard operating procedures and quality assurance framework. The videos are simple, easy to comprehend, and locally relevant. DG facilitates information dissemination by featuring progressive farmers from the same or neighboring villages in the GAP video. Video screening is synchronized with cropping schedules in that area so that the information is timely and is used within a few days of dissemination. Videos are screened to farmer groups in the presence of community mediators who moderate discussions. The mediators address farmer queries and participate in dialog during the screenings and feedback sessions. The videos are an efficient, cost-effective, and resource-light method to increase adoption rates.

Knowledge and information dissemination

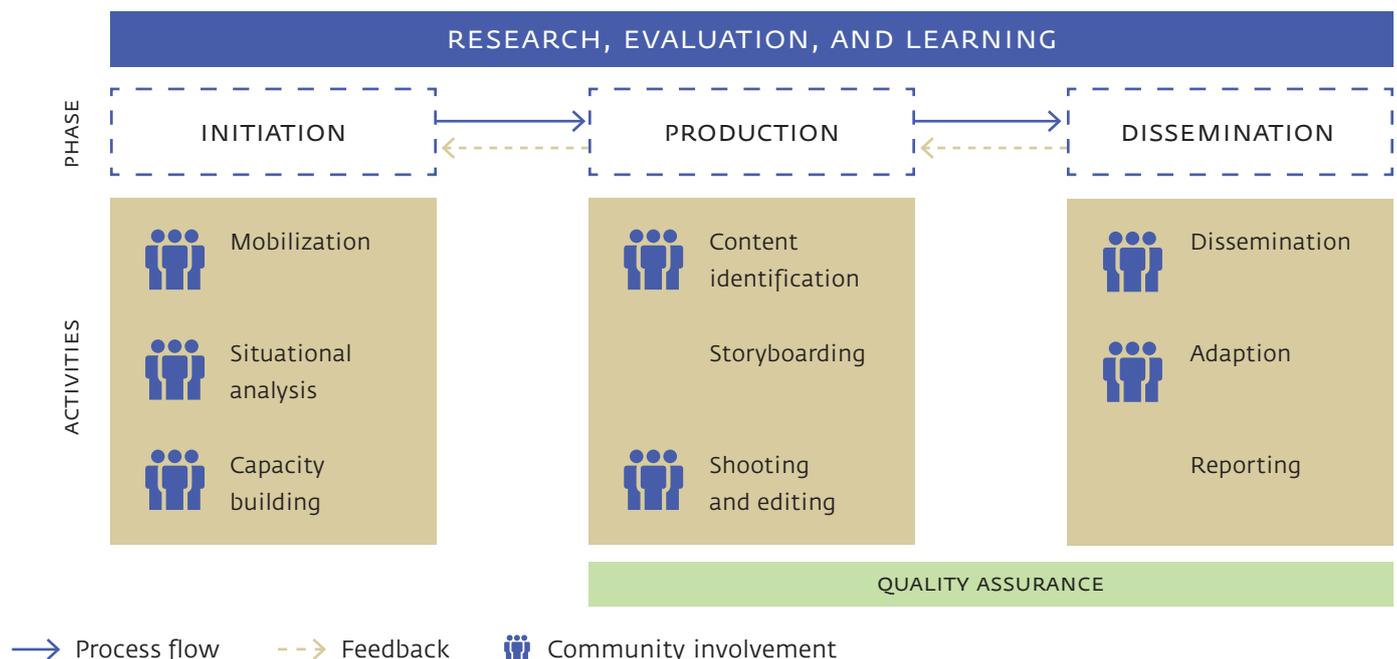
DG uses existing large-scale government programs to disseminate information to wider groups of small and marginal farmers. It partners with government agencies like the National Rural Livelihoods Mission (NRLM), its nodal

agencies at the state level, the Ministry of Agriculture and Rural Development, and state-level agriculture and rural development departments. It also partners with government and non-government agencies to secure grant funding. DG establishes forward links with the following players for effective dissemination:

- Local implementing agencies that work closely with farmers, carry strong credibility with the community, and possess domain expertise in agriculture
- Corporate firms that procure commodities from small and marginal farmers
- Individuals and agencies that help DG in strategy, research, documentation, capacity-building, and monitoring and evaluation
- Hardware and software vendors and agencies responsible for their maintenance.

DG is exploring ways to make its model self-sustainable. It shares recurring costs with partners according to cost-sharing agreements it enters into. It earns some revenue by charging farmers for video screenings. It is exploring other revenue streams such as advertisements by local dealers and merchants

FIGURE 2
KEY COMPONENTS OF THE DIGITAL GREEN APPROACH





Credit: Digital Green

and a franchisee model. DG intends to support and encourage organizations interested in its approach through its franchisee model. It will conduct due diligence to select franchisees that have relevant domain expertise and work closely with local communities. Under this model, DG will provide online and in-person training and accreditation on community facilitation, video production, data management techniques, and access to DG's open source technology stack, with technical assistance as needed. Franchisees will pay for services provided.

Channel innovation to improve access

DG's videos are stored at cloud-computing databases maintained by Amazon and Google services to help local mediators and extension agents access them. DG also has a technology service named COCO (Connect Online, Connect Offline), a reporting system that shares, monitors, and tracks information collected. COCO's unique proposition is its ability to take the application offline in low and limited bandwidth locations with uninterrupted use through a browser. The system is designed in an open-source, customizable framework that is deployed without need for IT/engineering staff. DG uses low-cost energy-efficient technologies such as pocket video cameras, pico-projectors, and a near real-time open-source data management and analytics framework. This approach lowers costs of operation and helps DG remain sustainable on a donor-funded model.

EXPANSION OF DG'S BUSINESS MODEL IN AFRICA

Ghana and Ethiopia have very low ratios of farmers to extension workers, 1500:1⁷. This results in low levels of access to relevant and reliable agri-information. Farmers mostly follow traditional agricultural practices and there is a need for extension services to improve agricultural productivity.

In 2011, after working in India for over three years, DG decided to transfer its operations with help from local partners and implementing agencies in the destination countries. Around the same time, the World Cocoa Foundation (WCF) approached DG seeking help to promote GAP for cocoa and improve cocoa production. WCF and DG implemented a successful pilot project in which cocoa farmers were provided access to extension and credit services through community-based business service centers. By 2013, around 1,800 farmers had watched the videos and about 85 percent had adopted at least one GAP in Ghana. DG also partnered with commercial trading groups such as the Noble Group and Armajaro Trading to expand its outreach in Ghana.

Management Readiness

Leveraging India team experience to build Africa operations

DG initially deployed senior and experienced team members for its Africa expansion. Senior managers from India travelled to Africa to understand the agriculture extension sector. They garnered insights on the state of agriculture and built relationships with local stakeholders. Once DG established partnerships with key implementing agencies and was ready to commence operations in Ghana, it appointed a senior manager and recruited a local team for its operations. Strategic decisions for Africa are still made by senior management in India. DG, however, intends to transition this role to a locally recruited team of senior managers. This will free up senior management bandwidth and help DG achieve its goal to expand to new geographies in Africa.

Format and Country Selection

Transferring to countries with an enabling regulatory environment

Funding agencies like UKaid's Department for International Development (DFID), World Cocoa Foundation (WCF), and Bill and Melinda Gates Foundation (BMGF) supported DG's expansion. They determined entry market choices of Ghana and Ethiopia. Other critical factors for country selection included supportive government policies and government interest in DG's model. For instance, encouraged by their success in Ghana, the government of Ethiopia invited DG to implement an efficient agricultural extension system at the national level. DG is now engaged in a seven-year project with the Ministry of Agriculture in Ethiopia.

Scaling impact through country-level branch offices and partner agencies

DG's legal status as a trust⁸ in India did not permit its expansion to other countries. So it chose to transfer through country-level branch offices started by its U.S.-based not-for-profit affiliate.

DG expanded into Ghana, Ethiopia, and Tanzania in partnership with local players. These partnerships with local NGOs and other implementing agencies helped it understand local socio-cultural contexts better. By working closely with local partners, DG broke the image of being an 'outsider' among the farming community and leveraged complementary partner strengths to improve GAP adoption rates.

Financial Readiness

Securing donor funds and building capital reserves for expansion

DG's expansion move was largely funded by donors keen to use technology for development in the destination countries. DG forged such partnerships to pilot and implement projects in Ghana, Ethiopia, and Kenya. DG planned operations in these countries only after funding commitments from donors.

Apart from receiving donor funds from individuals and organizations, DG plans to strengthen revenues by charging a small fee for farmers watching GAP videos, advertisements from local input dealers, and franchisees.

Operational Readiness

Leveraging partnerships with large organizations to access new markets

DG chose to partner with large organizations that could enable it to scale and transfer its strengths of technological know-how, video content development, and ability to involve communities in operations. In Ghana, DG initially worked with WCF and partnered with commercial trading groups. Its success in Ghana garnered interest from government agencies and existing funders in other African countries. In Ethiopia, it signed up for a seven-year project with the Ministry of Agriculture to promote locally relevant agricultural technologies across high impact value chains. Similarly, it aimed to promote locally relevant soil management practices among subsistence farmers in Ethiopia, Tanzania, Mozambique, and Ghana.

7. mFarmer: Providing Kenya's farmers with agricultural information via mobile, CABI, July, 2014; Major Challenges facing Kenyan Agricultural sector, Extension Conference, June, 2011.

8. The Indian Trusts Act, 1882.

Undertaking extensive planning and due-diligence to gain local insights

The DG team conducts extensive due diligence before transferring the model to new geographies. For instance, it explored the state of the agriculture sector, presence of producer/social groups among farmers, infrastructure, and availability of partner agencies in Ghana. The team also scanned for possible government support and other regulatory directives that could

impact DG's operations. DG's senior management travelled to Ghana and Ethiopia to understand local environments. In addition, initial interactions with various governments and NGOs helped DG understand the socio-economic situation and agricultural extension value chain in Africa.

FIGURE 3
TRANSFERRING DIGITAL GREEN FROM INDIA TO AFRICA

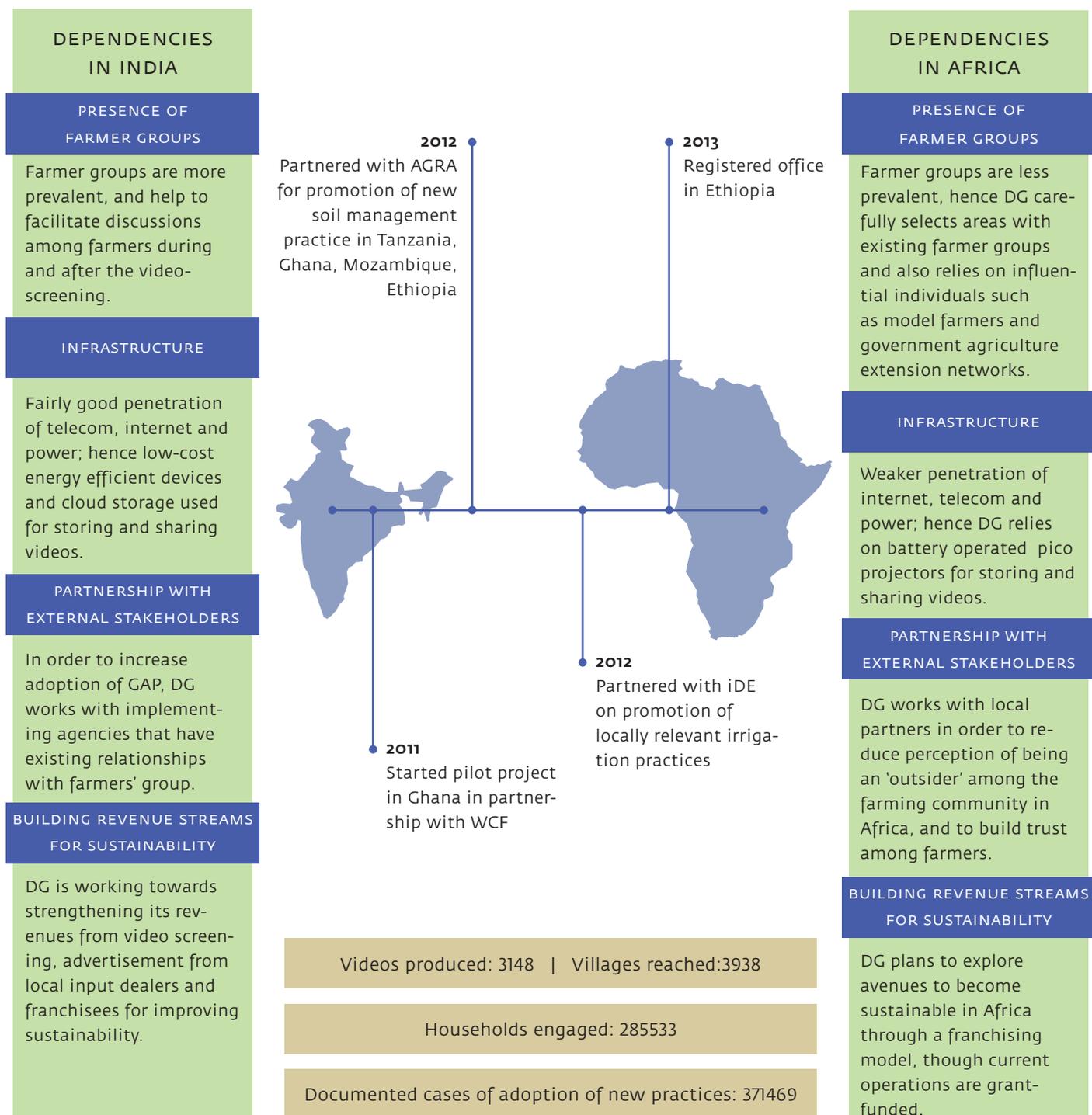
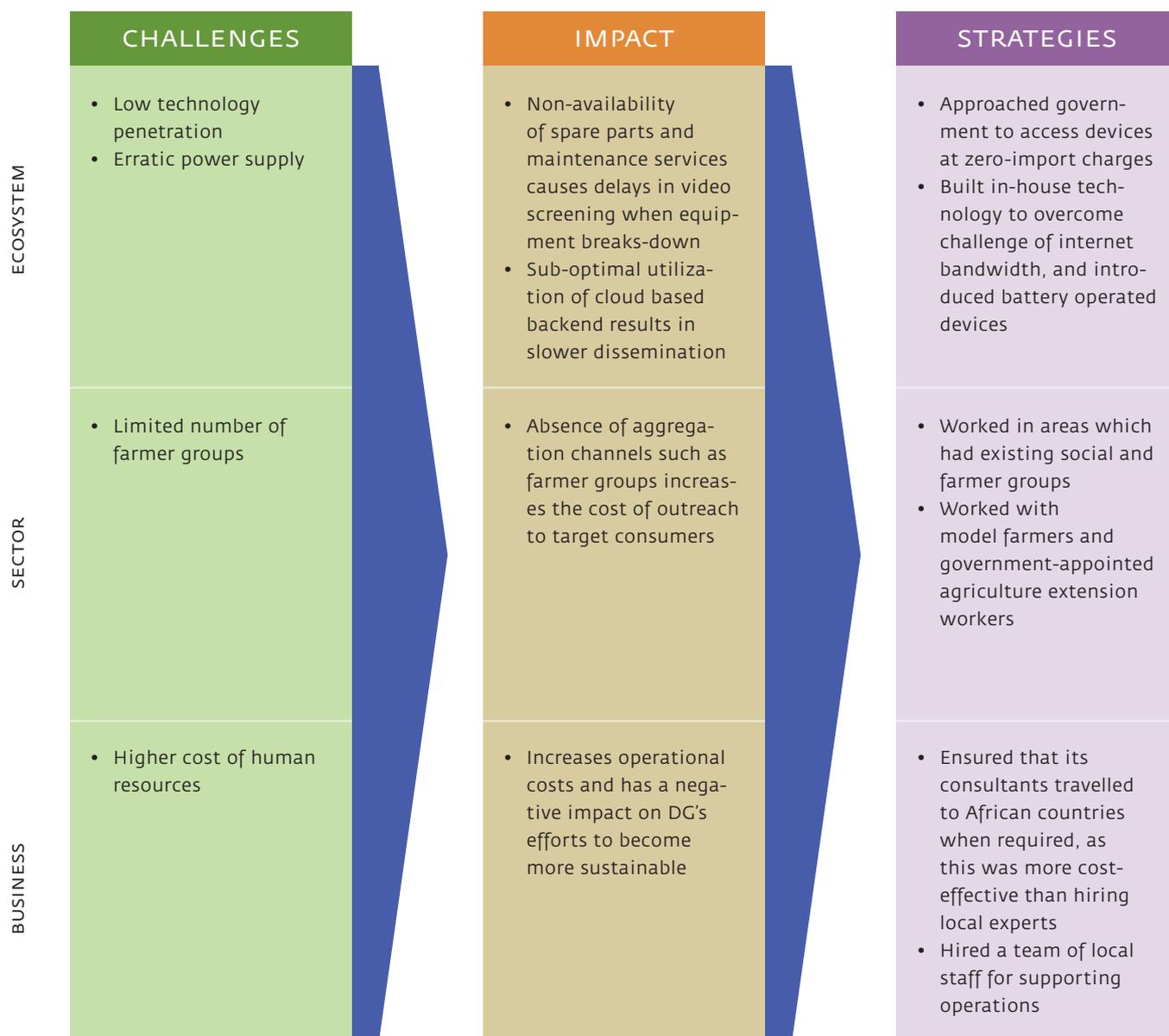


FIGURE 4
CHALLENGES FACED BY DIGITAL GREEN IN TRANSFER AND
STRATEGIES ADOPTED TO ADDRESS THEM



CHALLENGES AND KEY INSIGHTS FOR TRANSFER

Relying on the technology to increase outreach

DG strongly believes in the use of technology for easier mass dissemination. Hence, its business transfer too hinges on the same premise. DG relies on low-cost open-source technology to store and disseminate videos, monitor and evaluate progress with feedback, and other product refinement support. It leverages cloud computing databases for video storage, COCO for reporting, and other low-cost technology platforms.

By using technology to manage core operations, DG made its model efficient and strengthened operational readiness. DG's internal processes are fairly standardized. It has developed checks and balances to ensure quality standards are met. It adheres to its proprietary standard operating procedures and quality assurance framework in all its operations. Institutionalization of procedures and internal processes improves operational readiness.

Securing donor support and identifying remunerative services to scale operations sustainably

Inclusive businesses, especially not-for-profits, often require infusions of donor funding to pilot and accelerate operations sustainably. However, they must identify products/services that can be offered at a small fee to cover operating costs. Securing grants and financial incentives played a key role in DG's choices of countries and formats for transfer. DG's senior management believes it is important to identify remunerative services to create long-term sustainability. It charges \$0.03 to 0.07 per farmer per screening to cover operating costs and plans to augment revenue through advertisements by input providers. DG also plans to roll out its franchising model targeting government agencies, corporates, and civil society organizations in new geographies. The franchising model is likely to support scale and contribute significantly towards gradually reducing DG's dependence on grant funding and make it financially sustainable.

In addition to funding, local government support helps inclusive businesses scale their models cost-effectively. In Ethiopia, building relationships with government agencies resulted in access to existing government extension structures to deliver the program and import duty exemption on hardware devices, which helped reduce program costs.

Understanding the local context and identifying the right partners to enter new markets

Inclusive businesses that provide knowledge dissemination services must work closely with target customers. They need to invest in understanding context and economic and socio-cultural dynamics when entering a new geography. Identifying partners, who understand context, have domain expertise, and carry strong credibility with target customers, can contribute significantly to success. Digital Green's senior management spent adequate time on the ground and forged partnerships with field agencies to understand the farm sector in Ghana. They found that the farming community in Ghana and Ethiopia is organized by commodity groups, unlike in India where it is organized in SHGs formed by farmers of similar socio-economic backgrounds. This prompted the team to change the way it mobilized the community. It worked with model farmers and government-appointed agriculture development agents to reach out to small farmers. Further, field visits helped the team assess relative costs across regions and plan expansion strategies carefully through cost minimization. For instance, although Ghana has an adequate talent pool, it came at higher costs. Hence, DG moved staff from India on a short-term basis to train local resources and support implementation.

"Our geographic expansion will primarily depend on the investment climate and availability of sufficient financial resources to help us remain operational there."

Vinay Kumar
COO, DIGITAL GREEN



Credit: Digital Green

Continuous monitoring and evaluation of operations

Inclusive businesses benefit from monitoring and evaluating performance of their products and services among target customers. Digital Green monitors its operations on a continuous basis, and this helps in iteration of the business delivery model and progressively address the needs and interests of the local community, resulting in greater uptake of GAP.

FUTURE PLANS

Digital Green's future expansion to other Sub-Saharan African countries will depend on availability of grant funding and enabling policy environments to minimize cost variation across the region. Another important factor is the presence and scale at which local organizations work with farmer groups. In the next few years, Digital Green aims to reach 20,000 villages in India and Sub-Saharan Africa.

CASE STUDY 2

GLOBAL EASY WATER PRODUCTS (GEWP)

Transfer format: Trade partnership

Countries of operation in Africa: India and Kenya

Global Easy Water Products (GEWP) manufactures and sells affordable micro-irrigation kits to small and marginal landholder farmers.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: GEWP aimed to increase its revenues and scale its impact, and was also keen to explore new markets that were less competitive and fragmented than India.</p> <p>Preparation: It conducted in-depth market research to find viable distribution channels and understand ways in which the drip irrigation systems would need to be customized.</p> <p>Format preference: It transferred through a trade partnership with a local distributor named Impetus Africa. This helped to establish an on-ground presence for GEWP with low risk and minimal investment.</p> <p>Country preference: It selected Kenya as market research indicated a lucrative opportunity for low cost drip irrigation systems in the country.</p>	<p>Management readiness: GEWP’s senior management initially invested time in the Africa expansion. However, this stretched management bandwidth, and GEWP finally decided to let its trade partner lead Africa transfer efforts.</p> <p>Financial readiness: It received equity funding from Acumen Fund to transfer in Africa, and also utilized revenues from sales in India to fund expansion.</p> <p>Operational readiness: It established a trade partnership with Impetus Africa as its sole distributor, and scaled up manufacturing to be able to supply to Impetus.</p> <p>Validating need for product/service: It validated the market potential for low cost irrigation kits through a scoping study and insights from Impetus Africa.</p>	<p>Distribution networks that interface with farmers: Presence of significantly large agro processors and export houses that work with small farmers to increase adoption, reduce customization and make the drip irrigation kits more affordable for the farmers.</p> <p>Access to water and cultivation of cash crops: Reliance on availability of sufficient water and cultivation of cash crops that are more remunerative and help reduce the payback period for the irrigation kits.</p> <p>Consumer education: Reliance on awareness among small farmers about the benefits of drip irrigation systems for uptake and adoption.</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Low awareness and limited purchasing power among farmers

Sector: High variations in crops and agricultural practices that necessitate customization

Business: Difficulty in on-boarding export houses and processing companies for access to smallholder farmers

KEY TRANSFER INSIGHTS

- GEWP and Impetus Africa identify and work with mission-aligned distribution partners to improve transparency and reduce supplier switching costs
- Impetus works with agro processors and export houses who have buy back agreements with small farmers for specific crops. Since the farmers supplying to them follow a defined package of agricultural practices and crop spacing, it is easy to customize the drip irrigation systems for them
- Impetus partners with agro processors and export houses that can extend small loans to farmers to purchase the kits. As these export houses and processors have a buy back agreement with the farmers, they are easily able to recover the loan instalments from the farmers



Credit: GEWP

Global Easy Water Products (GEWP) manufactures and sells affordable micro-irrigation kits to small and marginal farmers. The kits save between 30 and 50 percent water, improves crop yield between 30 and 70 percent, and reduce electricity consumption by 50 percent. GEWP operates in nine Indian states, which include Maharashtra, Madhya Pradesh, Gujarat, Rajasthan, Karnataka, Tamil Nadu, and Andhra Pradesh. It exports its products to Kenya.

HEADQUARTERS: Aurangabad, Maharashtra

YEAR OF FOUNDING: 2007

FOUNDERS: Amitabha Sadangi

LEGAL STRUCTURE: Private limited company

BUSINESS MODEL: Business-to-business (B2B)

SECTOR AND SUB-SECTOR: Agriculture, Irrigation

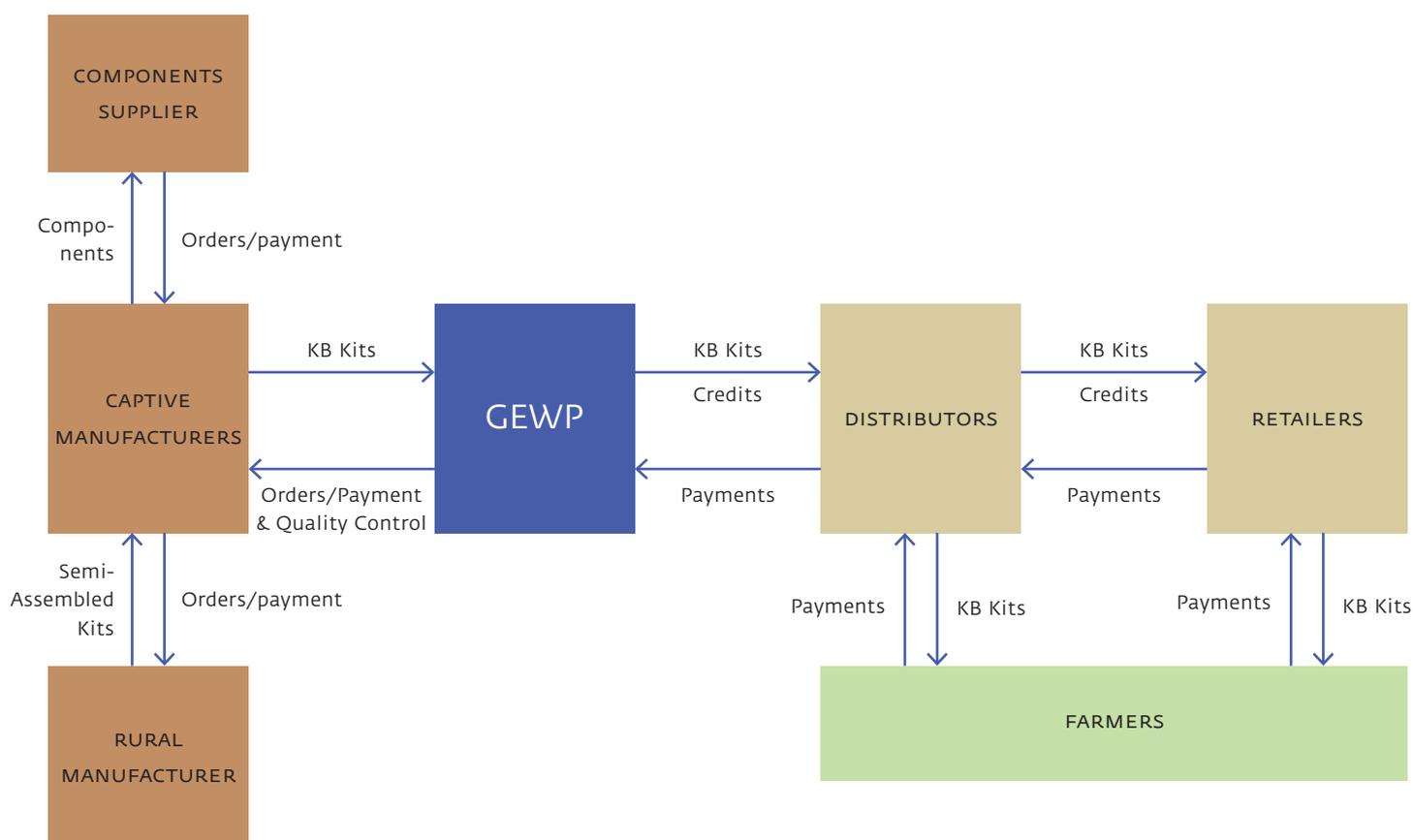
More than 80 percent of India's water is consumed by the agriculture sector⁹. Due to high dependency on rainfall and inefficient use of available water, small farmers are severely affected by water shortage, resulting in poor yields. Amitabha Sadangi founded International Development Enterprises India (IDEI), a not-for-profit organization, to innovate and provide efficient and affordable tools and market access to poor farmers to lift them out of poverty. His vision to make every small household a self-sustaining mini enterprise drove him to start two for-profit enterprises, Global Easy Water Products (GEWP) and Blue Wealth International¹⁰, to distribute low-cost drip and treadle irrigation pumps respectively to small farmers.

Set up in 2004, GEWP customizes affordable micro-drip irrigation kits under the brand name Krishak Bandhu (KB). It designs irrigation kits based on small-holder needs and establishes a local supply chain to manufacture and distribute them. It attracted investor interest from Acumen Fund in 2007 and was incorporated as a separate private entity. The funding from Acumen helped GEWP develop two new variants of the irrigation kits. It outsourced manufacturing of its products and expanded its portfolio to 50 products such as micro sprinklers, fertilizer tanks, and water storage devices.

In 2011, IDEI completely transferred its micro-irrigation-related operations to GEWP. This included the license to distribute all water-related technologies developed by IDEI. At this point Acumen Fund owned 30 percent of the company and the IDEI Employees Trust owned 70 percent. By 2011, GEWP was selling its micro-irrigation systems in nine states¹¹ in India and had directly impacted the lives of 750,000 farmers. In 2013, GEWP served approximately 21,000 customers and accrued revenues of \$2.3 million

In 2012, GEWP entered Kenya through a trade partnership with Impetus Africa. Founded by Manoj Mehta in September 2011, Impetus Africa aims to create a positive impact on the livelihoods of small farmers. Alignment of mission and presence of an investor active across two geographies helped connect GEWP and Impetus, catalyzed transfer of the model to Kenya.

FIGURE 5
GEWP'S OPERATING MODEL IN INDIA



GEWP'S BUSINESS MODEL IN INDIA

GEWP pioneered manufacturing of low-cost drip irrigation systems in India and is one of the few organized players that cater to small and marginal farmers. The advantages of drip irrigation systems is the cost reduction due to lower diesel use, lesser time taken to control weed growth, and savings on fertilizer costs as measured quantities can be delivered directly to the crop. Its micro drip irrigation kits are sold through local dealers to small farmers with less than two hectares of land.

Product innovation

GEWP's initial research showed that micro-irrigation technologies relied on rigid and expensive pipes that were not suitable to operate on small farms. GEWP, with the help of IDEI, developed an irrigation system based on flexible pipes with varying degree of thickness to suit small farms, which primarily cultivate closely-spaced crops such as vegetables and fodder.

Further, small farmers can purchase GEWP's micro-irrigation kits on an incremental basis, allowing them to experiment first on a small part of their land. This innovative approach to customizing the system allows for easy trials and incremental additions. The KB kit is a fine example of frugal engineering with costs being as low as \$130 per acre, compared to traditional systems priced at \$325 per acre.¹² Farmers can effectively recover costs from additional incomes generated from their farms within a year. Once the systems generate revenue through increased yields and lower production costs, small farmers can expand areas under drip irrigation.

9. World Bank Development Indicators database. Accessed in October 2014.
10. Blue Wealth International (BWI) was started in 2011 to distribute treadle pumps and other potential water-lifting devices among small farmers in areas where the water table is usually less than 28 feet deep.
11. Madhya Pradesh, Uttar Pradesh, Gujarat, Maharashtra, Karnataka, Orissa, Tamil Nadu, Andhra Pradesh, and Rajasthan
12. The cost could be reduced as recycled polyethylene was used to manufacture the pipes instead of fresh polyethylene.

Local manufacturing base

GEWP trains micro-enterprises in rural areas to manufacture KB products and ensures they maintain required technical standards. Typically, it outsources manufacturing through exclusive and non-exclusive contracts. It enters into exclusive agreements with captive manufacturers in Tamil Nadu, Maharashtra, and Madhya Pradesh to develop drip irrigation systems. It also signs non-exclusive agreements with local rural manufacturing units to produce other components. In all, production is outsourced to over 30 local manufacturing units.

GEWP reduces its cost of distribution due to its network of geographically distributed manufacturing vendors, thus reducing the delivery cost of the kits and generating local employment. GEWP channels its cost savings from manufacturing to increase dealer margins, introduce sales promotions schemes, and offer customers competitive prices.

Supply-chain management

GEWP identifies and trains local sales teams across states to reach larger numbers of small farmers. GEWP's sales officers target about 40 to 50 customers per month. Potential customers visit demonstration plots or farms of existing customers. Its network includes distributors of agri-inputs, hardware, and exclusive drip irrigation kits. GEWP also trains dealers and provides them with marketing materials and warranty cards. It currently distributes through more than 1000 dealers across India.

EXPANSION OF GEWP'S BUSINESS MODEL IN AFRICA

The Kenyan agriculture sector contributes nearly 24 percent to the country's GDP and provides employment to over 70 percent of its population¹³. However, almost half of Kenya's total agricultural output is from subsistence farming and 80 percent of farmland is classified as arid and semi-arid, with low and erratic rainfall¹⁴. Moreover, food production is low with frequent crop failures, which impacts livelihoods of small and marginal farmers.

IDEI had extensive work experience in the African agriculture sector and spotted a market opportunity in the low-cost, drip irrigation sub-sector in Kenya. GEWP expanded to Kenya in 2012 through a trade partnership with Impetus Africa.

"The advantage of such a trade partnership model is that GEWP gets a market for its products in East Africa. Impetus, which understands the local context, is able to tap into its network and increase the sale of products. Agro-processors and farmers benefit from receiving higher produce and lower production costs."

Manoj Mehta

FOUNDER, IMPETUS AFRICA

Management Bandwidth

GEWP's management team had significant experience working in the agriculture sector across India and Africa. Hence, initially the same team was tasked with Africa operations. However, the firm soon began to face challenges from splitting management time between the two regions. It lost market share in the low-cost drip irrigation market in India even as expansion into Kenya was slowly taking off. GEWP realized that growth in Africa would come at the cost of market share in India. To address this challenge, GEWP decided to adapt its approach and rely completely on support and services provided by its partner, Impetus Africa, to take its Africa operations forward.

Format and Country Selection

Assessing the market opportunity in the low-cost, drip irrigation sub-sector in Kenya

Kenya has a sizable market for low-cost drip irrigation solutions. It has more than 5 million small farmers¹⁵ who mostly practice subsistence farming in arid and semi-arid farmland with low and erratic rainfall. Only 20 percent of farms have access to piped water¹⁶, while the rest are dependent on springs and rain water. Moreover, only 2 percent of small farmers have access to drip-irrigation¹⁷ systems. GEWP validated the demand through a market research study in 2012, which specifically focused on small farmers and established customer willingness to pay for KB kits.

13. World Bank Development Indicators database. Accessed in October 2014.

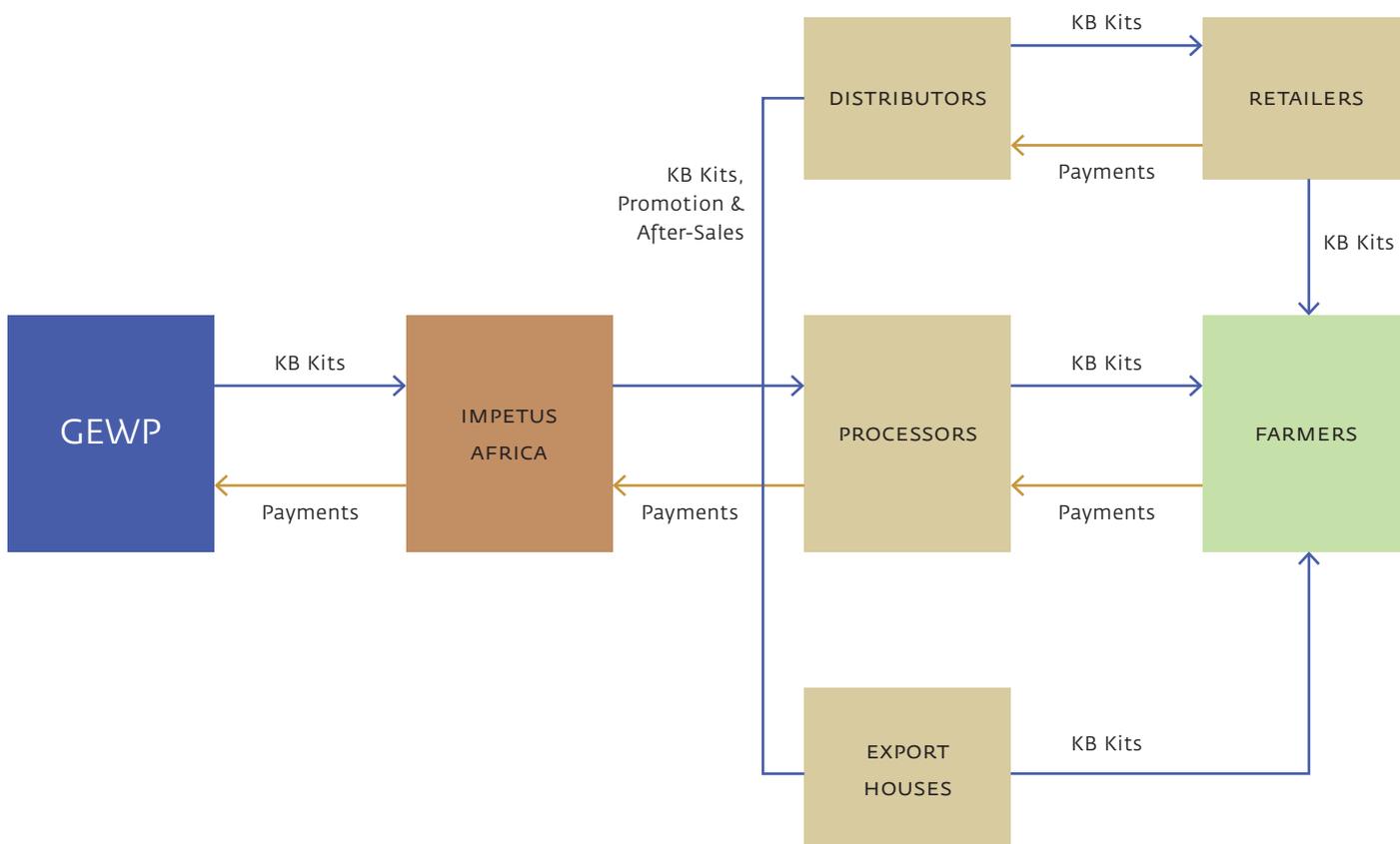
14. World Bank Development Indicators database. Accessed in October 2014.

15. African Development Bank, 2011.

16. Kenya Census, 2011.

17. African Development Bank, 2011.

FIGURE 6
IMPETUS'S OPERATING MODEL IN KENYA



Taking a trade partnership approach to build market share in a low-cost manner

GEWP initially planned to expand operations by mobilizing local resources to manufacture micro-drip irrigation kits in Africa. Its market scoping study to identify opportunities for low-cost irrigation kits in Kenya indicated that while there was significant market potential, setting up a manufacturing unit in Kenya's poorly developed rural areas would be expensive. Moreover, GEWP realized it would need two to three years to demonstrate the efficacy of its products to farmers. It therefore decided to pursue expansion through a trade partnership, as this was seen as a low-cost and low-risk operating model (Figure 6). The trade partnership model also ensured on-ground presence through a local partner who would build credibility among farmers. To maintain low costs, GEWP decided to export KB kits manufactured in India to Kenya and established a partnership with local firm Impetus Africa, which understood the local context and could leverage existing relationships and networks to sell the kits.

Financial Readiness

GEWP received initial funding of \$1.03 million from Acumen to scale up operations in Kenya. It also relied on revenues from the sale of KB kits.

Operational Readiness

Adopting a participatory approach to roll out new technology

Impetus's go-to-market strategy in Kenya involved understanding the impact of the irrigation kits on livelihoods of small farmers and its usability in the local context. In 2012, it ran a pilot to demonstrate the efficacy of the KB kits in improving farm yields to farmers and potential distribution partners such as Equator, a well-known agro-processor, and Frigoken, a well-known export house. These distributors have direct interface with a large number of contract farmers who supply specific agriculture commodities to them under buy-back agreements.

Designing a financial product to suit small and marginal farmer capacity to pay

The majority of small and marginal farmers have limited financial capacity to pay up front for kits. Moreover, costs of micro-loans are very high in Kenya. To address this challenge, Impetus Africa plans to launch a financial product to enable larger numbers of farmers to gain access to KB drip irrigation

kits. With this financial product, agro-processors and export houses can deduct the costs of the KB kits from payments that they make to farmers when buying their crops.

FIGURE 7
TRANSFERRING GEWP FROM INDIA TO AFRICA

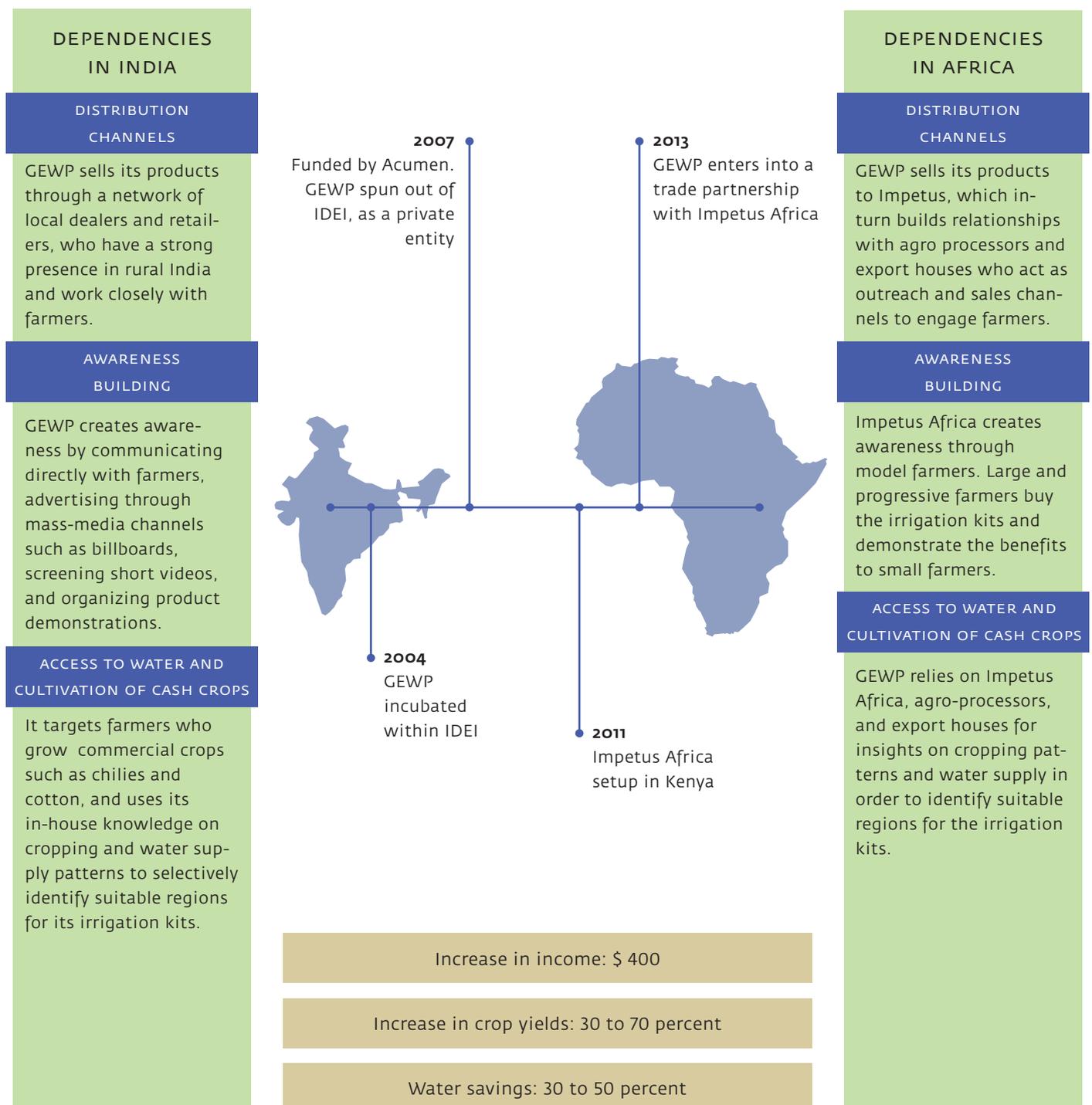
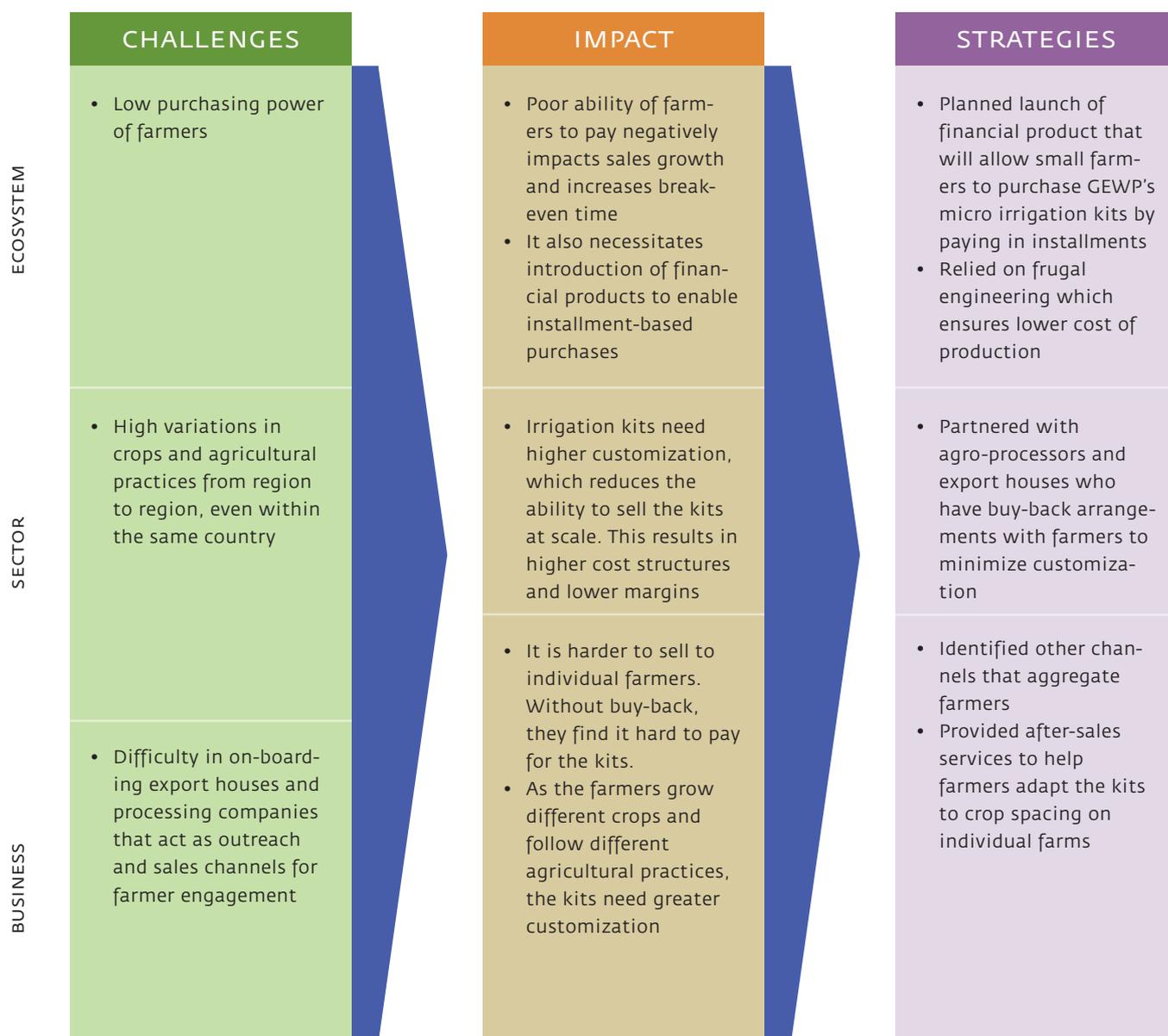


FIGURE 8
CHALLENGES FACED BY GEWP IN TRANSFER AND STRATEGIES ADOPTED TO ADDRESS THEM



Identifying strategic trade partners with similar vision to expand and scale

Product-based inclusive businesses opt for trade partnerships if unable to efficiently transfer production and marketing to new geographies. Trade partners leverage their networks and knowledge of local conditions to create brand identity, build credibility, and thus, create markets for the products. This form of partnership model entails more engagement than a typical export partnership with multiple distributors. Impetus helped

GEWP build the market for its drip irrigation kits in Kenya by promoting the product, providing after-sales service, identifying channels, and designing financial products to improve uptake. Vision alignment with Impetus ensured that GEWP incurred lower supplier switching costs and that its products were affordable to small farmers.



Credit: GEWP

Providing financial access and bundling products to increase uptake

Inclusive businesses provide affordable goods and services to low-income customers. However, product uptake is often low due to their inability to make upfront and lump sum payments. This requires businesses to structure innovative financial products and facilitate credit linkages to increase product affordability. Impetus works with agro-processors and large export houses that can extend micro-loans to small farmers to purchase kits against payments for their produce. In addition, Impetus plans to build relationships with MFIs and NGOs to bundle similar products for small farmers. Once the irrigation kits demonstrate their efficacy to farmers, Impetus believes that uptake will improve.

Targeting agro processors and export houses to reduce customization of products

Inclusive businesses in the low-cost irrigation sub-sector must consider key parameters such as size of land holdings, type of cultivated crops, water availability, crop cycles, and average incomes of farmers to ensure successful adoption of their products. In Kenya, seasonal variations in crop cultivation are high. Customization of irrigation kits based on type of crops is a challenge and will involve substantial cost additions. Impetus, therefore, works with agro-processors and export houses to distribute standard irrigation kits as they decide the crops in advance with the farmers. Since specifications are fixed, this arrangement reduces customization levels of the kits and helps GEWP achieve volumes efficiently.

"Agro-processors already hold a good relationship with farmers. The uptake of products will be faster since farmers trust that they are being sold something useful. Moreover, agro-processors can effectively monitor repayment of loans from farmers."

Manoj Mehta
FOUNDER, IMPETUS AFRICA

CASE STUDY 3
MANASA AGRO

Transfer format: Partially-owned subsidiary in Malawi, Public Private Partnership in Ghana
Countries of operation: India, Malawi, and Ghana

Manasa cultivates lemon grass and processes it to derive oil which it markets in India and in international markets. It carries out cultivation on leased and owned land, as well as through contract farming.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: Manasa's operations in India faced the twin challenges of highly fragmented landholding and high cost of land and labor, and it was keen to find more favorable market environments in other countries.</p> <p>Preparation: It restructured the management team ahead of expansion in order to be able to dedicate full-time senior personnel to operations in new markets.</p> <p>Format preference: It set up a company named Agritech in partnership with a Malawian farmer who owns a 40% stake in it. This helped reduce Manasa's risks and afforded greater control over its business in Malawi.</p> <p>Country preference: It selected Malawi since it offered a lucrative business environment for land and labor, and cheap import of equipment and inputs.</p>	<p>Management readiness: Manasa set up a separate team to focus on Africa operations, and ensured clarity of roles and responsibilities within the team.</p> <p>Financial readiness: It invested revenues from India operations to expand to Africa and is completely reliant on its own capital reserves.</p> <p>Operational readiness: It identified the agricultural commodities that it could grow and market profitably in African countries and built internal capacities to cultivate and process. It established key relations with local stakeholders.</p> <p>Validating need for product/service: It undertook extensive field visits to understand the agriculture sector in Africa, and validated the potential for growing selected agricultural commodities in destination countries.</p>	<p>Land availability: Manasa has a high degree of reliance on adequate availability of arable land.</p> <p>Human Resources: It requires access to low cost labor for cultivation and post harvest processing and packaging operations.</p> <p>Infrastructure: It needs adequate road and transportation / logistics infrastructure in order to move its produce from farm-gate to processing plants and then to the markets.</p> <p>Policy: It relies on favorable government outlook in the form of policies that create easier access to land and labor, and decreased or no import duties on agricultural implements and inputs.</p>

KEY CHALLENGES IN TRANSFER

- Ecosystem:** Inadequacy of infrastructure such as road and transport services, and limited presence of organized logistical fleets
- Sector:** Non-availability of inputs and farm equipment in rural and last mile areas
- Business:** Limited availability of information and lack of local knowledge and context amongst the Manasa team

KEY TRANSFER INSIGHTS

- Manasa established partnerships with government investment agencies and local stakeholders that helped in removing bottlenecks while establishing its operations
- It put in place rigorous planning processes to ensure timely delivery of inputs and smooth functioning of its operations
- It ensured that local people are hired and trained not only in good agricultural practices but also in management of operations

Set up in 2008, Manasa engages in captive cultivation of lemon grass through contract farming and on self-owned land. It processes the lemon grass oil and markets it in India and abroad. In 2009, it expanded to Malawi where it cultivates maize, pigeon pea, and soybean. Manasa also entered Ghana in 2013. It will set up integrated agriculture enterprises to help farmers improve paddy production and build forward market linkages with small and medium rice mills.

HEADQUARTERS: Hyderabad, Telangana, India

YEAR OF FOUNDING: 2008

FOUNDER: RSN Raju

LEGAL STRUCTURE: Private limited company

BUSINESS MODEL: Business-to-business (B2B)

SECTOR AND SUB-SECTOR: Agriculture, integrated services

MANASA GROUP'S BUSINESS MODEL IN INDIA

Manasa undertakes contract farming with small farmers and develops crop-specific integrated models that can be emulated by local farming communities. It has a turnover of \$1.6 million, including \$600,000 from farming. It has improved livelihood and farm incomes of over 500 small farmers in India (Karnataka and Odisha). Manasa's business is entirely self-financed. It expanded to Malawi in 2009, where its operations are anchored by Agritech. Manasa owns 60 percent stake in Agritech, and 40 percent is owned by its Malawian partner.

Systematic approach to farmer engagement

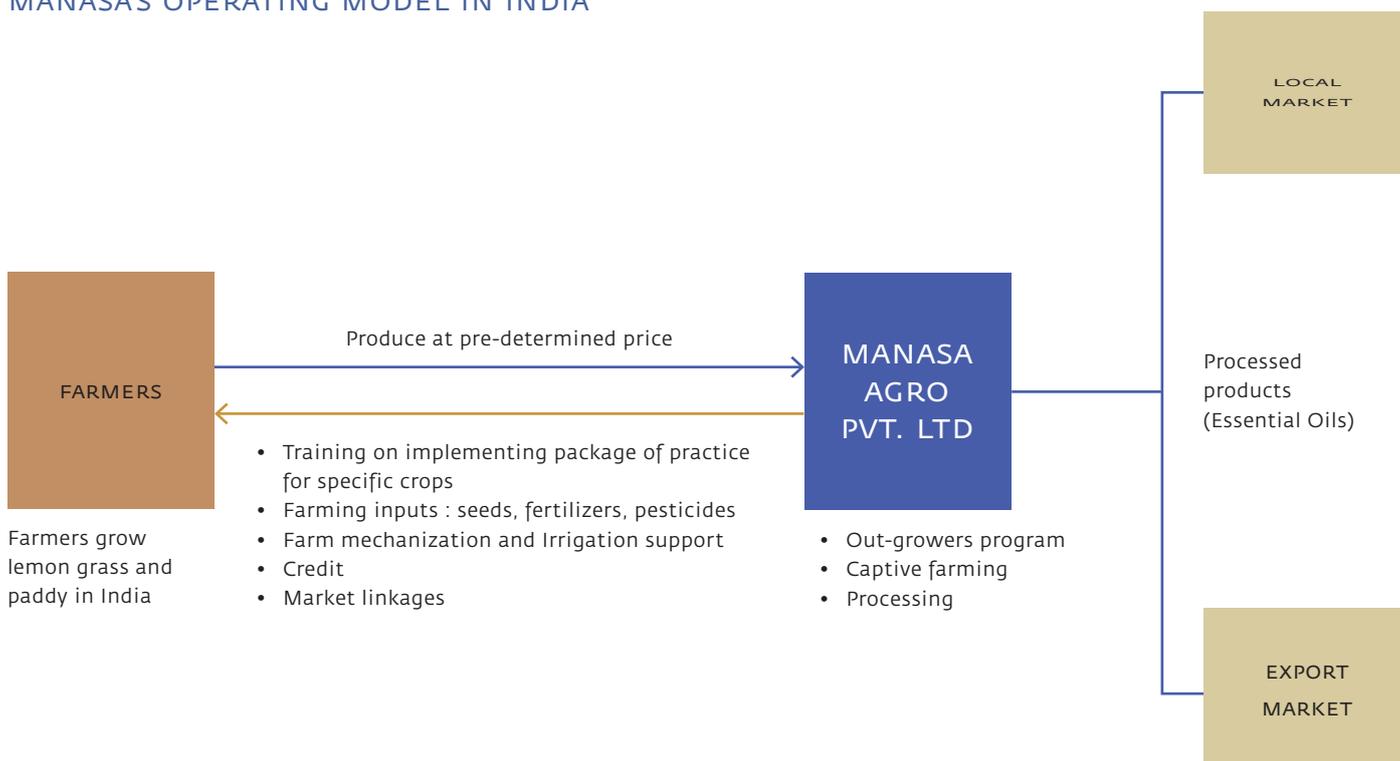
Manasa's strategy entails land procurement and captive cultivation of crops. It demonstrates its approach through captive cultivation and acquires further land on contract from farmers. Manasa only takes up only 25 percent of small farmer lands on contract to cultivate lemon grass as the farmers need to grow food crops to meet their needs. In addition to providing integrated services such as technology, farm inputs, and market linkages, it builds capacities of small farmers through training in sustainable agricultural practices. Manasa's agricultural interventions are complementary to the crops cultivated by farmers. Farmers benefit as they receive additional income from lemon grass farming and also gain new and better farming skills. Once planted, the crop is harvested two to four times a year for five years and yields 2-4 metric tons (MT) per acre. Manasa signs buy-back agreements at assured prices. Farmers earn approximately \$32 per MT. Each farmer earns \$167 per acre per year.

Marginal and small land holdings constituted 85 percent of total operational farmland in India in 2011¹⁸. The average size of these land holdings reduced from 2.28 hectares in 1970-71 to 1.16 hectares in 2010-11¹⁹. The declining size of land holding impacts agricultural productivity, farm mechanization, and sustainability of farm incomes. Manasa Agro, promoted by RSN Raju in 2008, aims to improve incomes of small tribal farmers by helping them improve farm productivity and per unit price realization. It does this by helping farmers adopt good agricultural practices (GAP) to improve farm productivity, providing access to quality inputs, and offering to buy their produce under a pre-executed buy-back agreement.



Credit: Moniruzzaman Mohammad

FIGURE 9
MANASA'S OPERATING MODEL IN INDIA



EXPANSION OF MANASA GROUP'S BUSINESS MODEL IN AFRICA

Manasa was keen to explore global expansion to offset risks and challenges it faced in India, such as the fragmented farm lands and increasing land and labor costs. Malawi, with its low labor costs and availability of land, appeared to be an ideal destination for business transfer. Further, the Malawian integrated services industry in agriculture is nascent and growing, with a few small and medium-sized enterprises providing food processing services. Manasa realized the immense market potential in providing end-to-end agricultural services, particularly in production and processing of maize, pigeon pea, and soyabean. It expanded to Malawi in 2009.

Management Bandwidth

Forming a lean team with the right mix of experience for expansion

Manasa allocated a senior manager to build relationships and gather on-ground intelligence on doing business in Africa. It decided to have a separate team to look after its Africa operations. A dedicated senior manager was appointed to lead Malawian operations and key personnel hired to manage strategic and operational responsibilities. Additionally, experienced personnel from India were assigned. This strengthened the

Africa team and leveraged available management bandwidth in India to quickly resolve strategic issues.

Format and Country Selection

Conducting extensive field visits to select the country for Manasa's operations

RSN Raju, Manasa's promoter, travelled to various African countries like Nigeria, Congo, Tanzania, Kenya, and Malawi to assess their suitability for expansion. He selected Malawi as it offered a secure environment, which was a critical factor influencing choice of country. Some organizational dependencies that led to the decision included affordable resources, strong demand in local markets, and an enabling regulatory environment. He also found that Manasa could access cheap land and labor in Malawi to run operations. The country had favorable agro-climatic conditions, water, and locally available

18. Agriculture land holdings in India. NABARD Rural Pulse. Issue 1. Feb 2014.

19. Agriculture land holdings in India. NABARD Rural Pulse. Issue 1. Feb 2014.



Credit: Mohammad Rakibul Hasan

managerial human resources. Crops like maize, pigeon pea, and soybean were in great demand in the local markets. Labor laws, investment promotion policies and regulations governing import of inputs and equipment from South Africa were favorable.

Setting up a partly-owned subsidiary to reduce risks and exercise greater control over its business in Malawi

The regulatory environment in Malawi does not allow foreign ownership of land. To facilitate faster transfer, Manasa partnered with a Malawian farmer to set up a partly-owned subsidiary, Agritech, through which it could acquire land for cultivation. Manasa owns a majority stake (60 percent) in Agritech and therefore has greater control. The minority partner owns 40 percent and shares business risks with Manasa.

Manasa's entry into Ghana was through the public-private partnership route. Its success in Malawi drew the attention

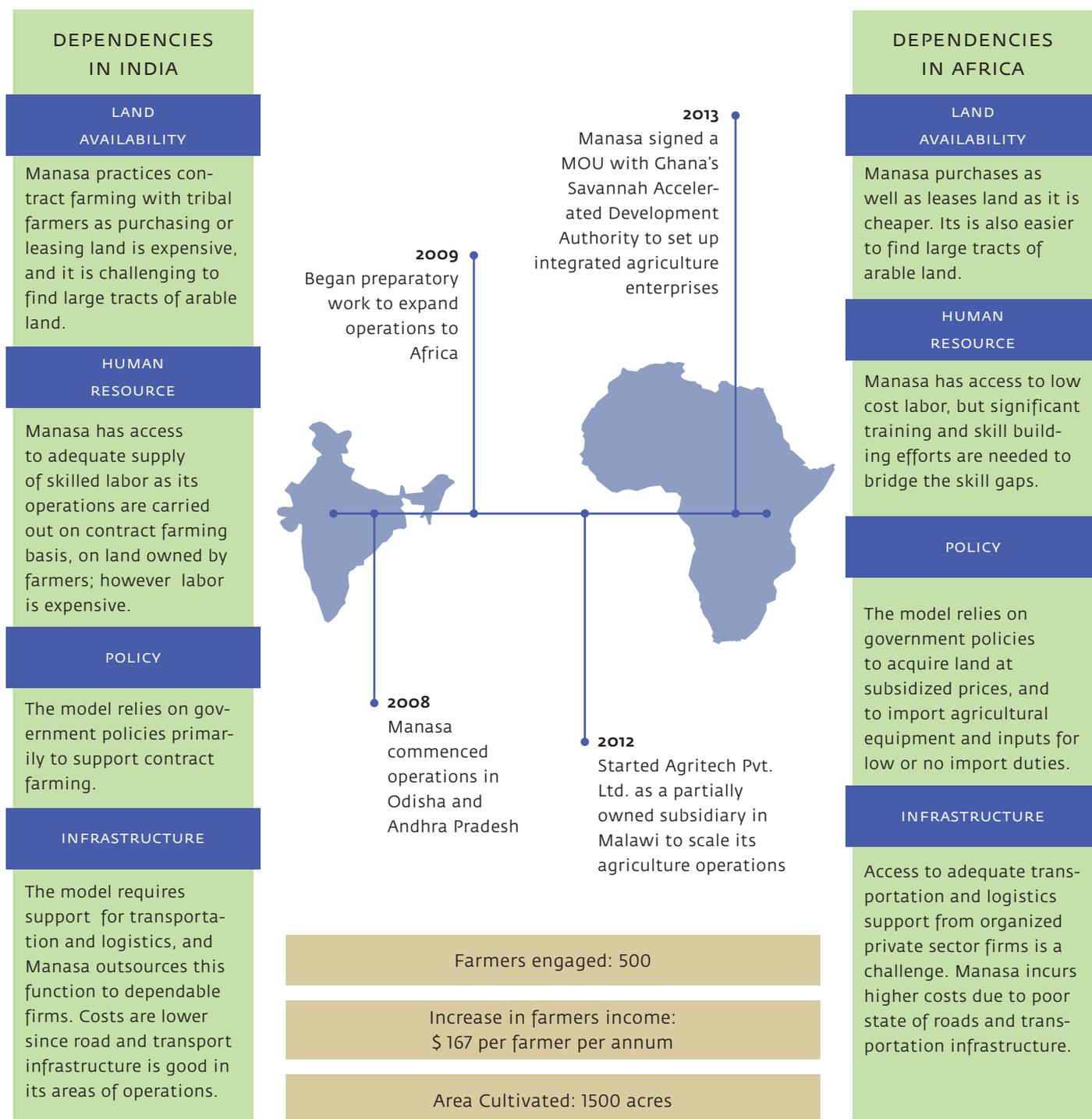
of a Ghanaian government agency, the Savannah Accelerated Development Authority (SADA), which focuses on growth and sustainable development to increase incomes of small farmers. Manasa signed a memorandum of understanding (MoU) with SADA in 2013 to set up integrated agriculture enterprises in Ghana to help farmers improve paddy production and build forward market linkages with small and medium-sized rice mills.

Financial Readiness

Relying on capital reserves and internal funding to expand to Africa

Manasa considered expansion after it strengthened its financial position in India. Revenues from Manasa's India operations were invested in transferring to Malawi. This approach paid off. Africa operations account for around 80 percent of the group's revenues today, making the expansion a high-return investment. An assured cash flow, positive net-worth, and strong

FIGURE 10
TRANSFERRING MANASA FROM INDIA TO AFRICA



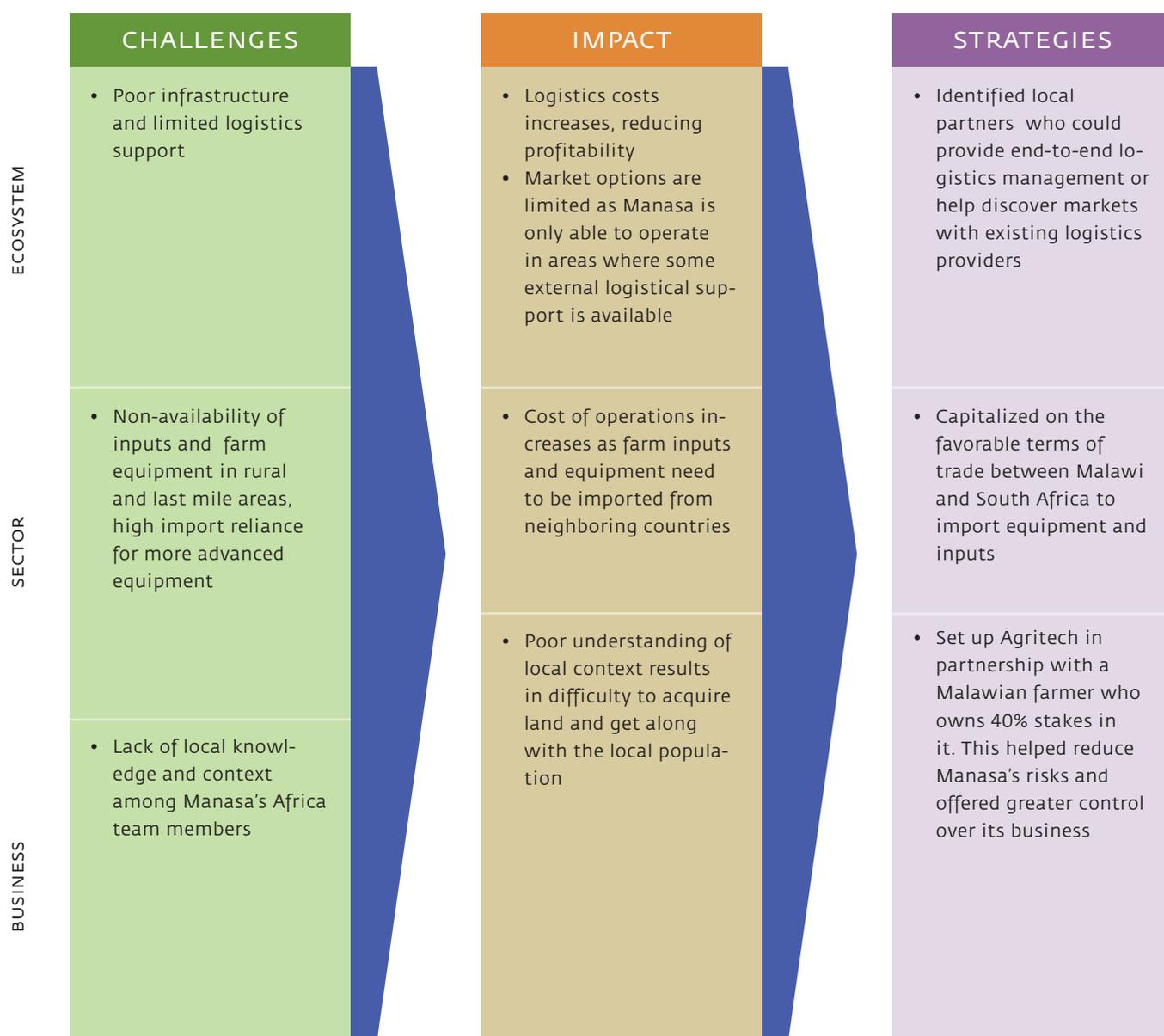
capital reserves in India helped Manasa in its expansion.

Operational Readiness

Manasa realized it could easily transfer its operating model to Malawi with minimal adaptations. It, therefore, continued to follow its India strategy of procuring and developing land, cultivating crops to demonstrate the model's effectiveness, and

acquiring farmers for contract farming. It is also marketing the produce in local and international markets. Regulation regarding land acquisition however had to be addressed carefully. To become operationally ready in Malawi, Manasa selected a format that facilitated easy acquisition of land. It established networks with local government agencies to acquire land. It currently cultivates over 1,500 acres of land in Malawi.

FIGURE 11
CHALLENGES FACED BY MANASA GROUP IN TRANSFER
AND STRATEGIES ADOPTED TO ADDRESS THEM



Understanding government policies and forging key partnerships

Inclusive businesses depend on enabling government policies for land procurement and cultivation, access to inputs and market, technology transfer, and promotion of training and capacity-building programs for farmer groups. Before expanding to Africa, Manasa evaluated regulations related to land procurement and cultivation in various countries. It undertook numerous visits to government agriculture and related

departments and connected with local farmers to better understand local conditions. It entered into a partnership with a local farmer to set up Agritech to acquire land. This partnership helped to connect with local government investment agencies, and thus, helped it acquire land quickly and access tax benefits through value-added tax regulations.

"When compared to India, arable land in Africa is not fragmented and is extremely fertile. Also, government is keen to provide us land if we are able to generate positive impact among small farmers. Thus, a move to Africa was a natural choice for us."

RSN Raju
FOUNDER, MANASA GROUP



Credit: Mohammad Rakibul Hasan

Focusing on core competency

In under-developed agricultural markets with poor supply-chain linkages, inclusive businesses need to focus on core competencies and leverage local partners to manage functions such as logistics that need local knowledge. Manasa transports inputs and commodities from Dar-es-Salaam port in Tanzania, which is almost 1600 km away from Malawi. It realized that logistics was best left to local players for speed and efficiency. Hence, while Manasa focused on cultivation of pigeon pea, maize, and soybean, it left the logistics to be handled by the partners.

Ensuring inclusion of local people to build trust

Inclusive businesses will benefit from adopting business strategies that build capacity and integrate local talent in operations. This not only builds trust, but also facilitates smooth operations, particularly when working with large numbers of small farmers. In Malawi, around 80 percent of Manasa's management team is local.

Inclusive businesses in agriculture also benefit from providing small farmers access to credit to encourage them to take up sustainable farm practices. In Malawi, a majority of small farmers engage in subsistence farming and hesitate to adopt good agricultural practices as they cannot afford it. Loans, when available, are expensive, and interest rates can be quite high. To encourage small farmers adopt good agriculture practices, Manasa offers inputs and farm mechanization technologies through interest-free loans.

FUTURE PLANS

"In the next few years, we plan to cultivate around 2,500 acres in Malawi. Our Africa operations are highly profitable as margins are higher."

RSN Raju
FOUNDER, MANASA GROUP

Manasa plans to scale up operations in Africa, especially in Malawi and Ghana, over the next two years. It plans to launch a monogram by the end of this year to establish a strong brand for its commodities in India and Africa. It aims to partner with international donor agencies and non-governmental organizations that already have huge ground presence and wide network.

CASE STUDY 4

SHREE KAMDHENU ELECTRONICS (SKEPL)

Transfer format: Trade partnership
Countries of operation in Asia: India and Nepal

SKEPL manufactures and distributes automated milk collection systems (AMCS) under the brand name "Akashganga" that help to automate the milk collection process at the village level.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: SKEPL was keen to grow its revenues and build global markets for its products, and hence sought international markets with favorable competitive landscape for its product.</p> <p>Preparation: It identified the right distribution channel and conducted a pilot to assess the need for AMCS in Nepal.</p> <p>Format preference: It preferred trade partnership as a format for expansion since it demanded lesser time and attention from senior management based in India.</p> <p>Country preference: It selected Nepal owing to an strategic partnership with Winrock International. The absence of competition and presence of dairy farmer cooperatives also made Nepal a favorable destination.</p>	<p>Management readiness: SKEPL initially assigned senior managers to lead expansion to Nepal, and gradually decreased their involvement to overseeing supply chain management and service-engineer training once operations stabilized.</p> <p>Financial readiness: It initially funded expansion through its own capital reserves, and given the higher margin for AMCS in Nepal, was soon able to recover product development and operational expenses from product sales in the country,</p> <p>Operational readiness: It forged an alliance with the international NGO, Winrock International, which helped it in running a pilot in Nepal,</p> <p>Validating need for product/service: A pilot was conducted to test market demand for the product and customer willingness to pay</p>	<p>Customer Group: SKEPL requires the presence of organized and well-networked dairy cooperatives that can afford and support the adoption of AMCS,</p> <p>Community Endorsement: It needs support from community influencers who can help to endorse AMCS and build credibility for SKEPL within the local community,</p> <p>Marketing and after-sales support: It relies on presence of private sector firms that it can partner with for last-mile marketing and after-sales support,</p> <p>Domestic production of milk: It is more viable in countries with high domestic production of milk, which leads to faster break-even for consumers,</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Inadequate market data on the dairy sector in Nepal
Sector: Sparse private sector activity in last-mile marketing and after-sales services
Business: Pricing of the AMCS makes it unaffordable for small cooperatives, who cannot afford the down-payment to buy AMCS

KEY TRANSFER INSIGHTS

- SKEPL planned its move into the dairy sector in Nepal with the help of Winrock International that already had an existing relationship with dairy cooperatives
- It established that the local market met its business dependencies such as domestic milk production capacity and presence of well-developed cooperative system ahead of committing resources to expansion
- It invested considerable time to identify and train local staff for maintenance and operations in Nepal

SKEPL manufactures automated milk collection systems (AMCS) under the brand name Akashganga. The system automates milk collection at the village level. The Akashganga system increases efficiency and transparency of milk collection, improving quality of milk and incomes of dairy farmers. Since its inception in 1996, it has installed over 5,000 automated milk collection systems and impacted the lives of 1.5 million farmer households in India and Nepal.

HEADQUARTERS: Gujarat

YEAR OF FOUNDING: 1996

FOUNDERS: Sulax Shah, Alpesh Shah, Gaurang Shah, Nilesh Shah, Sachin Shah, Ujval Parghi, and Vipul Shah

LEGAL STRUCTURE: Private limited company

BUSINESS MODEL: Business-to-business (B2B)

SECTOR AND SUB-SECTOR: Agriculture, dairy



World milk production has increased sharply from 80 million tons in 2000 to 132 million tons in 2012.²⁰ India is the world's largest milk producer, accounting for more than 16 percent of production worldwide. This success is attributed to India's producer-owned and managed cooperative system. However, India's dairy sector faces challenges such as low yields, poor quality milk products, polluted and unclean environment, and manual handling delays. As a result, Indian milk does not meet export standards. The dairy value chain is inefficient as well; village-level milk aggregators pay the same price for all types of milk. Better quality milk or milk with a high fat and solid-not-fat (SNF) content²¹ sells at the same price per unit as poor-quality milk with low fat and SNF. Therefore, farmers do not strive to improve the quality of milk. As payments are made on per unit volume basis, farmers tend to increase milk volumes by adding water.

"We would like to expand into countries where competition is low and we have a 'first mover' advantage."

Ujval Parghi
CO-FOUNDER, SKEPL

Sulax Shah founded Shree Kamdhenu Electronics Pvt. Ltd. (SKEPL) in 1996 to develop IT-based tools that improve efficiency and productivity of India's dairy value chain. SKEPL designs and manufactures technological solutions such as electronic weighing scales, electronic hardware, PC assembling, software development, and automated milk collection systems (AMCS). The low-cost AMCS measures volume of milk, fat, and SNF. It calculates payment due to the farmer based on quality and quantity and prints these details for farmer records. By monetizing quality, AMCS incentivizes farmers to focus on improving both quality and volume.

SKEPL developed its first product under the brand name Akashganga, which included AMCS and Milk Analyzer, in 2003 with a funding of ~\$40,000 from Aavishkaar India Micro Venture Capital Fund (AIMVCF). It received its first order from the Amul Dairy Cooperative and is currently operational in 10 states in India. In 2007, Winrock International (WI), an international NGO, sought to introduce the Akashganga product in the Deodhar Cooperative Society in Nepal. SKEPL formed a strategic alliance with WI and customized the product to meet local needs. The successful implementation in Deodhar attracted interest from other dairy cooperatives in Nepal. SKEPL has since sold over 300 units in Nepal through trade partnerships with dairy cooperatives.

²⁰. Nepal Dairy Development Board. 2012

²¹. Milk comprises of water, fat and SNF (i.e. solids that are not fat). The price of the milk will vary based on the percentage of these elements present in the milk.

SKEPL'S BUSINESS MODEL IN INDIA

SKEPL's business model hinges on providing technology-based products to help milk cooperatives become more efficient. Initially, SKEPL installed systems in five villages to study and monitor operations for two months (Figure 12). However, after a month, customers were willing to pay to retain machines. Over 90 percent of its customers are dairy cooperatives.

Technology development

SKEPL initially supplied microprocessor-based automatic milk collection systems. It later introduced the IT-based AMCS to cooperative societies (Figure 13). The products are developed and manufactured in-house. Various components for the

"Unlike traditional quantity and quality measuring techniques, an AMCS machine can measure crucial variables in a matter of seconds in front of the farmer. This ensures he is paid for every drop of milk that he brings to the cooperative."

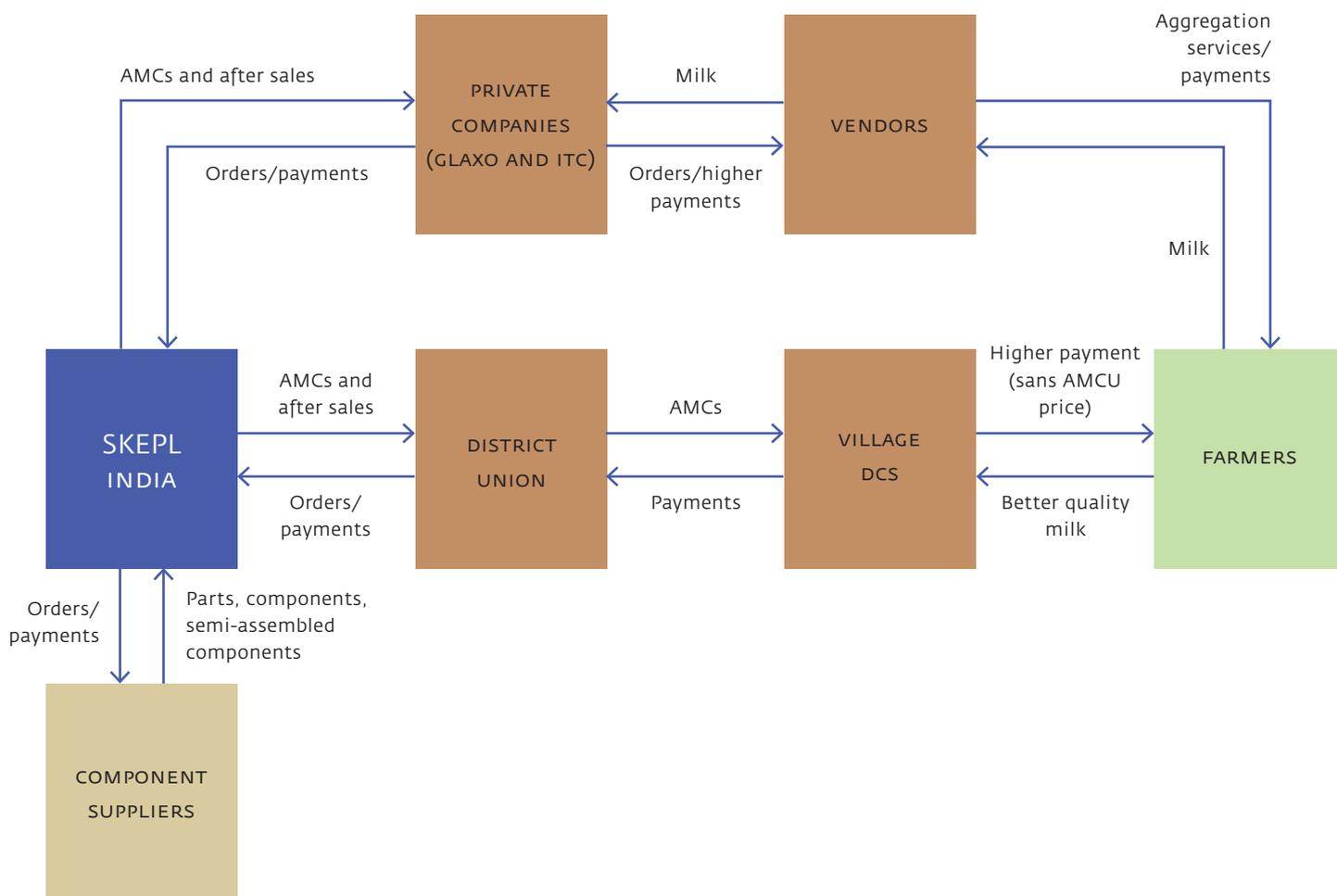
Ujval Parghi
CO-FOUNDER, SKEPL

milk analyzers are imported from Belgium and computers are bought in India. The company establishes long-term relationships with most of its suppliers.

FIGURE 12
KEY ELEMENTS OF SKEPL'S BUSINESS MODEL



FIGURE 13
SKEPL'S OPERATING MODEL IN INDIA



Product customization and pricing

SKEPL customizes AMCS to measure fat, SNE, and water percentages to suit a variety of customers in the dairy sector. The entire process is computerized and accessible in local languages. The systems cost anywhere from \$1,416 to \$2,066. By using simple, low-cost IT-enabled tools, SKEPL maintains a competitive price compared to similar systems available in the market.

Market development

SKEPL offers credit options with payment periods ranging from one to three months. It also offers free trials of AMCS to demonstrate its value, convenience, and usability. The free trials not only prove effective at installation sites, but also increase visibility in neighboring societies, which also purchase it. SKEPL provides after sales and maintenance services, and trains two or three staff members at each dairy society to operate and maintain its systems. SKEPL advertises in magazines and sponsors promotional events at dairy fairs in local communities to build the market for its products.

EXPANSION OF SKEPL'S BUSINESS MODEL IN NEPAL

Annual milk production in Nepal was about 1.45 million tons and per-capita availability of milk was around 52 liters per year in 2013.²² Milk production increased 1.5 times from 11.7 million tons in 2000 to 17.1 million tons in 2012.²³ As in India, the dairy sector in Nepal faces multiple issues of subsistence farming, poor quality milk, and insufficient skill and knowledge among farmers about dairy production and management.²⁴ Winrock International (WI) partnered with SKEPL to introduce AMCS in Nepal to improve efficiencies of milk-collection cooperatives.

Management Bandwidth

SKEPL's senior management team was involved in efforts to understand the dairy sector and the AMCS market, as well as to choose the right trading partner in Nepal. SKEPL collaborated with Winrock International when the latter approached it as it offered an opportunity to explore a new market with limited investment. However, the expansion to Nepal required significant amount of travel and senior management time. To address this strain on management bandwidth, SKEPL explored trade partnerships with large district co-operatives that could help scale outreach quickly.

Currently, SKEPL does not have an office in Nepal. MDC, the trading partner, manages operations (marketing and after-sales service) in Nepal. SKEPL manufactures AMCS and provides training to service engineers appointed by MDC. This format of transfer considerably reduces time spent by senior management in Nepal.

Credit: Srinivas Rao

Format and Country Selection

Evaluating market maturity for country selection

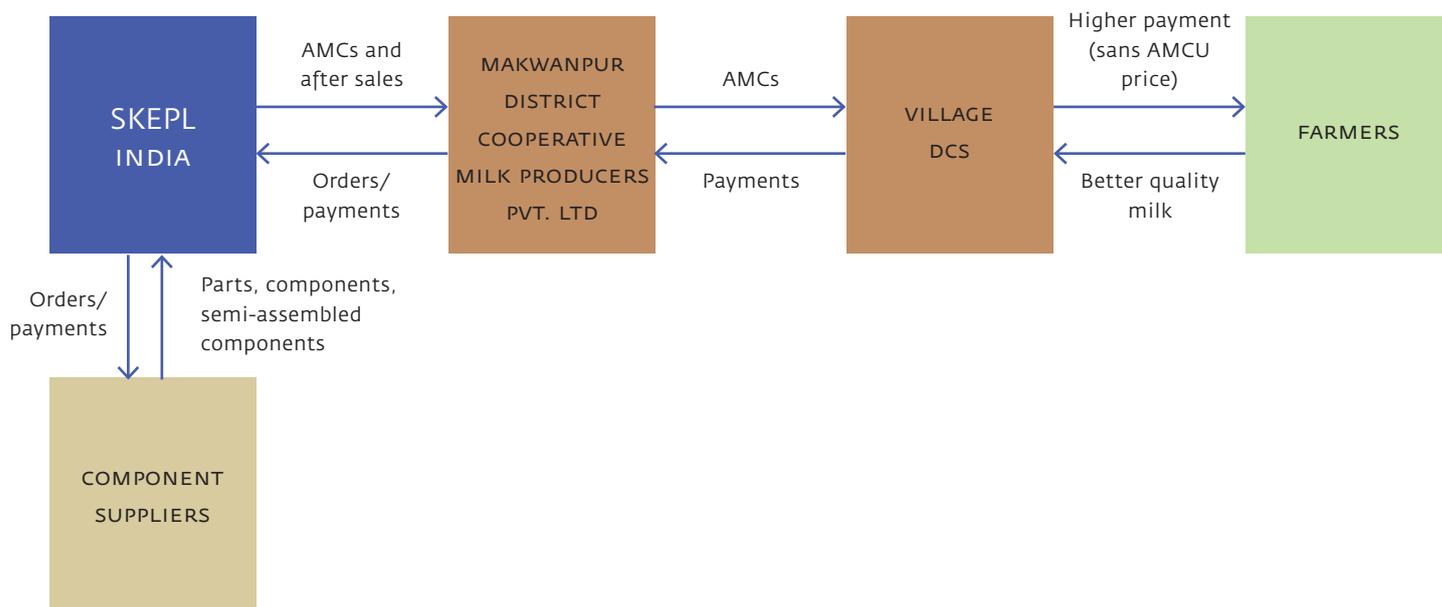
SKEPL planned to expand into countries that had significant milk production capacity. Its expansion also depended on the presence of a well-developed cooperative system, as AMCS is designed to operate in a cooperative set-up with organized and centralized milk collection. SKEPL considered these factors and selected Nepal, Bangladesh, Sri Lanka, and Bhutan as potential destination countries. Of these, Bangladesh and Nepal had fully operational dairy cooperative systems. However, Bangladesh rated lower than Nepal owing to its poor law and order situation. After commencing operations in Nepal, SKEPL realized that while there were 1500 milk cooperatives, only 300 to 400 cooperatives were large enough to receive government subsidies to buy AMCS. SKEPL is currently trying to address this challenge by mobilizing support from banks to finance smaller cooperatives.

Forging trade partnership with strategic partners helped reduce senior management time and effort

The senior management team at SKEPL realized that expansion would demand considerable bandwidth. Yet, for successful expansion, management must invest time in critical decision making. To address this issue, SKEPL's senior management spent time understanding the Nepalese dairy sector and the AMCS market. Given its limited management



FIGURE 14
SKEPL'S OPERATING MODEL IN NEPAL



bandwidth, SKEPL decided to transfer to Nepal through the trade partnerships route. It selected Makwanpur District Cooperative (MDC), one of its early customers, to anchor and scale operations in Nepal. MDC was reliable and had credibility among local stakeholders. It was also competent in marketing AMCS. MDC undertook entire marketing and annual maintenance efforts in Nepal, while SKEPL's involvement was restricted to manufacturing and providing training to service-engineers.

Financial Readiness

SKEPL's financial reserves had been growing steadily for two to three years ahead of transfer. It tapped into these to fund growth in Nepal. It also de-risked revenues from Nepal by ensuring that customers pay for AMCS in advance. It charges a premium to cover the higher costs of doing business. Further, as a product company expanding through trade partnerships, SKEPL had a shorter break-even period and is no longer solely reliant on capital reserves for operational expenses in Nepal.

Operational Readiness

Identifying similar markets and customer segment for business expansion

To transfer to a new geographies easily, the SKEPL team invested in identifying similar markets and suitable customer segments for expansion. The dairy sector in Nepal has a cooperative and policy structure that is similar to India, which

offers security and certainty of product sales. Cooperatives also pool resources, and therefore, have a higher financial capacity to buy systems at a premium and make payments in advance. This further lowered financial risks for SKEPL and enabled it to invest capital in product development and operations. Effective identification of target customer segments and smart pricing policies enabled SKEPL to break-even within six months of operations in Nepal.

Leveraging customers to build distribution channel

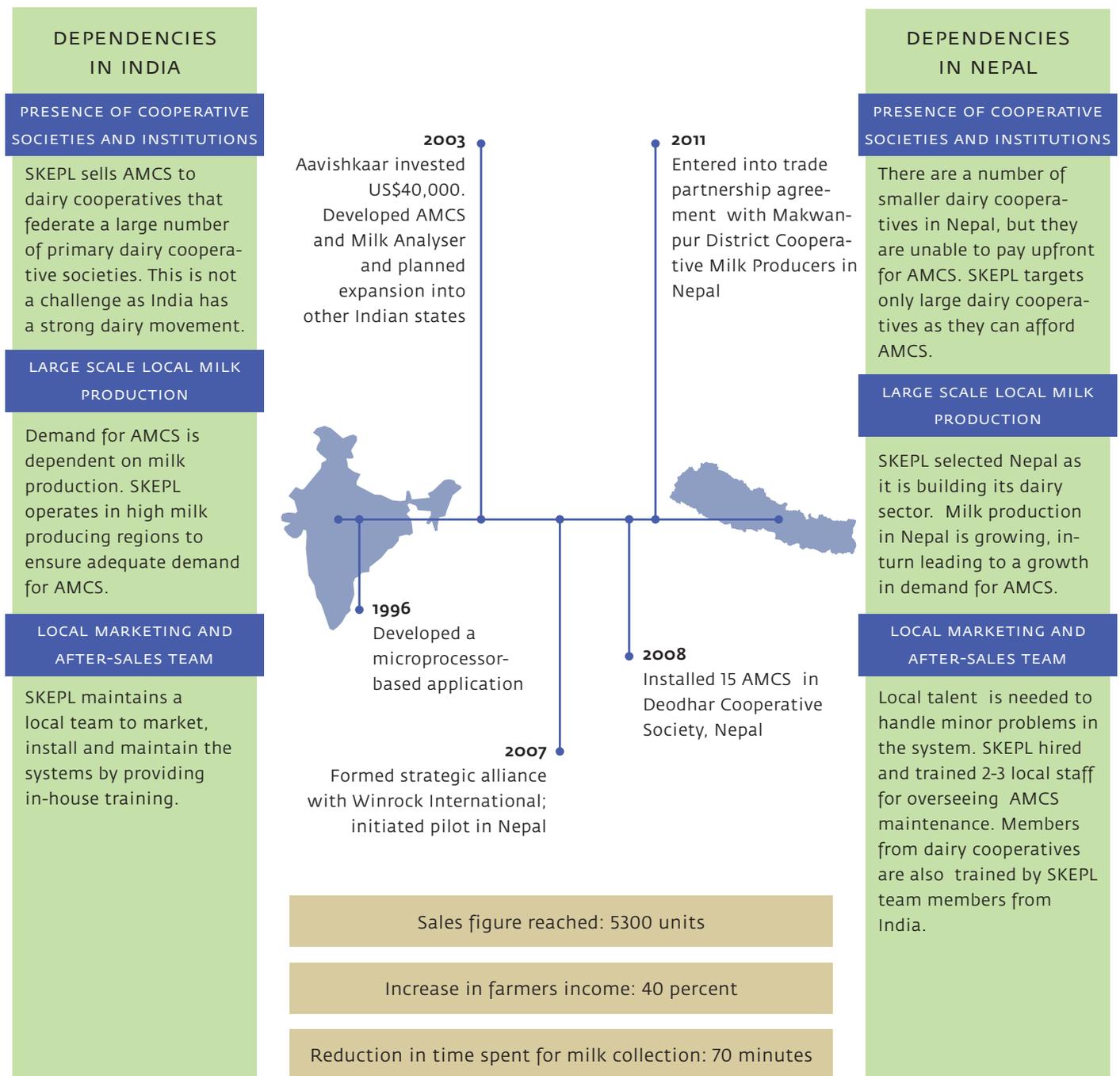
The successful pilot in Deodhar Cooperative Society in 2007 enabled SKEPL to launch AMCS in Nepal. The initial systems improved efficiency of milk collection and created a visible improvement in incomes of dairy farmers in Deodhar. Strong product endorsement by satisfied customers substantially boosted demand for AMCS. Soon, other cooperatives expressed interest in procuring and installing the systems. SKEPL formed a partnership with MDC to serve this growing market demand. MDC remains a reliable customer and credible trade partner (Figure 14).

22. VetNews. Volume 3, Issue 2. Nepal Veterinary Association. February 2013.

23. FAOSTAT accessed on September 2014.

24. VetNews. Volume 3, Issue 2. Nepal Veterinary Association. February 2013.

FIGURE 15
TRANSFERRING SKEPL FROM INDIA TO NEPAL

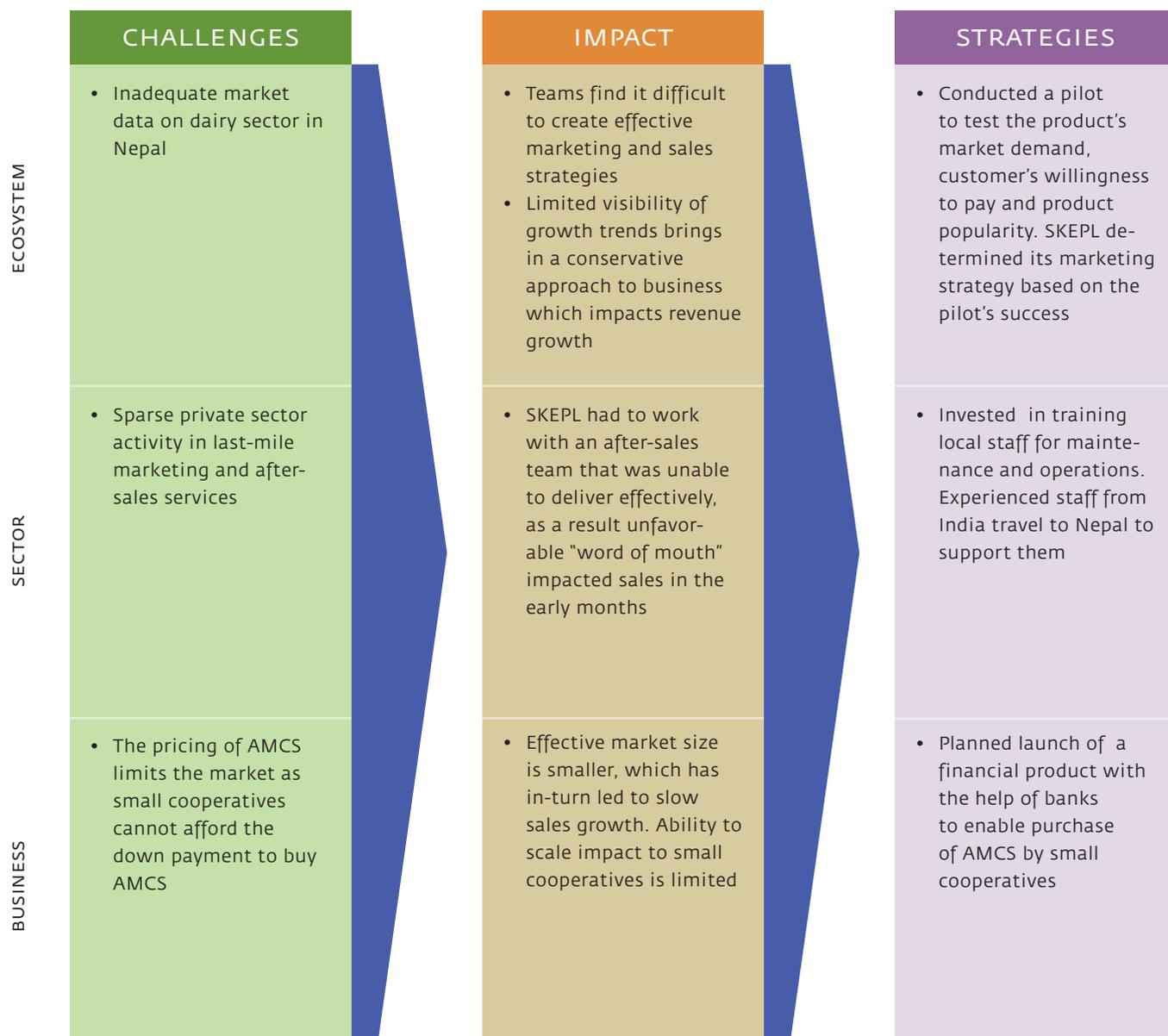


Selecting the right formats for partnerships

Inclusive businesses planning to expand will benefit from forging strategic partnerships with organizations that have significant presence in destination countries. This provides them an opportunity to better understand customers and pilot initiatives with minimal investments. They also need to be open to multiple formats for these partnerships. SKEPL planned its expansion through a strategic alliance with WI, which already had existing relationships with dairy coopera-

tives in Nepal. This helped boost adoption of SKEPL's products among customers who could resist adopting new products and services that alter traditional ways of dairy management. Once SKEPL understood the market better, it forged a trade partnership with Makwanpur District Cooperative (MDC), which anchors and scales operations in Nepal.

FIGURE 16
CHALLENGES FACED BY SKEPL IN TRANSFER AND STRATEGIES ADOPTED TO ADDRESS THEM



Leveraging first-mover advantage to get better terms of trade with potential partners

Inclusive businesses are often driven by opportunities to capture first-mover advantage. They typically offer innovative products and services in markets that are not served by others. In Nepal, SKEPL offered its products in a market where competition was non-existent. As a result, it received better terms of trade in Nepal than in India. For example, SKEPL needs to sell its machines on credit in India, while in Nepal,

it receives payments in advance and charges a premium price. This helped it achieve break-even in six months.

Evaluating market maturity for country selection

While planning expansion strategies, inclusive businesses in the dairy sector need to consider key parameters such as presence of cooperatives, import dependence on milk and milk products, presence of distribution networks, and competitors. SKEPL plans to expand into countries that have sizable milk



Credit: Ross Huggett

production capacities. Its expansion also depends on the presence of well-developed cooperative systems, as AMCS is designed to operate in cooperative set-ups with organized and centralized milk collection. In Nepal, it soon realized that while there were 1500 milk cooperatives, only 300 to 400 cooperatives were large enough to receive government subsidies to buy AMCS. SKEPL is addressing this challenge by mobilizing support from banks to lend to smaller cooperatives. Careful market estimates can lead to lower market development budget spends and reduce time to scale.

Investing time in identifying and building local talent

Inclusive businesses selling technology-based products in new geographies need to hire local talent with knowledge of local dialects, culture, and geography. SKEPL found WI's support

"Hiring local employees in Nepal enables us to easily establish closer relations with the producer farmers, which in turn builds customer confidence and trust."

Ujval Parghi
CO-FOUNDER, SKEPL

invaluable, especially in education and awareness-building among target customers. SKEPL invests considerable time to identify and train employees for maintenance and operations in India. New hires are trained and shadow older employees before taking on independent responsibilities. Selected employees travel to Nepal and train local people to address minor issues in the systems. This train-the-trainer model emerged from the understanding that it is necessary to hire local people to operate AMCS and ensure smooth functioning.

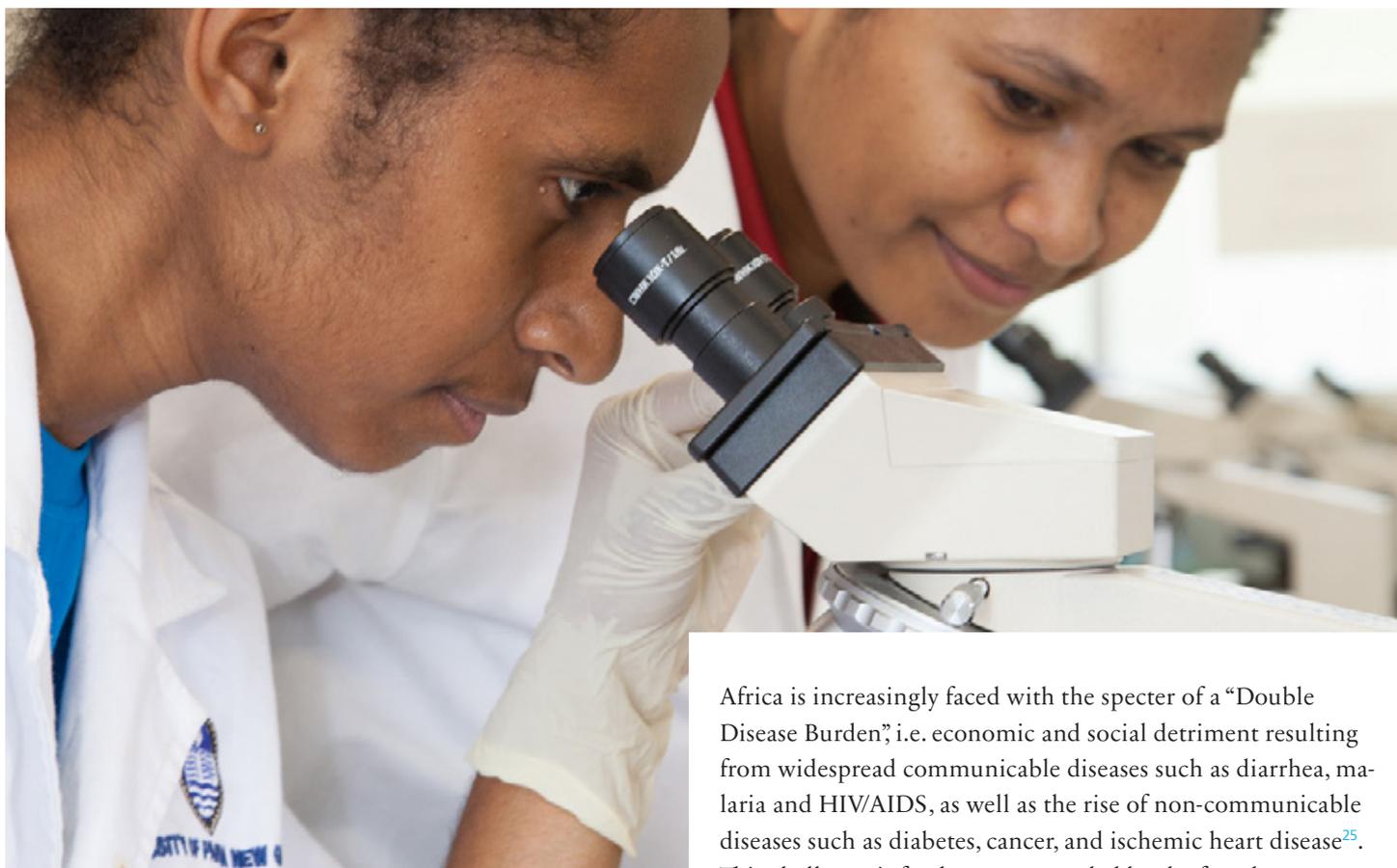
FUTURE PLANS

"We would like to expand into countries where competition is low and provides us the 'first mover' advantage."

Ujval Parghi
CO-FOUNDER, SKEPL

SKEPL has a significant market presence in India and Nepal. To further scale its operations, it plans to expand into other countries in South Asia such as Bhutan that have similar cooperative set-ups.

Healthcare



Africa is increasingly faced with the specter of a “Double Disease Burden,” i.e. economic and social detriment resulting from widespread communicable diseases such as diarrhea, malaria and HIV/AIDS, as well as the rise of non-communicable diseases such as diabetes, cancer, and ischemic heart disease²⁵. This challenge is further compounded by the fact that seven in ten Africans²⁶ often do not have the wherewithal to access expensive private healthcare and that penetration of healthcare infrastructure in rural areas is ineffective.

The healthcare sector in Africa is characterized by low public sector investments and high out-of-pocket private expenditure. Many countries in Africa are witnessing increase in the number of high-end hospitals in larger cities, but the peri-urban and rural markets are still underserved, and affordable healthcare is unavailable. Such a scenario presents opportunities for inclusive business models from more mature markets such as India. IFC estimates that an investment of \$25-30 billion will be needed in hospitals, primary clinics, warehouses to store and manage inventory of medical supplies, and low-cost technology innovations in Africa.

²⁵. The Global Burden of Disease. World Bank. 2013.

²⁶. Poverty headcount at \$2 per day (PPP), World Bank Development Indicators Database. Accessed in November 2014.

Case Studies

1. Aravind Eye Care
2. Dimagi
3. Novartis Arogya Parivar
4. Operation ASHA

CASE STUDY 5
ARAVIND EYE CARE SYSTEM

Transfer format: Knowledge sharing
Countries of operation: Own operations in India but transferred knowledge to organizations in 30 countries

Aravind Eye Care System is the largest eye care provider in the world. It provides standard quality of service to patients from across the economic spectrum. It aims to eliminate needless blindness and provide quality eye care.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: In alignment with its broader mission of avoiding needless blindness, Aravind sought expansion to scale impact and reach out to a wider audience, beyond India.</p> <p>Preparation: It formed a dedicated team for knowledge sharing, which included LAICO consultants and ophthalmologists from Aravind Hospital.</p> <p>Format preference: It chose knowledge transfer and joint venture as transfer formats to scale impact and build local capacity in the new geographies.</p> <p>Country preference: Knowledge sharing assignments are most often funded by donors who drive the country selection. Donors' selection of countries is generally driven by the disease burden and demand for eye care services.</p>	<p>Management readiness: Aravind set up LAICO to implement knowledge transfer activities. It staffed LAICO with consultants; doctors from Aravind also contributed time.</p> <p>Financial readiness: Aravind Hospital contributed 25 percent of the funds required for LAICO's operations. Donor agencies and international NGOs contributed the rest.</p> <p>Operational readiness: The model was established, business and clinical processes were documented, and training curriculum was developed before expansion.</p> <p>Validating need for product/service: Short term consulting assignments provided Aravind with insights about the target countries. Donor agencies who supported the knowledge transfer validated the need for specialized eye care services in these markets.</p>	<p>Reliance on donor support: Aravind is partially dependent on donor support for capacity building of the identified organizations.</p> <p>Recipient capacities: Recipients of knowledge transfer need to have capacity and capability in terms of committed leadership and necessary healthcare infrastructure for the long term success of knowledge transfer.</p> <p>Reliance on skilled manpower: Transfer of the model is dependent on skilled human resources in the healthcare sector in Africa.</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Inadequate and high cost of infrastructure such as internet and electricity impacts the cost of running a business
Sector: Poor availability of basic eyecare infrastructure and eye care professionals
Business: Reliance on donor support to sustain knowledge sharing activities and to identify partner hospitals; Aravind also faced challenges in monitoring of results after the knowledge transfer period

KEY TRANSFER INSIGHTS

- Aravind chose to transfer through knowledge sharing in order to scale impact rapidly
- It secured donor support for scaling affordable eye care, and worked with donors who could identify and support potential partners that lack the capacity to pay for the knowledge transfer services
- It developed an online monitoring system for tracking the impact of the consulting and capacity building engagement
- It standardized its systems and processes, and developed curriculum for knowledge transfer before embarking on business transfer

Established in 1976, Aravind Eye Care System is the largest eye-care provider network in the world. Its model functions on the principles of efficiency and scale. Aravind provides standardized quality of service to patients from across the economic spectrum. It is driven by the mission to eliminate needless blindness and provide quality eye care to all.

HEADQUARTERS: Madurai, India

YEAR OF FOUNDING: 1976

FOUNDERS: Dr. G. Venkataswamy

LEGAL STRUCTURE: Non-profit

BUSINESS MODEL: Business-to-consumer (B2C)

SECTOR AND SUB-SECTOR: Health, specialized eye-care

"One can easily replicate the model but it is hard to imbibe the values and culture of Aravind Eye Care System. Commitment of the leadership and passion are the two most important things for successful transfer of our model."

Ms. R. Dhivya

FACULTY ASSOCIATE, LAICO

Grameen) and Congo (for a mining company). The efficient assembly-line model for eye surgeries allows an eye surgeon at Aravind to perform over 2000 surgeries annually as against the national average of 350.

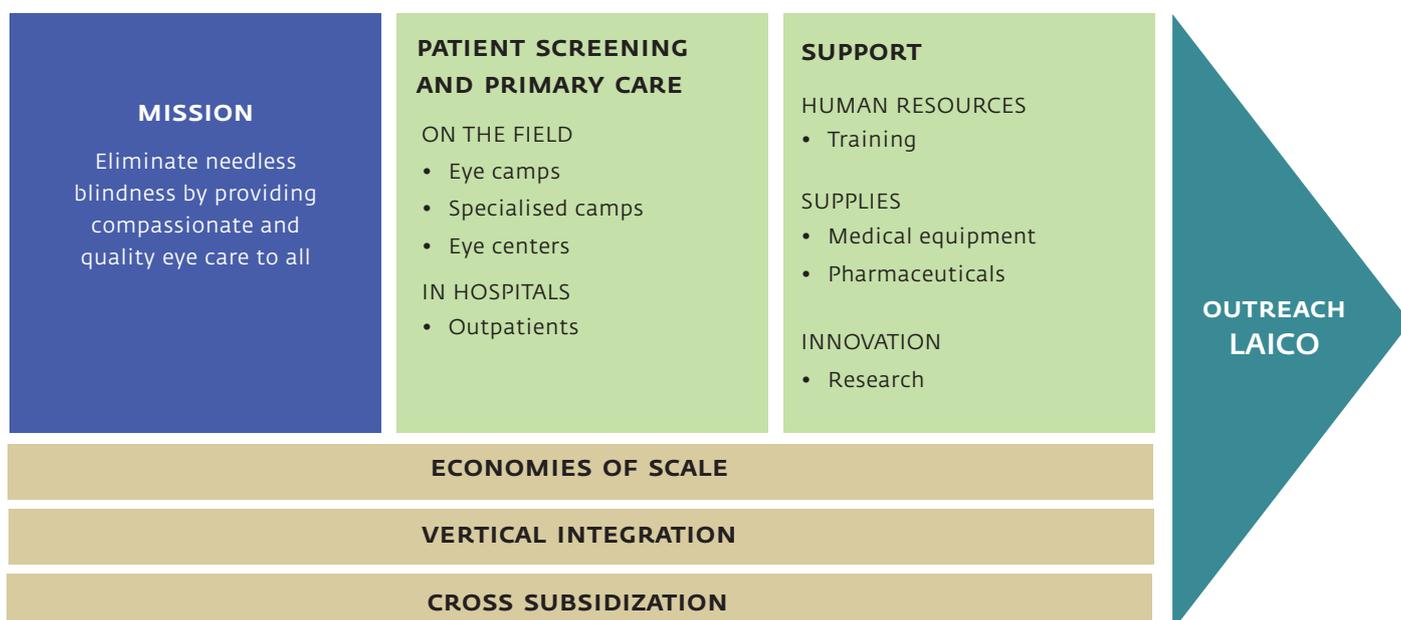
Driven by the larger mission to eradicate preventable blindness globally, Aravind disseminates its model to inclusive businesses in other countries. It established a training institute, Lions Aravind Institute of Community Ophthalmology (LAICO), to implement the knowledge transfer. The institute has shared best practices from the Aravind model and provided support to over 300 eye hospitals in 30 countries. In addition, Aravind plans to set up an eye hospital in Nigeria in partnership with the Chanrai Group. Aravind hospital will provide its eye-care expertise, while investments and local facilitation will come from the local partner, Tulsi Chanrai Foundation (TCF). The initiative will help build local capacity and scale impact in a new geography.

According to WHO (2014) estimates, 285 million people are visually impaired worldwide. Of these, 39 million are blind and 246 million suffer from low vision. About 90 percent of the world's visually impaired live in low-income settings. Uncorrected refractive errors and cataract remains the leading causes of blindness in middle and low-income countries, and 80 percent of these could be prevented or treated²⁷. The Madurai-based Aravind Eye Care System is driven by the mission to eradicate preventable blindness in the developing world.

Founded in 1976 by Dr. Venkataswamy, Aravind Hospital provides innovative high-quality eye care to all. From merely 11 beds in Madurai four decades ago, the hospital now has more than 4000 beds across 10 locations in Tamil Nadu, India. It also helped establish eye hospitals in Lucknow, Amethi, and Kolkata, as well as in Bangladesh (two eye hospitals for

27. Visual impairment and blindness factsheet. WHO. Accessed in November 2014.

FIGURE 17
ARAVIND EYE CARE SYSTEM'S BUSINESS MODEL





Credit: Jayanta Das Gupta

ARAVIND EYE CARE'S BUSINESS MODEL IN INDIA

India accounts for 12 million blind people, over 30 percent of the world's 39 million²⁸. 70 percent of this population lives in rural areas while 70 percent of eye-care professionals are based in urban areas. Although 80 percent of this blindness is preventable and curable if timely treatment is provided, eye-care delivery in rural India is a huge challenge. Aravind Eye Care addresses this need with its innovative model and affordable services.

Aravind Eye Care System is the largest provider of ophthalmological services in the world with 10 hospitals, 6 outpatient centers, and 49 primary care centers in Tamil Nadu. It has on board 457 doctors and 2,647 nurses, research, and administrative staff. Aravind conducts over 2,200 screening camps and performs 380,000 eye operations a year, with over 50 percent of the surgeries delivered at low or no cost. Aravind's business and operational model is inspired by the success of fast-food giant McDonald's strategy to deliver high-quality and low-cost services consistently across geographies.

Economies of scale

At Aravind, efficient hospital management with high patient volume enables high productivity. For instance, operating rooms are utilized optimally by equipping them with two operating tables and nursing teams so that one surgeon can

"We are not doing this for revenue or ownership, but with an intention to make eye care happen."

Thulasiraj Ravilla
EXECUTIVE DIRECTOR, LAICO
ARAVIND EYE CARE SYSTEMS

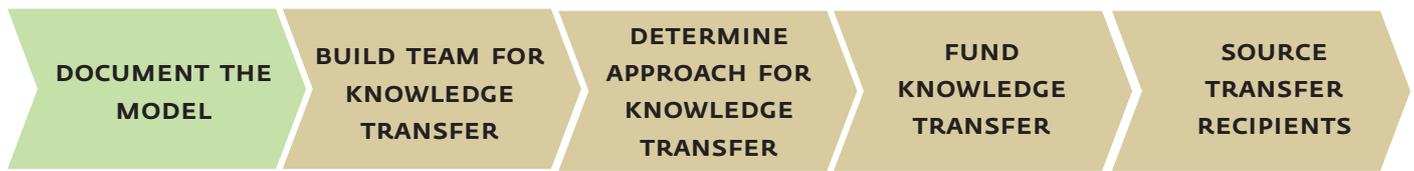
deliver 6-8 surgeries every hour. Surgeons at Aravind perform 25-40 procedures daily while maintaining unit costs at a very low level of about \$10 per cataract operation.

Vertical Integration

Aravind vertically integrated from manufacturing to research and delivery to keep operational costs low. Aurolab, established in 1992, is the manufacturing division of Aravind Eye Hospital. It supplies high-quality ophthalmic consumables such as intraocular lenses (IOLs), suture needles, and spectacle lenses at affordable prices to developing countries. Aravind obtained technology to manufacture intraocular lenses at a fraction of its cost from the U.S.-based Seva Foundation and Combat Blindness Foundation. The lenses are priced at as low as \$2 per lens, which is one-tenth of the international price.

²⁸. Infinite Visions -The Aravind Eye Care Experience. August 2012.

FIGURE 18
ROADMAP FOR KNOWLEDGE TRANSFER



Aurolab’s manufacturing activity scaled up exponentially from 35,000 lenses annually in 1992–1993 to nearly 2 million lenses today. It markets its products to more than 130 countries, with exports accounting for half its Indian revenues (\$13.33 million) in 2012-13. Knowledge transfer plays a role in catalyzing sales for Aurolab’s ophthalmic consumables.

Cross-subsidization

Aravind provides free or affordable care to approximately 66 percent of its patients with revenue derived from 34 percent of patients who pay for services. The hospital ensures the same quality of treatment for all its patients. The free and paid facilities differ only in terms of amenities such as air conditioning in the recovery rooms.

EXPANDING ARAVIND EYE CARE SYSTEM TO AFRICA

In alignment with its mission, Aravind Eye Care System intended to reach out to a wider population and scale the outcome that its hospitals were generating in India. It founded LAICO in 1992 through the Sightfirst program supported by the Lions Club International Foundation and the Seva Foundation. LAICO aimed to provide technical and management assistance to hospitals keen to implement the Aravind Eye Care model.

The senior management at Aravind found that eye-care delivery in Africa faced similar challenges as in India and could be significantly improved. It therefore started its Africa journey intending to streamline the eye-care delivery process and enable institutions to deliver high-quality eye care at scale.

Management Bandwidth

Building a focused team with strategic responsibilities

LAICO led the global expansion efforts with guidance from the founding team at Aravind Eye Care System. It created a

core team consisting of 10 consultants with management and operational expertise for knowledge transfer activities. Aravind Eye Hospital supports LAICO on clinical matters by providing 500 person-days of technical support and 100 person-days of doctors each year for knowledge transfer.

Format and Country Selection

Leveraging experience and brand to build a consulting practice

The consulting and knowledge transfer route to expansion is aligned with Aravind’s long-term goals. The team found there were many eye-care institutions across African countries that require guidance and support to refine their operations. Aravind leveraged its positive brand image, years of experience, and widely-recognized model to establish a consulting and knowledge-transfer practice.

Apart from quickly scaling impact, this format presented minimal operational hurdles to expansion as it did not involve any legal, political, and business constraints in destination countries.

Expansion decisions are made in consultation with funding institutions

Knowledge-transfer activities in the healthcare space are usually funded by donor agencies. Hence, donors often initiate discussions and recommend countries and healthcare organizations they wish to support. Aravind provides consulting support and knowledge-transfer services to these organizations and in these regions.

Financial Readiness

Obtaining external donor support to fund expansion

Aravind’s knowledge-sharing engagements are largely driven by external donor funding. The monetary support provided by these donor organizations covers operational expenses of

assignments executed by LAICO. LAICO's annual running costs are around \$400,000. Aravind Eye Hospital provides around \$100,000. International organizations such as the World Health Organization (WHO) and international NGOs such as Seva Foundation, Sight Savers, ORBIS, and CBM, fund technical assistance provided by LAICO through project grants in Africa and worldwide.



Credit: Jayanta Das Gupta

"Monitoring the progress of the participating organizations post knowledge transfer is difficult. We are trying to overcome this challenge by enabling data collection through an online platform."

Ms. R. Dhivya
FACULTY ASSOCIATE, LAICO

Operational Readiness

Standardizing processes for efficient knowledge transfer

Before entering Africa, Aravind standardized and tested its processes and model in India to ensure operational efficiency, cost-effectiveness, and high service quality. It identified best practices and documented them in a training manual. Aravind also developed a specialized training program for its knowledge transfer partners. Aravind's knowledge-transfer program includes needs assessment of participating hospitals, a week-long capacity-building program for key hospital staff at Aravind hospital in Madurai, and on-site implementation support, including off-site monitoring and advice for two years.

The immersion program is a capacity-building tool as participants observe Aravind's model first hand. It is customized to suit the participating organization after the needs assessment visit (1-2 weeks). During this visit, the core team gains primary insights on issues faced by the participating organization. Subsequent workshops help participants develop a vision for their hospital. LAICO supports participants in developing strategies for demand generation, resource training and utilization, quality assurance, and financial viability.

Online platform for progress monitoring

The Aravind team found it difficult to monitor progress made by partner hospitals beyond project periods. To overcome this, it recently developed an online platform for data collection and monitoring, where participants share data on footfalls, number of surgeries, and complications during surgery. This helps Aravind map the impact of the initiative.

Diversifying to newer customer segments through e-learning platform

Skilled manpower and continuous training is the key business dependency for any healthcare business. LAICO recently launched Aurosiksha, an e-learning platform, to enhance and facilitate continuous learning, skill up-gradation and knowledge transfer among eye-care professionals worldwide. The platform provides a repository of online learning tools in multiple languages, helping cost-effective knowledge transfer of best practices. The platform also helps train resources in geographies where training facilities are limited or missing and staff is semi-skilled or inadequately skilled.

FIGURE 19
TECHNICAL ASSISTANCE PROVIDED BY LAICO

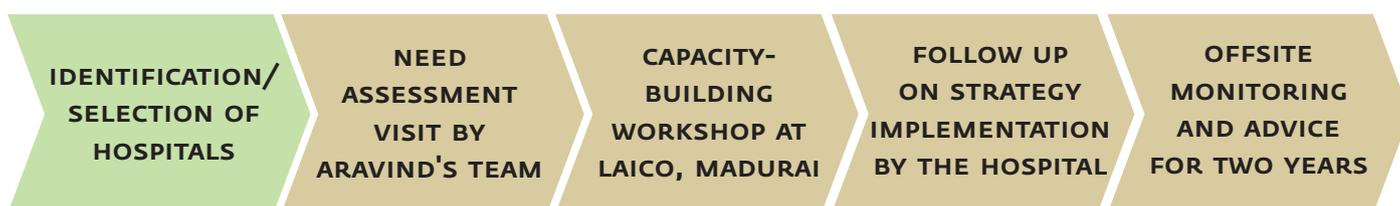
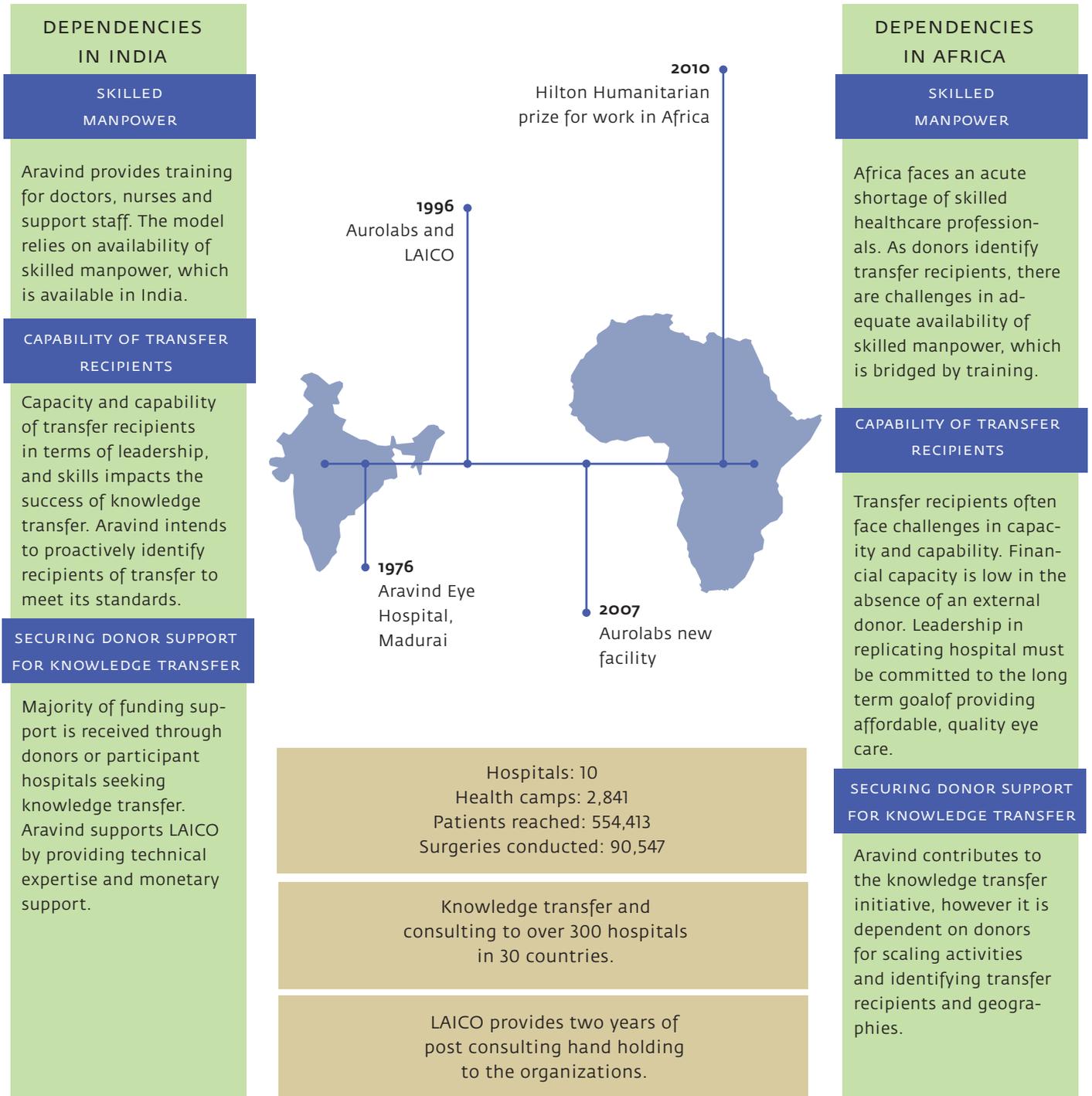


FIGURE 20
TRANSFERRING ARAVIND EYE CARE FROM INDIA TO AFRICA



CHALLENGES AND KEY INSIGHTS FOR TRANSFER

Knowledge transfer is a suitable transfer format for inclusive businesses intending to scale impact rapidly

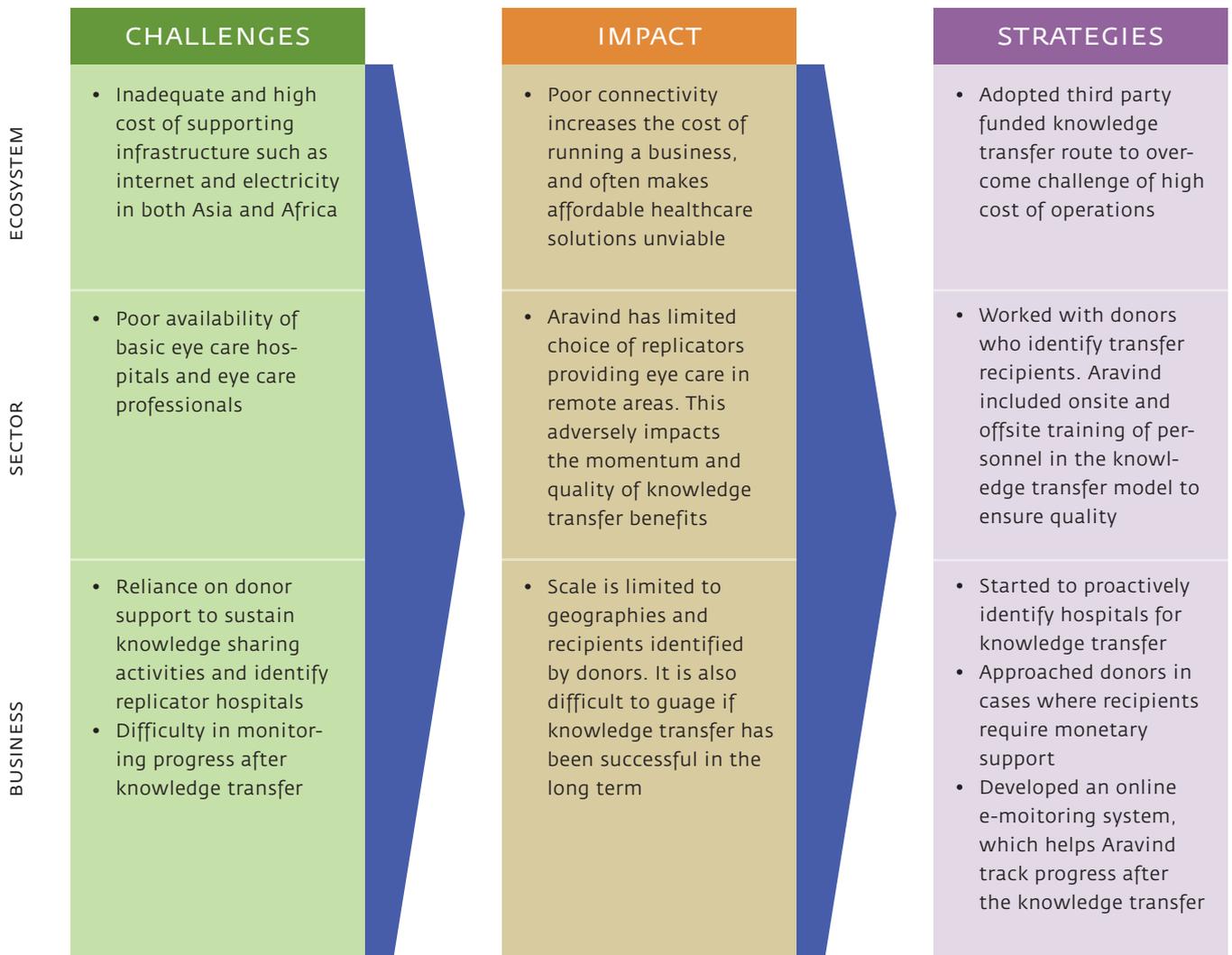
Knowledge transfer is an ideal transfer format for inclusive businesses that have developed innovative models to address

development challenges and intend to scale impact rapidly. The belief at Aravind is that it alone cannot address the challenge of preventable blindness. It must build local capacity to solve the problem in a sustainable manner and ensure long-term impact.



Credit: Fahad Yunus Mohammed

FIGURE 21
CHALLENGES FACED BY ARAVIND EYE CARE IN TRANSFER
AND STRATEGIES ADOPTED TO ADDRESS THEM



Securing donor support for knowledge transfer activities

Knowledge transfer can scale impact quickly, but comes with costs that cannot always be borne completely by inclusive businesses offering these services. Offering consulting services is a sustainable way to conduct knowledge transfer activities. Potential recipients of such transfer can pay for technical assistance provided by disseminators. However, if potential disseminators or recipients lack capacity to fund knowledge transfer activities they might need donor support. Aravind invested time and resources in developing and setting up knowledge transfer facilities. Donors support potential recipients by funding the knowledge transfer fees. Actors in the ecosystem such as donor agencies and international NGOs are important stakeholders in facilitating and funding knowledge transfer activities. Donors and foundations can also help successful inclusive businesses understand the value of opening their business models and developing knowledge transfer programs.

"For Aravind Eye Care the objective of the initiative is to help build local capacity and scale impact in a new geography."

Thulasiraj Ravilla
EXECUTIVE DIRECTOR, LAICO
ARAVIND EYE CARE SYSTEMS

FUTURE PLANS

LAICO is working proactively with donor agencies and international NGOs to identify hospitals to support in Africa. This, they hope, will help overcome some existing challenges in knowledge transfer. The hospital in Nigeria in partnership with the Chanrai Group is another focus area. The hospital is expected to be the largest eye care facility in Africa and is set to start operations in December 2015.



Credit: Aravind Eye Care

Transfer format: Wholly-owned subsidiary
Countries of operation: USA, India, South Africa, Mozambique, Senegal

Dimagi is an award-winning social enterprise providing mobile applications for healthcare. It has developed products in the mobile technology space to aid frontline health workers in efficient case management, data collection, information broadcast, and supply chain management.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: Dimagi aimed to provide technology support for capacity building of frontline healthcare workers.</p> <p>Preparation: Dimagi implemented projects in South East Asia and Africa through teams based in India. This helped it estimate the market opportunity and business environment in these countries.</p> <p>Format preference: Since the product required customization involving core technical knowledge, Dimagi selected the wholly-owned subsidiary route for expansion in Africa.</p> <p>Country preference: It established hubs in South Africa, Mozambique, and Senegal to cover the vast untapped market in Africa. Presence of a good mobile network and presence of NGOs and government programs were key selection criteria.</p>	<p>Management readiness: Dimagi's diverse team has defined roles for technology, operations and strategy. This freed senior management bandwidth for expansion as they spent less than 20 percent of their time on the India operations.</p> <p>Financial readiness: Dimagi received grant funding to expand to India, but it self-funded the expansion to South Africa, Mozambique and Senegal.</p> <p>Operational readiness: It developed and tested the model by implementing multiple projects in new geographies with India as the hub.</p> <p>Validating need for product/service: Exposure through projects indicated that there was a growing healthcare services sector coupled with low density of population in Africa. This presented a vast untapped market for technology products in healthcare.</p>	<p>Mobile Penetration: As Dimagi's technology operates on mobile phones, the destination country must have reasonable mobile penetration.</p> <p>Presence of frontline workers: Dimagi's model empowers frontline health workers. Presence of NGOs and government programs that employ frontline healthcare workers is a requirement.</p> <p>Availability of technical talent: Project managerial staff and implementation staff in partner agencies are required to support customization, implementation, supervision, and handholding to effectively leverage Dimagi's products and services.</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Low technical capacity of workforce in Africa
Sector: Linguistic barriers and lack of educated healthcare workforce in target countries constrains uptake of its mobile application-led products
Business: Lack of awareness about new technologies for outreach and data management among potential customers; lack of capacity to adopt technology and data management processes

KEY TRANSFER INSIGHTS

- Dimagi used a hub-and-spoke model to increase outreach and create a pipeline of projects in new countries while keeping the operational costs low
- Dimagi's expansion was supported by its second-line leadership, and it benefited from employing a mix of experienced staff and local team

Established in 2002, Dimagi is an award-winning social enterprise that has developed multiple products in the mobile technology space to aid frontline health workers in efficient case management, data collection, broadcast messages, and supply-chain management. It has offices in the U.S., India, South Africa, Mozambique, and Senegal. Its products are currently deployed in over 40 countries across Asia and Africa.

HEADQUARTERS: Cambridge, Massachusetts, U.S.
YEAR OF FOUNDING: 2002
FOUNDERS: Jonathan Jackson and Dr. Vikram Sheel Kumar
LEGAL STRUCTURE: For-profit
BUSINESS MODEL: Business-to-business (B2B)
SECTOR: Health, health informatics

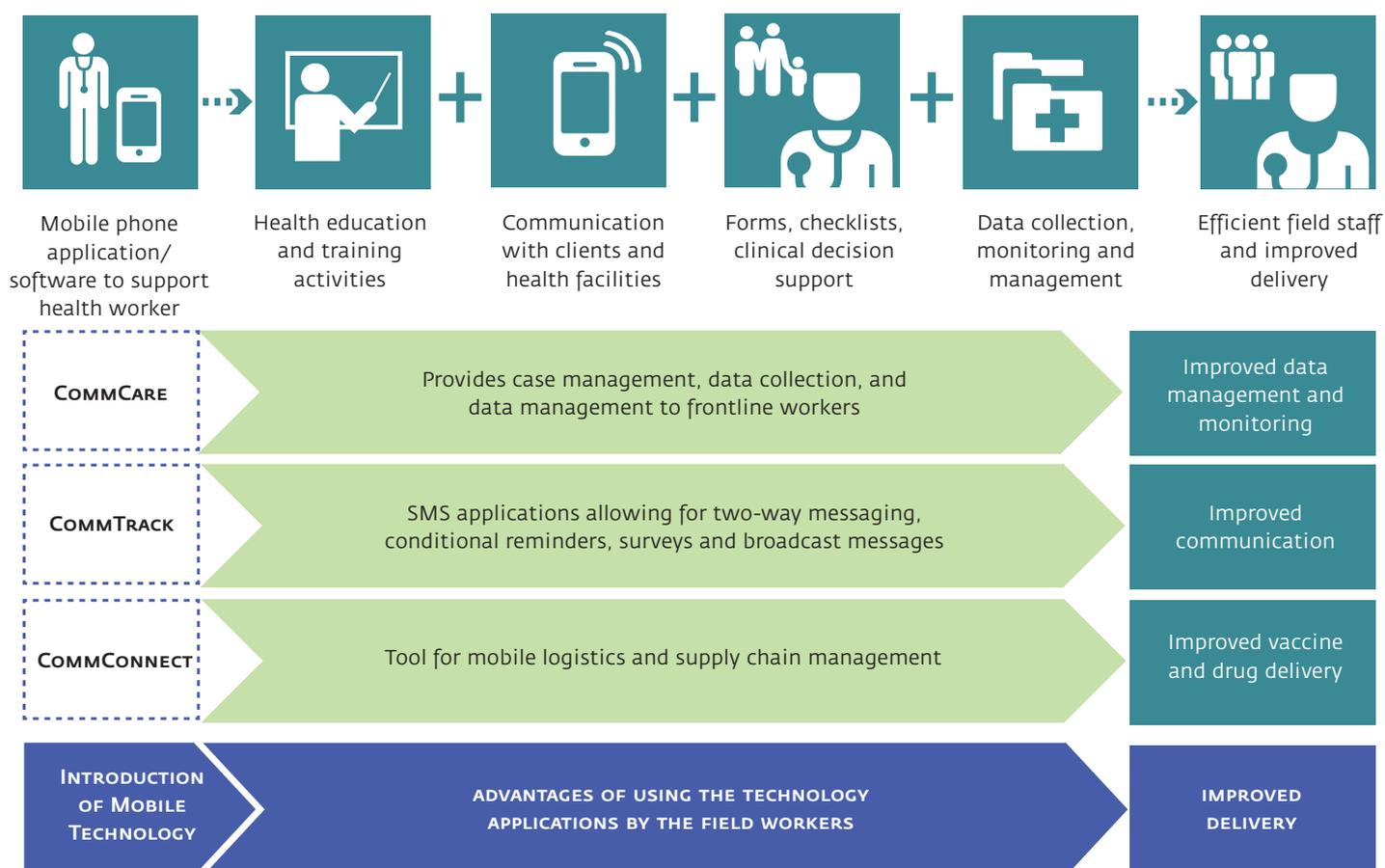
play an important role in improving last-mile health-care service delivery processes by aiding communication between healthcare providers and patients. Dimagi is a for-profit, social enterprise that has developed multiple products in the mobile technology space to aid frontline health workers in efficient case management, data collection, and supply-chain management, thus improving last-mile health-care service delivery.

Incorporated in 2002 in Cambridge in the U.S. by Jonathan Jackson and Vikram Kumar, Dimagi undertook health informatics projects with government agencies, NGOs, social enterprises, and corporate enterprises in the U.S. and Asia and Africa from its U.S. office. It received \$100,000 grant funding from USAID to pilot its flagship product, CommCare, and expanded to India in 2010. CommCare is a multilingual mobile phone-based health-care application that allows health workers to store and access patient information and monitor at-risk patients, while also enabling program staff to

Inaccurate and inadequate information hampers global aid efforts to improve healthcare systems in the developing world. According to a WHO analysis, there is a need to build streamlined health information systems capable of generating data on a range of health-related issues²⁹. Technology can

29. World Health Organisation. Health Metrics Library report. April 2005.

FIGURE 22
 TRANSFERRING DIMAGI FROM INDIA TO AFRICA





Credit: Dimagi

monitor health worker performances through online reports. Dimagi's other products are CommTrack and CommConnect. CommConnect is a turnkey platform to build messaging applications. For instance, it can send medication reminders to patients enrolled in clinical trials and enable community health workers conduct large-scale surveys. CommTrack is a mobile application that enables efficient logistics and supply-chain management for essential vaccines and medications. Since its launch in 2010, Dimagi has expanded its products to over 40 new frontline worker programs in India, reaching over 7 million people in rural India. Motivated by its success in India, Dimagi has expanded to South Africa (2011), Mozambique (2012), and Senegal (2014). Since inception, Dimagi has collaborated with over 100 partners to implement projects in over 40 countries in Asia and Africa.

DIMAGI'S BUSINESS MODEL IN INDIA

Over 70 percent of India's population lives in villages with limited access to healthcare services. These remote areas face an acute shortage of doctors and well-trained community health workers.³⁰ Dimagi expanded to India in 2010 with the help of a \$100,000 Development Innovation Ventures (DIV) grant

funding from USAID. It implemented its flagship product, CommCare, in 11 organizations as a proof-of-concept deployment model. Dimagi provided ten phones to each organization, and allowed the organizations to test the CommCare platform before committing to it. With the project's success in India, Dimagi won a \$1 million DIV stage 2 funding to engage with more than 40 organizations through the same model.

Dimagi's biggest success in India is its work with Accredited Social Health Activists (ASHA) workers under the National Rural Health Mission (NRHM).³¹ The ASHA program needed an innovative approach to overcome challenges in training, motivating, and monitoring health workers and enabling better service to local communities. After four months of using

30. Community health workers are an important part of the government's program to increase access to primary health care in remote geographies as they are responsible for last mile delivery of health care services.

31. India's National Rural Health Mission (NRHM) has trained and deployed more than 750,000 Accredited Social Health Activists (ASHAs) – NRHM's name for community health care workers (CHWs). The program assigns one ASHA for every village to ensure life-saving interventions for their communities.

FIGURE 23
FLOW OF KEY OPERATIONAL ACTIVITIES AT DIMAGI



CommCare, community health worker knowledge retention of danger signs in all major health categories increased by 22 percent. India has the largest number of CommCare projects in the world. Donor agencies and international NGOs fund Dimagi's research and product development efforts, while its key clients are government agencies, NGOs, social enterprises, and corporate enterprises that employ frontline workers to deliver essential services.

Enabling efficient product delivery through customization and implementation support

The Dimagi team works with clients to understand frontline worker roles and activities in the operational model. It identifies specific issues faced by frontline workers and designs customized applications that help overcome these challenges. Dimagi supports on-ground implementation of the technology, particularly to align it with the existing field operation processes, and offers training to frontline health workers to ensure effective use of the product. Once the technology is deployed, Dimagi monitors its performance over a period of three to six months to assess its use and address challenges, if any. Necessary product modifications are made based on learning from these pilot implementations.

Differential pricing structure to ensure wider outreach

Dimagi charges a fee of \$1 per month per health worker for the product, and a hosting fee to use its cloud service to store patient data. In addition, Dimagi offers product customization and training for which it charges a consulting fee. It employs a tiered pricing model for the technology that aligns with client healthcare program sizes and development requirements. The standardized product is also offered free of cost for programs that employ less than 50 frontline workers.

EXPANDING DIMAGI TO AFRICA

Dimagi had been engaged in projects in the African continent, which it managed through satellite offices at project locations. It developed regional hubs within Africa as it saw significant opportunities for growth in the region. In 2012, Dimagi expanded to South Africa and Mozambique, and subsequently to Senegal in 2014, to increase outreach in Sub-Saharan Africa.

"Dimagi has adopted a tiered pricing structure with a view to make technology accessible to all. The standardized product is offered free of cost to organizations with less than 50 frontline workers."

Devika Sarin
DIRECTOR OF PARTNERSHIPS,
ASIA, DIMAGI

Management Bandwidth

Building the leadership for expansion from existing management team

Dimagi's founders encouraged and supported its second-line leadership in leading expansion efforts. In 2012, Dimagi supported the initiative of a team member from its U.S. office to expand to South Africa. He moved to South Africa as the country lead and set up an office in Cape Town. Similarly, Dimagi identified and encouraged other team members who were interested in taking up similar responsibilities. Once existing team members establish operations in the new geography, they hire and groom local talent. Dimagi thus has country teams that are a mix of expatriate and local staff.

Format and Country Selection

Expanding through a hub-and-spoke approach

Dimagi wanted to retain control of field operations as the product involved a high level of customization and client interaction. Success depended on in-depth knowledge of the technology as well as strong engagement to customize, refine, and stabilize the application to meet high quality standards. Dimagi set up a wholly-owned subsidiary in Africa to ensure this.

Dimagi adopted a lean approach to expansion by setting up regional hubs instead of separate country offices. It selected South Africa for its strong regional presence and high growth potential. Mozambique and Senegal were other countries that made the shortlist as they offered Dimagi a sizable number of prospective projects and relatively lower operational costs. South Africa and Mozambique acted as hubs for the southern African region and Senegal became a hub for West Africa. Teams based in these offices were also responsible for business development and project implementation in neighboring countries. For instance, the Senegal office is responsible for projects in Burkina Faso and Niger. In addition to the hubs, Dimagi also has satellite offices in Myanmar, Zambia, Kenya, and Guatemala, where small one to two-member teams are responsible for business development. This facilitates increased outreach and helps Dimagi build a pipeline of projects in new countries while keeping the operational costs low.

"Dimagi has adopted a hub and spoke model of expansion. We have 1-2 senior resources in satellite offices in countries such as Myanmar, Zambia, Kenya to support business development effort."

Stella Luk,
COUNTRY DIRECTOR,
DIMAGI, INDIA

Financial Readiness

Expansion through company reserves

Dimagi had a successful business model, and was sustained by revenues earned from its consulting projects and products. The expansion to Africa with regional hubs in multiple countries was completely funded by internal reserves.

Operational Readiness

Understanding the market opportunity and business environment in a new geography

Dimagi utilized its India office as a hub, and undertook projects in South-East Asia and Africa. This approach helped it understand market opportunities and business environments in new geographies. The team met potential clients in different countries, understood their needs and challenges, and



Credit: Dimagi

educated them on the benefits of shifting from paper-based systems to electronic systems for case management and data collection. Insights from these conversations were fed back into plans for expansion, product development and customization, and marketing strategies.

Customizing products to suit the local context

Dimagi customized its products to overcome local challenges faced in last-mile health-care delivery by health workers. It developed multi-lingual collateral to enable efficient uptake of the technology. For instance, Dimagi developed a pregnancy,

newborn, and postpartum module for community health workers in Afghanistan while working with World Vision.³² This project presented unique challenges of working in a post-conflict zone and meeting unique requirements, given literacy levels and genders of health workers. Most health workers in Afghanistan never attended school and were at a disadvantage having to learn and recall health information that needed to be conveyed to women in the villages they serve. To overcome these challenges, Dimagi extended the CommCare platform to support audio-visual prompts, which made it possible for illiterate and semi-literate health workers to learn, share, and collect information with ease.

FIGURE 24
DIMAGI'S EXPANSION TO AFRICA

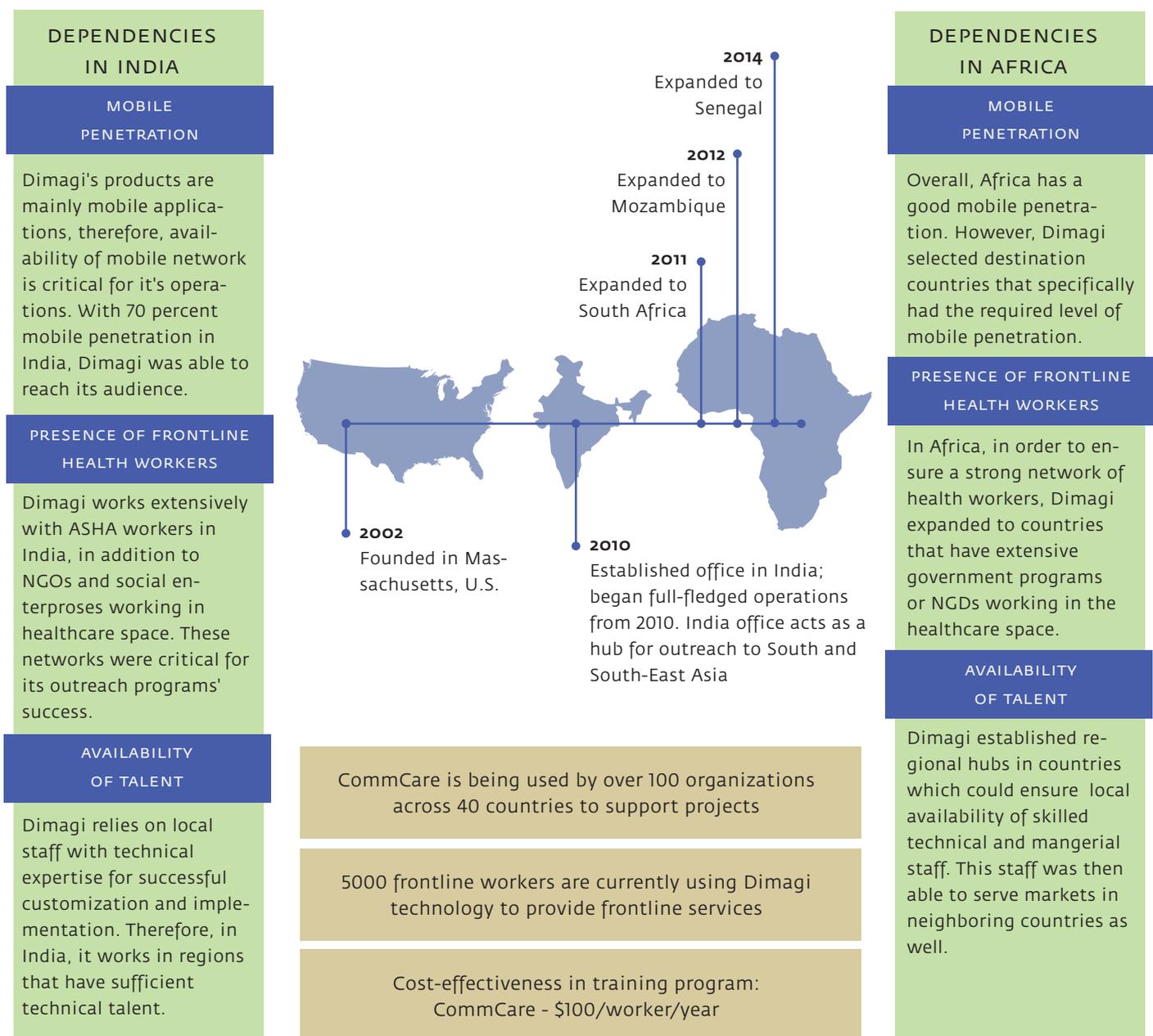
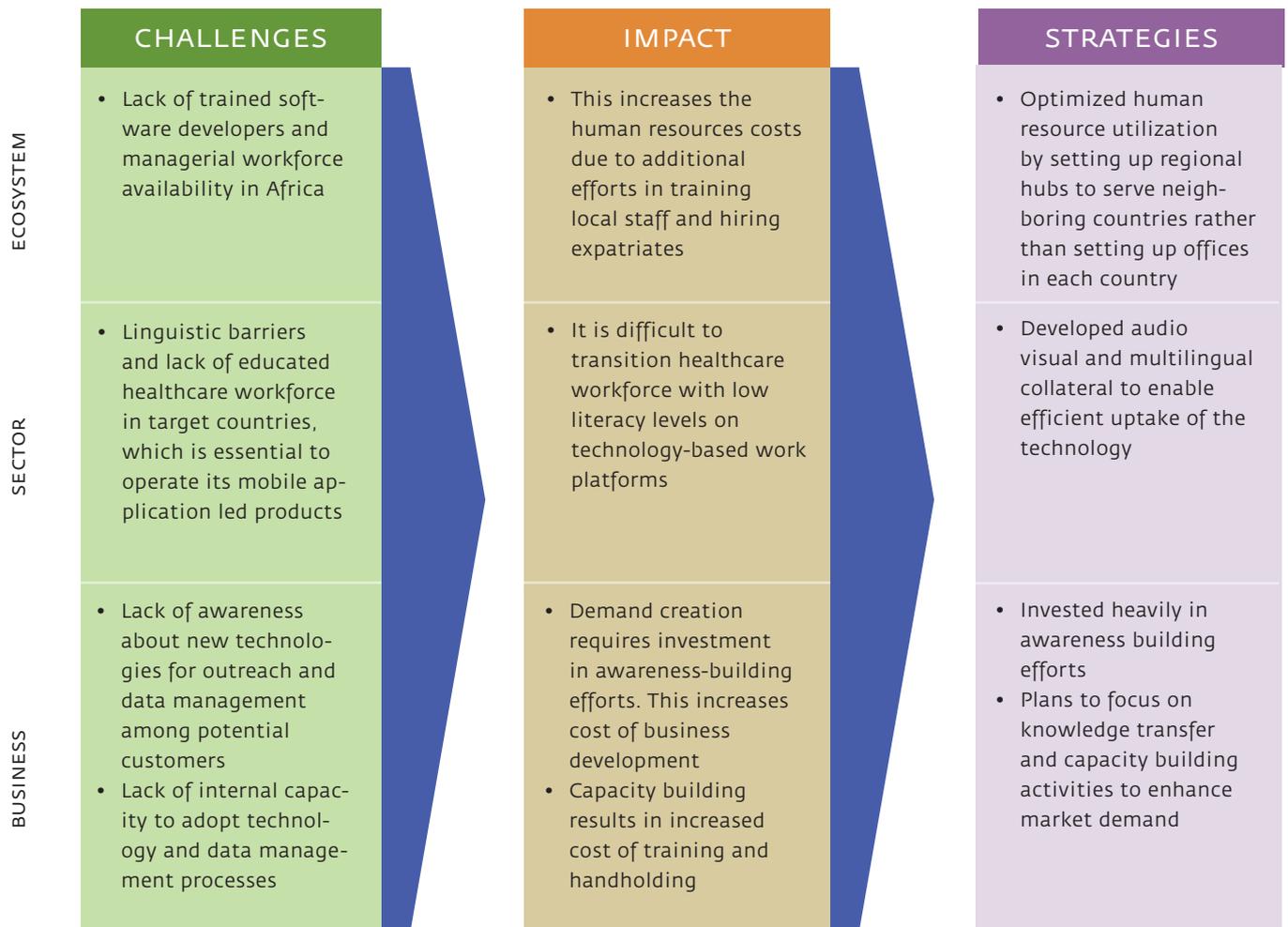


FIGURE 25
KEY CHALLENGES IN TRANSFER



CHALLENGES AND KEY INSIGHTS FOR TRANSFER

Adopting a hub-and-spoke model of expansion

Technology-driven inclusive businesses can potentially adopt a hub-and-spoke model for expansion by establishing full-fledged operations in the country with the biggest market (hub) and reaching out to markets in neighboring countries through this and other satellite offices. The hub-and-spoke model increases business outreach and creates a pipeline of projects in new countries while keeping operational costs low. In the case of Dimagi, its offices in India, South Africa, Mozambique, and Senegal act as hubs for its Asia and Africa foray, while satellite offices in Myanmar, Zambia, Kenya, and

Guatemala support business development. This model has also allowed Dimagi to test markets for its products and create pipelines of projects in new countries before embarking on full-fledged expansion.

Employing a blended team

Leveraging existing second-line leadership and providing it with opportunities for growth can help inclusive businesses not only find champions for the cause within their organizations, but also much-needed alignment when gradually build-

32. World Vision, an international NGO, is a relief, development, and advocacy organization dedicated to working with children, families, and communities to overcome poverty and injustice.



Credit: Dimagi

ing local teams. The experienced teams bring in knowledge of business operations and local teams help gain understanding of local business environments and cultural contexts. This serves as an effective mechanism to transfer knowledge and catalyze operations. Also, the presence of second-line leadership and experienced staff ensures that initial glitches on technical and business fronts are handled efficiently while the local team is still learning different aspects of the business. At Dimagi, this model helped in effectively managing initial teething problems.

"We have recently launched "Coded in Country" initiative to build capacity of local developers. Developing capacity helps create solutions that are more suited to address local challenges and brings down cost of product development"

Dr. Neal Lesh
CHIEF STRATEGY OFFICER,
DIMAGI

FUTURE PLANS

Dimagi plans to further increase its outreach in Asia and Africa, and is focusing on Kenya, Myanmar, and Zambia. Dimagi also plans to diversify its product portfolio to sectors such as agriculture and education where technology can

play a significant role in creating awareness and improving development outcomes. Dimagi plans to conduct knowledge transfer and capacity-building activities to help build local capacity for product development, scale impact at a faster pace, and build brand equity.

Transfer format: Wholly-owned subsidiary
Countries of operation: India, Kenya, Vietnam, and Indonesia

Novartis is a global pharmaceutical giant and world leader in the research and development of products to protect and improve health and well-being. Arogya Parivar is a Novartis initiative launched in 2007 to improve healthcare access and reach for remote rural communities.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: Novartis aimed to improve access to medicines in remote rural markets and expand its consumer base.</p> <p>Preparation: It established distribution networks in remote areas by connecting with local distributors. It also entered into strategic partnerships with local NGOs in Kenya and the Government in Vietnam.</p> <p>Format preference: It opted to retain control over its operations to ensure quality of services, model's sustainability and social impact.</p> <p>Country preference: It selected Kenya, Indonesia and Vietnam after analyzing conditions in several countries. It found Kenya the most suitable for expansion in Africa. It selected Vietnam to refine and develop its model in a country that had a public sector-led healthcare system.</p>	<p>Management readiness: Novartis dedicated a senior team to focus on expansion activities. The senior team in each country came with significant public health and management experience in that geography.</p> <p>Financial readiness: It expanded operations to Kenya, Vietnam, and Indonesia after breaking even in India. Novartis is committed to funding the program and is willing to invest patient capital.</p> <p>Operational readiness: It had a stable and proven model in India before expanding to Africa. It mandated local partners to run the commercial operations and health camps to overcome legal hurdles in Africa.</p> <p>Validating need for product in Africa: It had an established distribution system in Kenya. It identified demand for its services in rural areas through research conducted by the local team.</p>	<p>Availability of primary healthcare workers: Novartis's social business model is largely dependent on primary health workers. The country selection was largely influenced by the presence of private or government health workers.</p> <p>Basic health infrastructure: The Arogya Parivar model works with existing systems for diagnosis and treatment. Hence, presence of doctors, basic pharmaceutical distribution channels and hospitals is necessary.</p> <p>Local Partnerships: Local partnerships are necessary to better understand the communities as well as build trust. Arogya Parivar works in collaboration with local pharmacies, doctors, NGOs, and the government.</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Inadequate infrastructure in Africa and Asia, particularly roads and established distribution channels created challenges for outreach
Sector: Poor basic health infrastructure and limited presence of healthcare workers can restrict the model's success
Business: Novartis depends on local partnerships (NGOs or Government) to establish connection and trust within the community, and the low population density in the focus areas in Kenya and Vietnam increases the distribution cost

KEY TRANSFER INSIGHTS

- Novartis took a strategic approach to country selection. It carried out analysis of over 67 countries based on five broad parameters - social need, commercial viability, investment climate, internal capability and group's strategic inclination
- It forged partnerships with the Government and local NGOs for better outreach
- It invested in the destination country and hired local talent. It also created an enabling environment for the country teams by giving them the independence to innovate and customize the model for transfer as required

Established in 1996 with the merger of Swiss companies Ciba-Geigy and Sandoz, Novartis is a world leader in health-care solutions. It has a diversified portfolio of innovative medicines, cost-saving generic pharmaceuticals, consumer health products and vaccines. Novartis believes pharmaceutical companies can play an impactful role in improving health care access for the underserved poor. It set up a for-profit rural health-care initiative, Arogya Parivar (healthy family), in India in 2007. Arogya Parivar aims to improve health-care access and reach to remote rural communities.

HEADQUARTERS: Novartis Group Social Business, Singapore

YEAR OF FOUNDING: 2007

FOUNDERS: Novartis

LEGAL STRUCTURE: For-profit

BUSINESS MODEL: Business-to-consumer (B2C)

SECTOR AND SUB-SECTOR: Health

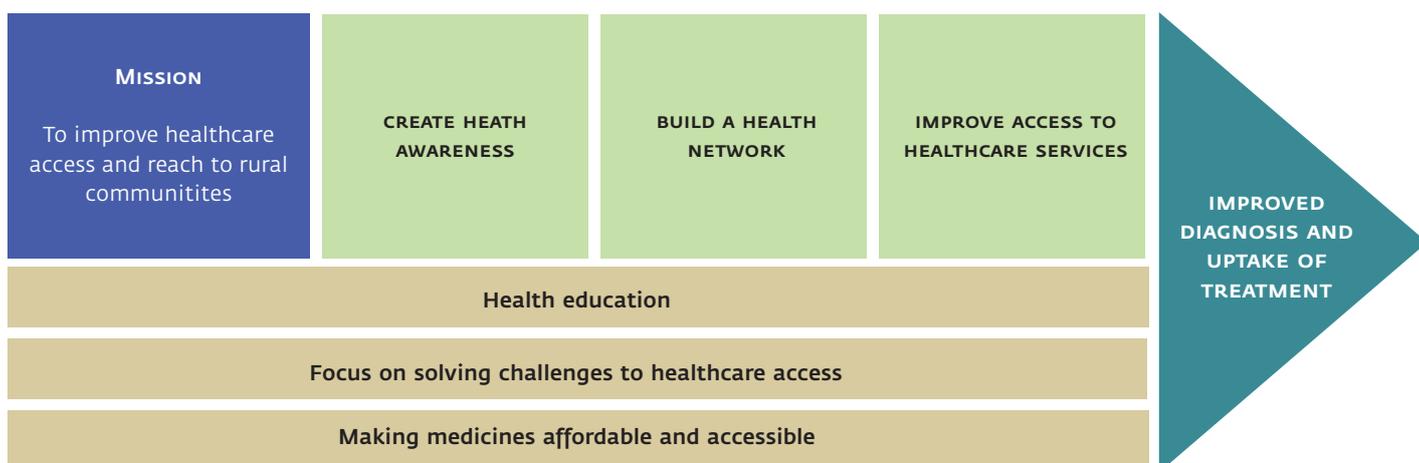
Around the world, 1.7 billion people lack access to the most basic medicines. Limited healthcare infrastructure, poor doctor-patient ratio, and low awareness and presence of counterfeit drugs further worsen the situation in the rural areas of developing countries. Arogya Parivar is a for-profit healthcare initiative that seeks to increase access to quality and affordable healthcare services in rural India. The program has an integrated network of stakeholders ranging from community-based health educators, sales professionals, doctors, hospitals, and pharmacies. Together, they contribute towards health awareness, disease prevention, timely treatment, and access to low-cost drugs. Since its launch in 2007, Arogya Parivar has trained more than 500 health educators and supervisors, and improved access to healthcare in rural areas of ten states across India, home to more than 70 million people.

Motivated by Arogya Parivar's success in sustainably improving health outcomes in India, Novartis's Group Social Business transferred the program to 25 wards in nine counties in Kenya (Familia Nawiri) and four provinces in Vietnam (Cung Song



Credit: Dipika Prasad

FIGURE 26
AROGYA PARIVAR'S VALUE CHAIN ACTIVITIES



Khoe). It is about to start social activities with healthcare professionals in the Keluarga Sehat registry in Indonesia (see figure 30). The programs are named in the national languages of respective countries to develop local connects.

AROGYA PARIVAR'S BUSINESS MODEL IN INDIA

Over 65 percent of Indians lack access to essential medicines. Medicines account for a sizable share of overall health expenditure; around 77 percent of health expenses in rural India are for medicines alone. Low-income communities in India particularly suffer due to the poor public-health system and low penetration of health insurance. Out-of-pocket medical costs alone push 2.2 percent of the population below the poverty line³³. Arogya Parivar, launched by Novartis, addresses the challenge of access and affordability of medicines. After breaking even in India in 2011, the program was expanded to Kenya, Vietnam, and Indonesia.

Launched on a small scale with three pilots in 2006-07, Arogya Parivar expanded to 250 Arogya cells across 10 Indian states. Each Arogya cell has one educator and one cell supervisor. They collaborate to generate awareness and improve accessibility of health-care services and medicines. Field operations are structured into cells (a cell is a market of 25 to 35 km radius, that serves about 80 to 100 villages). Arogya Parivar also works with nearby city-based distributors to supply essential medicines to over 28,000 rural pharmacies. To reach deeper more efficiently, Arogya Parivar appoints direct distributors in villages, who are supplied medicines directly from the company warehouse.

Addressing the need for health education

The health educators provide health information to the community with the aid of vernacular and multi-lingual collateral. They raise awareness on local diseases, preventive health measures, hygiene, and nutrition. They focus on important health challenges such as tuberculosis, malaria, rabies, iron deficiency in women/children, and diabetes. They also inform patients of the importance of completing prescribed dosages of medication and the danger from counterfeit drugs. The program reaches around 2.5 million people annually (2013) through

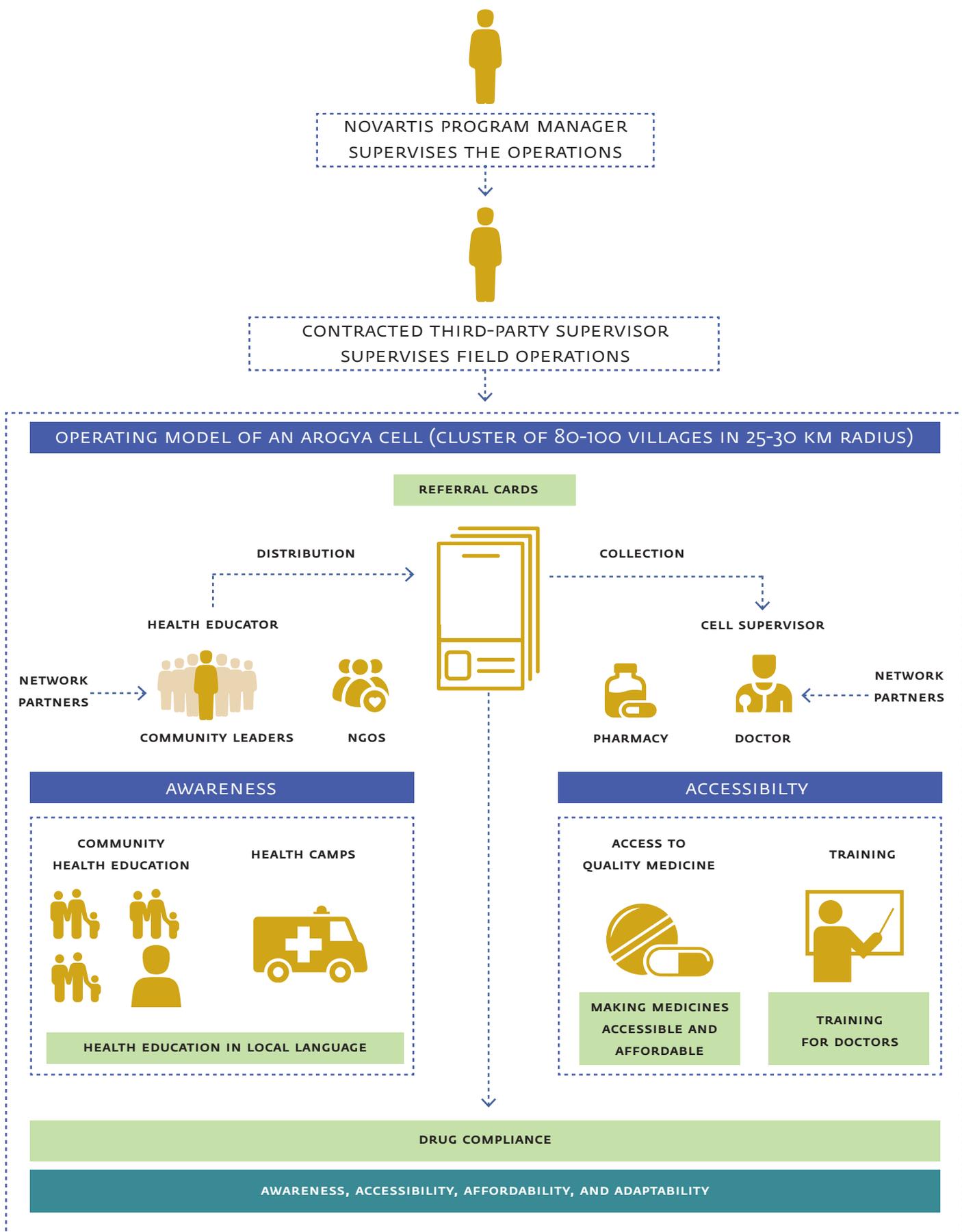
"While expanding to new states in India, we focus on reaching out to areas which do not have an existing Novartis supply channel."

Mr. Meghdoot Deherkar
HEAD OPERATIONS,
AROGYA PARIVAR

health education meetings (HEMs). The impact is tracked through referral cards collected from doctors. Between 2010 and 2013, more than 300,000 health education meetings on 11 disease areas were conducted for more than 10 million villagers. Another 450,000 people directly benefited through health camps by qualified doctors.

33. Many Indians lack access to essential medicines. June, 2010. Times of India.

FIGURE 27
AROGYA PARIVAR'S OPERATIONAL MODEL





Credit: Arielle Molino

"Arogya Parivar's business and operational model is based on the four pillars of awareness, adaptability, availability, and affordability. The belief is that of these principles work in an integrated way, they can ensure long term impact."

Mr. Anuj Pasricha
 HEAD, GROUP SOCIAL BUSINESS
 NOVARTIS

Building a health care network to reach underserved communities

Cell supervisors focus on strengthening local pharmaceutical distribution networks to ensure availability of medicines. The program targets tier 4 and tier 5 towns and adjoining rural areas. The team develops relationships with pharmacies and physicians working in these areas. This now includes 33,000 doctors and 28,000 pharmacies. They help the program deliver quality products to target geographies. Arogya Parivar also

brings qualified medical practitioners closer to the villages through health camps. The team conducts around 600 to 700 health camps every month, which directly benefit 450,000 people annually.

Making medicines affordable and accessible for the underserved

Arogya Parivar makes medicines affordable and accessible by expanding its product portfolio to cater to diseases prevalent in target areas. By 2015, the product portfolio is expected to expand to around 100 medicines and 160 individual pharmaceutical, generic, and over-the-counter products to treat conditions ranging from tuberculosis and diabetes to pain and cold relief and dietary supplements. The portfolio expansion aims to cover 80 to 90 percent of the relevant disease burden. The generic molecules from Sandoz will make medicines more affordable as up to 70 percent of the portfolio will be priced at rural market levels.

EXPANDING AROGYA PARIVAR TO AFRICA

In Kenya, essential medicines are available in only 65 percent of hospitals and in less than 50 percent of primary health-care facilities. With multiple intermediaries in the distribution channel, medicines are unaffordable³⁴ for a majority of Kenyans. Poor availability of medicines in public hospitals also makes Kenyans, especially rural and low-income communities, vulnerable to counterfeit drugs.^{35,36} Given the need and market opportunity, the Arogya Parivar team found Kenya ideal for expansion. It was also seen as a gateway to East Africa.

Novartis launched the program in Kenya in March 2012 and named it Familia Nawiri (prosperous family in Swahili) to resonate with the local community. Since its launch in March 2012, Familia Nawiri operations have scaled to ten cells com-

prising 25 wards in nine counties, namely, Embu, Kirinyaga, Muranga, Nakuru, Kericho, Siaya, Migori, Bomet, and Meru. The counties were selected to ensure that the model was tested across diverse regions in Kenya and provide early understanding of the business environment in the country.

Since 2012, over 96,000 villagers have attended over 2,500 health education meetings. Besides valuable health education, beneficiaries also avail affordable comprehensive health care services. At the monthly health camps, patients access health check-ups for just \$2.23 as against the 10 times higher fee charged for similar services in hospitals³⁷. Novartis made this happen by optimizing resources to streamline health camp operations. This is depicted in the info-graphic below.

FIGURE 28
OPERATIONS FLOW IN FAMILIA NAWIRI HEALTH CAMPS



Credit: Arielle Molino

FIGURE 29
EXPANSION ROADMAP FOR AROGYA PARIVAR



Management Bandwidth

Building a lean team with strategic responsibilities

The Novartis Group Social Business global team, led by Anuj Pasrija, conducted research before transferring the Arogya Parivar program to other developing countries. In Kenya, a 26-member program team was locally hired. This included the head of operations, administrative staff, and three area managers to manage 19 field staff of territory supervisors and health educators. While strategic decisions such as country and transfer format selection were taken by the core team in Singapore, decisions related to on-ground implementation were made by the local team, which also identified multiple field partners (NGOs) to communicate and build strong relationships with the community.

Format and Country Selection

Employing a strategic approach and selecting Kenya as an entry for African expansion

Novartis took a strategic and systematic approach to country selection to further expand the program. This included an analysis of market size, customer demand, investment climate, political risks, and regulatory environment. It analyzed over 67 countries to assess social needs, commercial viability, and investment climates. Kenya was selected as the gateway to the African market.

Working with partners to overcome legal hurdles

Novartis prefers setting up its own operations as it allows complete control over quality of service offerings and operational costs. It also helps Novartis align brand values and mission across geographies. However, it has to work closely with partners to overcome legal challenges.

Leveraging channel partners' networks for outreach

Novartis reaches out to remote communities through partnerships with local organizations working in target areas. The program team also builds strategic partnerships with NGOs

and local government. It partnered with PSI Kenya to promote hygiene education, leveraging PSI's household water-treatment products network. It worked with the Ministry of Social Welfare to identify registered social groups to target for health education. Novartis continues to build similar partnerships to connect with the community and reinforce positive behavior change. For instance, Familia Nawiri identified high out-of-pocket spending for health as the key barrier to appropriate health-seeking behavior. To address this, it is finalizing partnerships with channel partners such as Changamka for micro-insurance and Mobile Medical savings card. These partnerships will improve access to allied health-care services and products.



Credit: Arielle Molino

34. A typical wage-earning Kenyan would need a month's salary to purchase a seven-day course of ciprofloxacin for adult respiratory infection.
35. Fact Sheet: The essential medicines crisis in Kenya. Stopstockouts.
36. According to Pharmacy and Poisons Board of Kenya (PPBK), an estimated 30 percent of drugs sold in Kenya last year were counterfeit, accounting for an annual loss of more than Kenyan shillings 10 billion (\$117 million).
37. Intellectap analysis from field study in Mwea and Embu, Kenya, November 2014.

Financial Readiness

Building group reserves by planning towards timely breakeven

Novartis Group Social Business provided initial funding for Arogya Parivar India and its Africa and Asia expansion. While Arogya Parivar India has achieved financial sustainability, the Africa initiative is yet to do so. On-ground research and insights from the local sales team indicate that the African pharmaceutical market faces constraints such as counterfeit drugs, low population density, poor state of healthcare infrastructure, and high cost of operations, which result in a longer break-even period. Around 30 percent of the clinics have reached break-even, and the team is focused on increasing footfalls as well as sales of drugs to expedite break even for all the units. To cover its higher cost of operations, Familia Nawiri expanded revenue sources by charging a fee at health camps, which are conducted free of cost in India. Novartis has estimated that it will take it around five years to break-even in Africa. The group social business will fund operations till then.



Credit: Novartis Arogya Parivar

"The key success factor is the independence provided to country offices to innovate around and customize the program. Another critical factor is the capital commitment from the company as these types of initiatives require patient capital."

Anthony Gitau
COUNTRY HEAD, KENYA,
GROUP SOCIAL BUSINESS
NOVARTIS

Operational Readiness

Drawing from the India experience and customizing the program to suit the local context

The Indian operations achieved break-even after a successful three-year run and were streamlined to suit rural market requirements. The team identified key business dependencies for the program's success. It explored new markets for expansion by assessing the presence of: (i) drug distribution networks, (ii) health-care professionals, and (iii) suitable partner organizations.

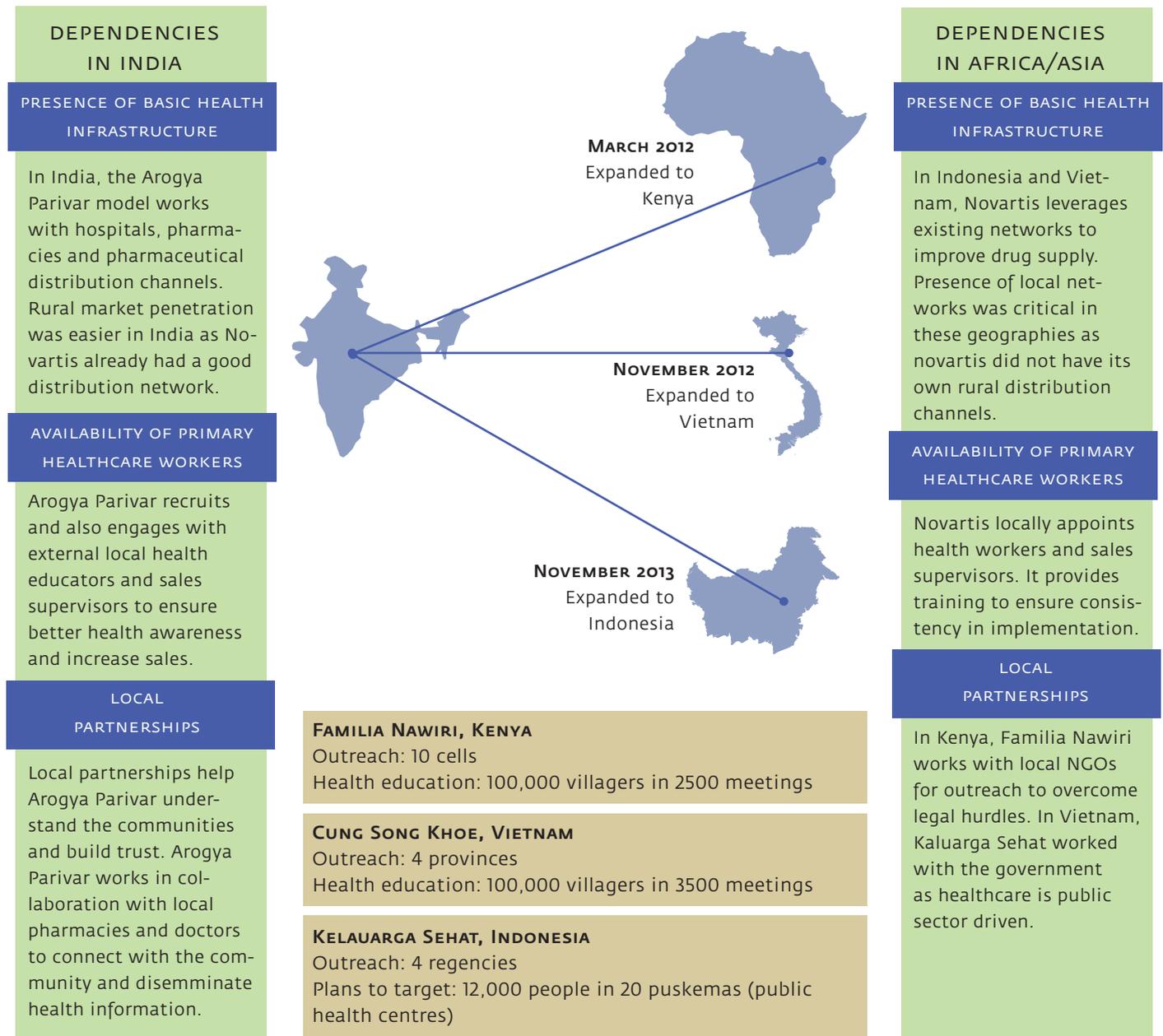
The Indian experience underscored the importance of customizing the program to suit local cultural and demographic contexts. For instance, population density in rural Kenya is low, and villagers have to travel long distances to attend meetings. The Familia Nawiri team realized it was not viable to conduct meetings in every village and customized the model to suit local conditions. Health educators now target organized groups such as self-help groups (SHGs) and church groups for health-education activities.

EXPANDING AROGYA PARIVAR TO ASIA

In the last decade, Vietnam has made significant progress in building health-care infrastructure. Medicine production, supply, and use have increased consistently, with per capita expenditure on medicine rising from \$6 to \$19.80. Nearly 49 percent of the demand for essential and generic medicines is met through domestic production. However, Vietnam still faces challenges in access to essential medicines, especially in rural and mountainous areas. As pharmaceutical distribution is weak in rural areas, prices of medicines are higher than international reference prices and patients continue to bear the cost.³⁸

FIGURE 30

TRANSFERRING AROGYA PARIVAR FROM INDIA TO SOUTH EAST ASIA AND AFRICA



Novartis’s Group Social Business team launched the Arogya Parivar program in Vietnam in November 2012, and named it Cung Song Khoe. Since its launch, Cung Song Khoe has scaled to four provinces: Nghe An, Thanh Hoa, Nam Dinh, and Tien Giang. The program works with over 160 community health workers, 30 hospitals, and 320 medical students. It conducted over 3,400 health education meetings and 1,100 trainings for health-care professionals.

Management Bandwidth

Building a local team to develop cultural connect

A local team, as Novartis’ experience in India and Africa showed, would understand country dynamics better and more suited to connect with government and local target communities. Therefore, similar to the approach it took in Kenya, Novartis recruited a nine-member lean local team to run the program in Vietnam. This team leads local strategy, collaborates with pharmacies and hospitals, and streamlines drug delivery.

38. WHO and Vietnam Access to essential medicines. International Pharmaceutical Federation.

Format and Country Selection

Strengthening the model in a country with a different operating context

Healthcare is led by the public sector in Vietnam. Novartis made a conscious decision to expand to Vietnam as it was keen to test and develop its social business model in a market where government plays a significant role in health care. As the model is highly dependent on field operations to be successful, Novartis continues to retain control over operations. However, in Vietnam, the team functions in close coordination with government officials.

Financial Readiness

As in Kenya, the Novartis Group Social Business provided initial investment to run the program. Vietnam faces similar health care delivery challenges as Kenya, such as poor infrastructure, poor health indicators, cultural barriers, and low population density. Taking these factors into consideration, the team expects to achieve operational break-even by December 2016. Novartis Group Social Business will fund the Vietnam operations till then.

Operational Readiness

Strategic partnership with the government for better outreach and overcoming local challenges

Engaging with the government remains an essential condition to operate in Vietnam, given the public sector-led healthcare model and government control over mass communication channels. Novartis, therefore, partners with the government to implement its program in Vietnam. Government doctors and medical students double up as health educators, while Novartis's staff provides training and supervises delivery of health-education programs. It also builds partnerships with pharmacies and hospitals to streamline drug delivery.

In Vietnam, awareness programs such as *Cung Song Khoe* require approvals by the government. The government also monitors all content that is disseminated. To address this challenge, the Novartis team conducts dissemination activities through government doctors. This not only helps the team gain the trust of the government, but it also gets faster approvals. Also, Novartis keeps costs of operation low by leveraging the government health care workforce.

Strategic approach to country and transfer format selection

Successful expansion warrants a strategic and systematic approach to country selection. This includes an analysis of market opportunity, investment climate, political risks, and regulatory environments. Novartis conducted detailed analysis of over 67 countries based on similar parameters, social need, commercial viability, investment climate, internal capability, and the group's strategic inclination. Arogya Parivar prefers setting up its own operations as it allows complete control over the quality of service offerings and operational costs. It also helps Novartis to align brand values and mission across geographies.

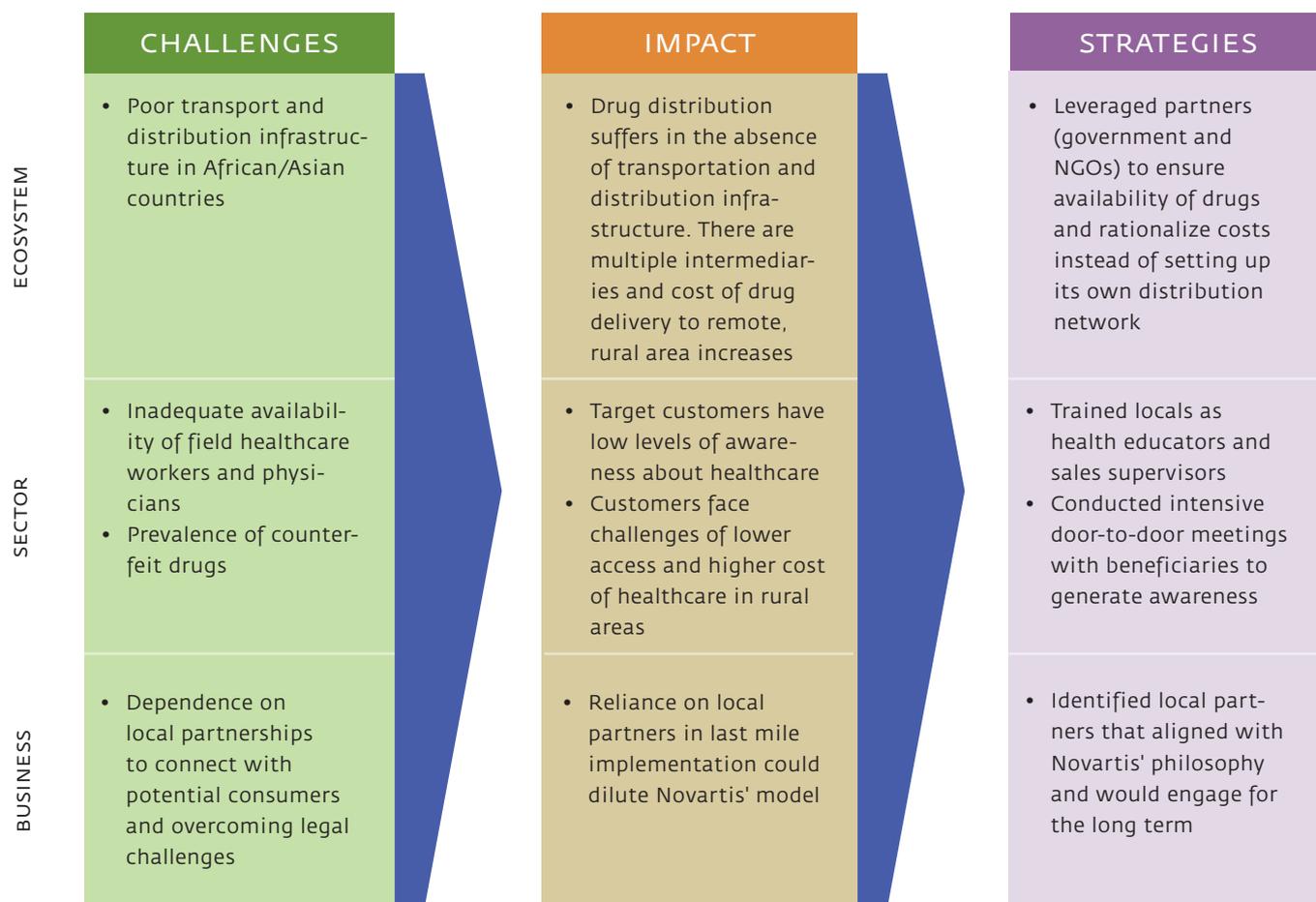
Flexibility in forging partnerships for better outreach

Geographic expansion implies navigating unfamiliar territory, and requires in-depth understanding of prospective customer bases, local culture and beliefs, market dynamics, and potential risks. Forging good partnerships can help build quick understanding of some of these factors while ensuring maximum outreach. Partnerships provide access to ready-made teams for initiatives like Arogya Parivar, which require significant field force for outreach. Building and leveraging strategic partnerships with NGOs, governments, distributors, and other stakeholders has been a key success factor in Novartis's transfer to Africa and Asia. Even as Novartis seeks to develop its own sales network in these countries, it continues to work closely with its outreach, distribution, and product partners.

Investing in the destination country

Inclusive businesses intending to transfer their models should invest in the destination countries and build local workforces. This can help businesses build trust and brand equity in new countries. Apart from an understanding of local culture and business environments, local talent brings local experience and connections to develop customer relationships and relevant partnerships on the ground. Novartis sought to hire and train locally in Africa and Asia to ensure long-term sustainability. In non-English speaking regions, local teams with regional language skills are invaluable in communicating with beneficiaries. Local staff also plays an important role in customizing health information in vernacular languages and audio-collateral.

FIGURE 31
CHALLENGES AND KEY INSIGHTS FOR TRANSFER



Creating an enabling environment for the country teams

Another critical success factor for the Novartis initiative is the flexibility given to country teams to innovate and customize the model while maintaining common elements. Novartis believes local teams understand the nuances of doing business in the region and are best placed to innovate and customize the model. Local teams, therefore, function independently and plan their expansion strategy as per regional dynamics. That said, they also work closely with the head office and leadership in other countries to learn from their experiences.

FUTURE PLANS

Novartis seeks to continue its global expansion across Asia and Africa. In India, the plan is to expand to around 16 states by 2017. In Kenya, it plans to strengthen the model and build more partnerships to increase coverage. Break-even is expected by December 2016. In Vietnam, Novartis plans to expand to 10 to 15 provinces in the next three or four years. The program in Indonesia is in its early stages, but the target is to pilot the program in one regency and then take it forward based on the experience with the pilot. Novartis envisions expanding to 20 to 22 countries in Africa and South East Asia in the next five to ten years.

CASE STUDY 8
OPERATION ASHA

Transfer format: Wholly-owned subsidiary and knowledge sharing
Countries of operation: India, Cambodia, Kenya, Uganda, and Dominican Republic

Operation ASHA is dedicated to bringing tuberculosis treatment and health services to the poorest of the poor globally. It is the world's largest NGO engaged in tuberculosis treatment and prevention, providing these services to over 6.1 million people.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: Operation ASHA aimed to scale its efforts, in alignment with its mission to provide services for the prevention and treatment of tuberculosis globally.</p> <p>Preparation: It examined TB prevalence in Cambodia and customized its model to align it with the National TB program. It also modified its approach to suit the low population density in the country,</p> <p>Format preference: It expanded to Cambodia to strengthen business and operating model. Operation ASHA shared best practices with interested recipients so that the model could be customized to local context. In Africa, it chose knowledge transfer as it is a faster route to scaling impact.</p> <p>Country preference: It selected countries with high TB prevalence for expansion.</p>	<p>Management readiness: Operation ASHA has a strong second level of management including a country head and operations director. The founders spend less than 15 percent of their time on operations.</p> <p>Financial readiness: It received government and donor funding for transferring the model in Cambodia. In Africa, it chose knowledge transfer format, which did not require significant investment.</p> <p>Operational readiness: It ensured the model was well established at scale in India before testing and strengthening it in multiple settings and geographies.</p> <p>Validating need for product/service in Africa: Preliminary research established that running costs of treatment is very high in many developing countries. There was a need for a leaner, technology-driven, cost-effective model to fight tuberculosis.</p>	<p>Presence of Healthcare Infrastructure: The business model relies on availability of basic health infrastructure such as hospitals and diagnostic labs.</p> <p>Government and donor support: Aligning the model with government TB programs helps gain access to government healthcare networks of doctors and healthcare workers. It also depends on donors to support other program activities.</p> <p>Local Workforce: Operations rely on the presence of a local workforce, which can be trained for patient drug monitoring, creating health awareness and improving detection</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Limited infrastructure to connect sparsely populated rural areas and bridge large distances between residential areas, necessitating additional efforts for delivering and sustaining TB care
Sector: Poor availability of basic health infrastructure such as diagnostic facilities, impacts early diagnosis and delays treatment
Business: Model relies extensively on Government and external funding support to establish and expand the model

KEY TRANSFER INSIGHTS

- Operation ASHA adopted a systematic approach to transfer by validating the model in a different settings and geographies before embarking on knowledge transfer activities
- Aligning with national TB programs helped Operation Asha gain access to government healthcare infrastructure, and helped it establish quick connect and acceptance within the community

Operation ASHA is dedicated to bringing tuberculosis treatment and health services to the poor globally. It is the world's third largest NGO in tuberculosis treatment and prevention (in terms of number of patients), providing services to 6.1 million people. Operation ASHA operates 194 centres across nine Indian states. It has transferred its India model to Cambodia, Kenya, Uganda, and the Dominican Republic.

HEADQUARTERS: New Delhi

YEAR OF FOUNDING: 2006

FOUNDERS: Dr. Shelly Batra and Sandeep Ahuja

LEGAL STRUCTURE: Non-profit

BUSINESS MODEL: Business-to-consumer (B2C)

SECTOR: Health

According to WHO (2012) estimates, 8.6 million³⁹ people are diagnosed with tuberculosis (TB) annually across the world. In 2012, about 80 percent of reported TB cases were concentrated in 22 countries, most of which are low-income economies.⁴⁰ There is also a significant rise in the number of patients with multi-drug resistant TB (MDR-TB). Globally, over 450,000 people have developed MDR-TB. Treatable TB develops into MDR-TB when the course of antibiotics is interrupted or missed or taken in wrong dosage.

Founded in 2006 by Dr. Shelly Batra and Sandeep Ahuja, Operation ASHA provides door-step delivery of TB medication for the under-served. It scaled to over 194 centers across nine Indian states. In 2013, Operation ASHA enrolled 7597 TB patients across India. The Indian operations are mostly urban-focused with 80 percent of program activities concentrated in urban slums where patient populations are significantly high. In addition, Operation ASHA also works in tribal areas in Jharkhand and Madhya Pradesh and a few rural areas to test and strengthen the model based on learnings from different settings.

The organization works in close collaboration with the government, aligning itself with the Revised National Tuberculosis Control Program (RNTCP). The model ensures supervised medicine delivery to patients with the help of electronic compliance tracking, a self-developed patented technology for electronic monitoring and record keeping. Driven by its mission to eradicate TB, Operation ASHA aims to make its technology and model available to organizations with the same mission globally, making TB treatment more widely accessible, especially for underserved communities.

Operation ASHA launched its Cambodia operations in 2010.



Credit: Operation ASHA

Since its launch, the program has scaled to over 51 centers in two provinces, Phnom Penh and Takeo. The model was also transferred to Uganda in 2012 by Millennium Villages, a program by Columbia University's Earth Institute. Clínica de Familia, a local non-profit organization adapted it for the Dominican Republic in November, 2013. Millennium Villages also implemented the model in Kenya in 2014. Operation ASHA acted as a knowledge and technology partner for these transfers. Having experimented with both full expansion and knowledge transfer, the leadership team at Operation ASHA decided to adopt the knowledge-transfer route for future expansion.

39. WHO fact sheet. March, World Health Organization. 2014.

40. Low-income groups are more vulnerable to MDR-TB, given the lack of awareness, timely treatment, sufficient nutrition, and recuperation time. TB is also highly communicable. A patient left untreated can infect over 12 other people. Operation ASHA is driven by the mission to expand high-quality TB treatment at affordable prices to low-income communities globally.

OPERATION ASHA'S BUSINESS MODEL IN INDIA

India accounts for 2.8 million TB patients, around 31 percent of the world's TB population.⁴¹ TB is a leading cause of death, with over 750 deaths per day resulting in a loss of \$300 million per year due to loss of wages. While the target of TB elimination by 2035 looks difficult, RNTCP⁴² has been relatively successful in improving TB control. However, it faces multiple challenges such as low awareness, low outreach, and high cost structures of implementation partners (NGOs). Operation ASHA has developed a low-cost operational model, an electronic compliance tracking technology, and a detection application that ensures early diagnosis and supervised treatment. It is funded primarily by government and donors. The government supports its activities by providing doctors, medicines, free diagnostic services, and cash grants. Donor agencies and international NGOs also fund program activities. The lean operational model helps bring down per

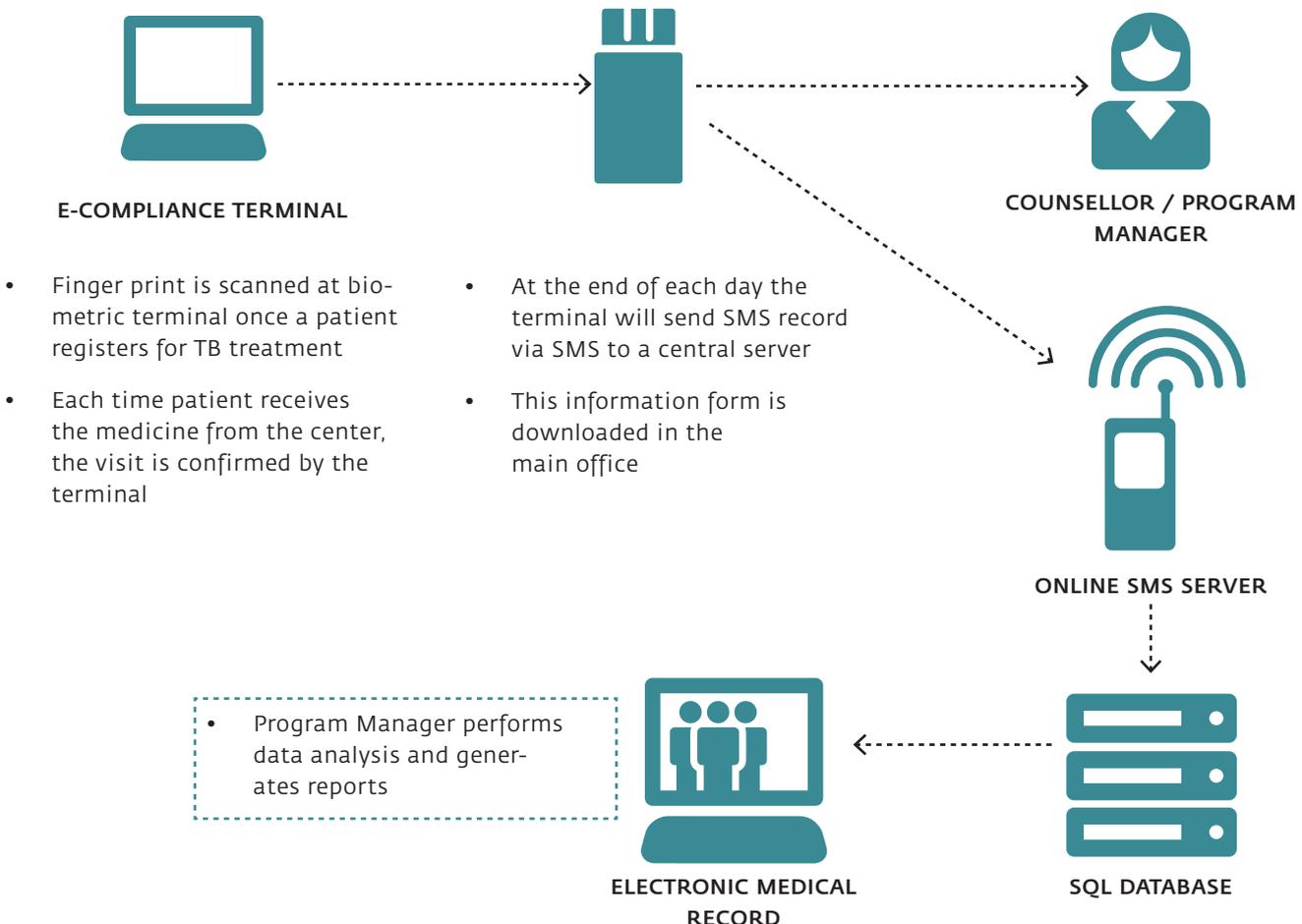
patient treatment cost to \$82, which is 19 times lower than the nearest other provider.⁴³

Enabling low-cost delivery through technology and a lean operation model

In urban locations, Operation ASHA sets up TB treatment facilities in co-rental or frequently visited places such as a local clinics or temples. Also every health worker manages two centers, operating each on alternate days in accordance with RNTCP's prescribed schedule of TB dosage. Health workers are recruited from a pool of local unskilled labor. This is done to optimize resources and bring down operational costs.

Patients visit the center and are given a supervised dose in the presence of the health worker. If the patient misses a dose, the electronic compliance tracking system alerts the health worker, who follows up with the patient within 48 hours. The compliance system is the backbone of the operating model

FIGURE 32
OPERATIONAL MODEL FOR OPERATION ASHA



and tracks the process to minimize dropouts. Health workers counsel patients on the importance of completing the course of medication and precautions to avoid spread of the infection. In rural locations, they follow a door-to-door delivery model as it is unviable to set up a center in every village or expect villagers to travel long distances for medication.

EXPANSION OF OPERATION ASHA'S BUSINESS MODEL IN ASIA AND AFRICA

Cambodia is one of the 22 high TB-burden nations worldwide, with an incidence of 442 cases per 100,000 people.⁴⁴ Cambodia's national TB program is well-positioned to meet and sustain its goals. However, it faces inherent challenges, especially in delivering treatment in rural areas. Having established the model in India, Operation ASHA expanded the program to Cambodia in 2010. Since its launch, the program has scaled to over 51 centers in two provinces, Phnom Penh and Takeo. The current patient outreach is around 280 to 300 patients per month. As in India, Operation ASHA works in collaboration with the national TB program in Cambodia. The government supports operations by providing doctors, medicines, and free diagnostic services.

Management Bandwidth

Building a lean team with strategic responsibilities

Operation ASHA's expansion efforts were led by the co-founder, Sandeep Arora. It hired a lean senior management team consisting of a country head and operations director to provide local leadership and manage field operations in Cambodia. The team took the lead in recruiting the field-level personnel and training them to streamline workflows. Since the model was stable and well documented, the founders needed to spend less than 15 percent of their time on operations related to expansion. This left them with greater bandwidth to deliberate on strategy and business building.

Format And Country Selection

Setting up a wholly-owned subsidiary in Cambodia

Operation ASHA intended to make its operating model robust and suitable in all demographic contexts. For this, it needed to implement its model in a new country and adapt it to local conditions. It looked at setting up operations in a country with high TB prevalence and a supportive government running a national TB program. As a result, it selected Cambodia for expansion. The team was able to access external funding



Credit: Operation ASHA

"The move to Cambodia was aimed at testing and strengthening the model and technology in a different geography. We do not intend to hire our own staff and scale further. Instead, we want to increase our impact through knowledge transfer."

Sandeep Ahuja
FOUNDER,
OPERATION ASHA

support and government backing to transfer the program to that country.

Operation ASHA wanted to retain control over field operations and the independence to make changes as required in its e-compliance system. This was to be able to improve the model and the software application. Hence, the founders decided to set up a wholly-owned subsidiary in Cambodia.

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- 41. Global Tuberculosis Report. World Health Organization.2013.
 - 42. The prescribed course for TB is an intense six-month dose. A digital treatment compliance and counselor performance tracking system (eDOTS) can significantly improve treatment quality.
 - 43. Based on results of LGT Venture Philanthropy, a Swiss organization's due diligence of Operation ASHA's work on TB in India.
 - 44. Global TB control. 2010. World Health Organization.



Credit: Operation ASHA

Transferring the model through knowledge-sharing format

After refining and perfecting its operating model in India and Cambodia, the team focused on financial sustainability and scale. Since it sought quick and cost-efficient approaches to scale, Operation ASHA experimented with transfer through knowledge-sharing in Kenya, Uganda, and the Dominican Republic.

Millennium Villages, an initiative by Columbia University's Earth Institute, transferred the model to Uganda in 2012 and Kenya in 2014. Clínica de Familia adapted it for the Dominican Republic in 2013. Operation ASHA shared best practices in TB treatment delivery, operational model, and e-compliance technology with these transfer partners. It also provided assistance in customizing the model and technology to suit local conditions.

Operation ASHA plans to continue taking its model to new markets through the knowledge-transfer route. It set up mA-SHA Technologies, a private limited company that provides consulting services and on-going support to partners for a one-time fee. As several potential partners are not-for-profit entities, they will need donor support.

Financial Readiness

Leveraging Government and external funding support

Operation ASHA's model was developed to work in alignment with national TB programs. Field operations and work flow are modified to suit existing program requirements. Operation ASHA, being a non-profit organization, is fully dependent on government and external donor support to successfully run the program.

The Cambodian government provided support to the organization in the form of regular drug supplies, infrastructure for diagnostic services, and monetary aid for operating costs. Funds provided by external donor agencies are utilized to make the model robust and fulfil operational costs.

Operational Readiness

Understanding the Cambodian operating model

Operation ASHA analyzed and compared the government TB program in Cambodia with that in India. The team also recognized the need to address demographic and cultural variations in Cambodia to manage the program accordingly.

The management team responsible for Cambodia identified the districts for initial implementation in consultation with the government. It recruited local primary health workers for on-ground implementation. It also revised the compensation structure for staff to align with Cambodian market conditions.

Customizing the operational model to suit local conditions

Cambodia is an agrarian economy with a 77 percent rural population. Villages are geographically dispersed and sparsely populated. Inadequate healthcare infrastructure such as

hospitals and diagnostic facilities exacerbates the situation. Operation ASHA adopted the door-to-door treatment delivery model where health workers travel on bikes and provide supervised treatment at patient doorsteps. This keeps operational costs low and overcomes the challenge of setting up physical centers in a new country. The e-compliance technology and delivery model are customized according to the dosage prescribed by Cambodia's national TB program. While medication is delivered every alternate day in India, it is delivered daily in Cambodia, as per the treatment practice approved by government.

FIGURE 33
TRANSFERRING OPERATION ASHA FROM INDIA TO AFRICA

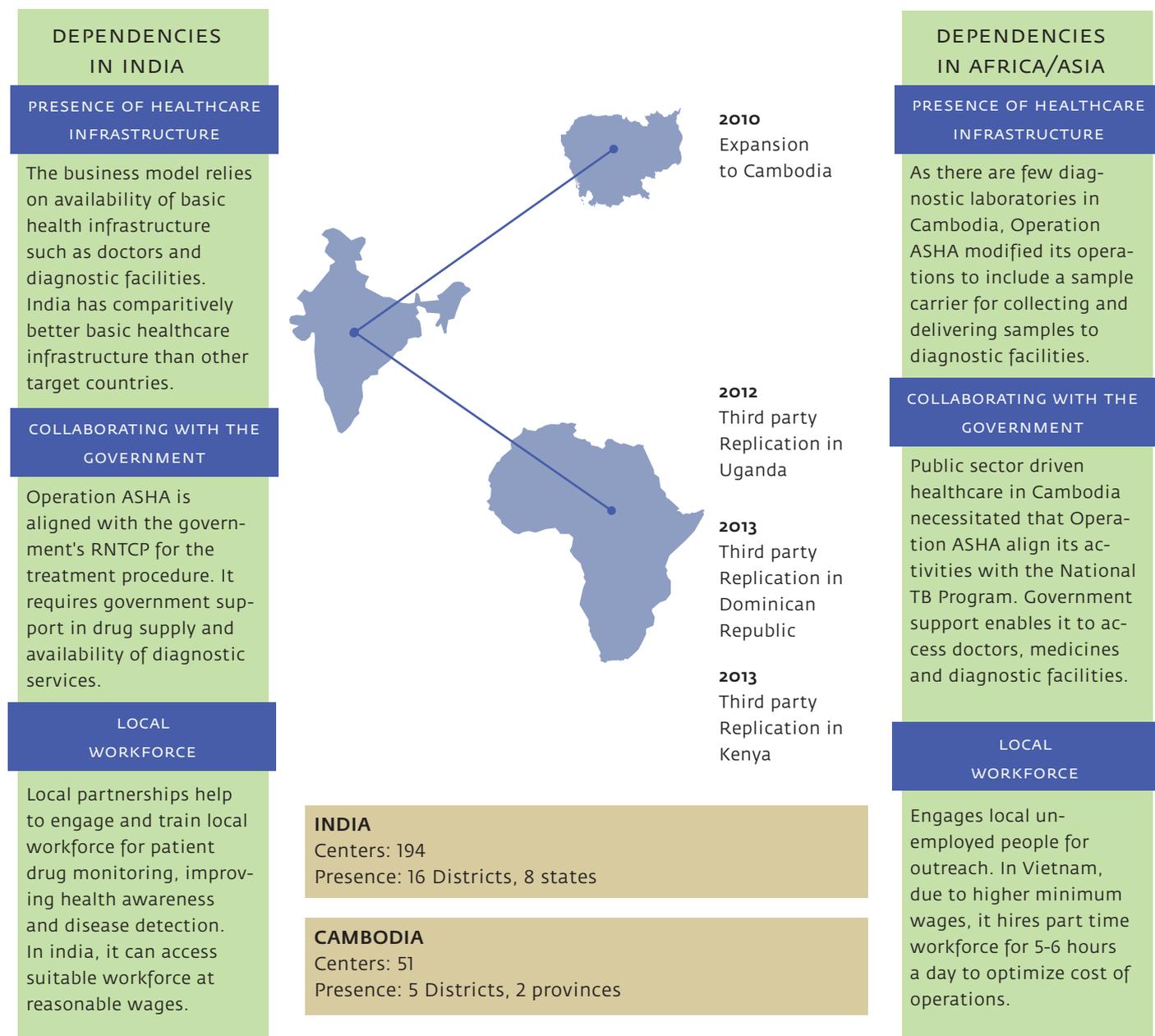
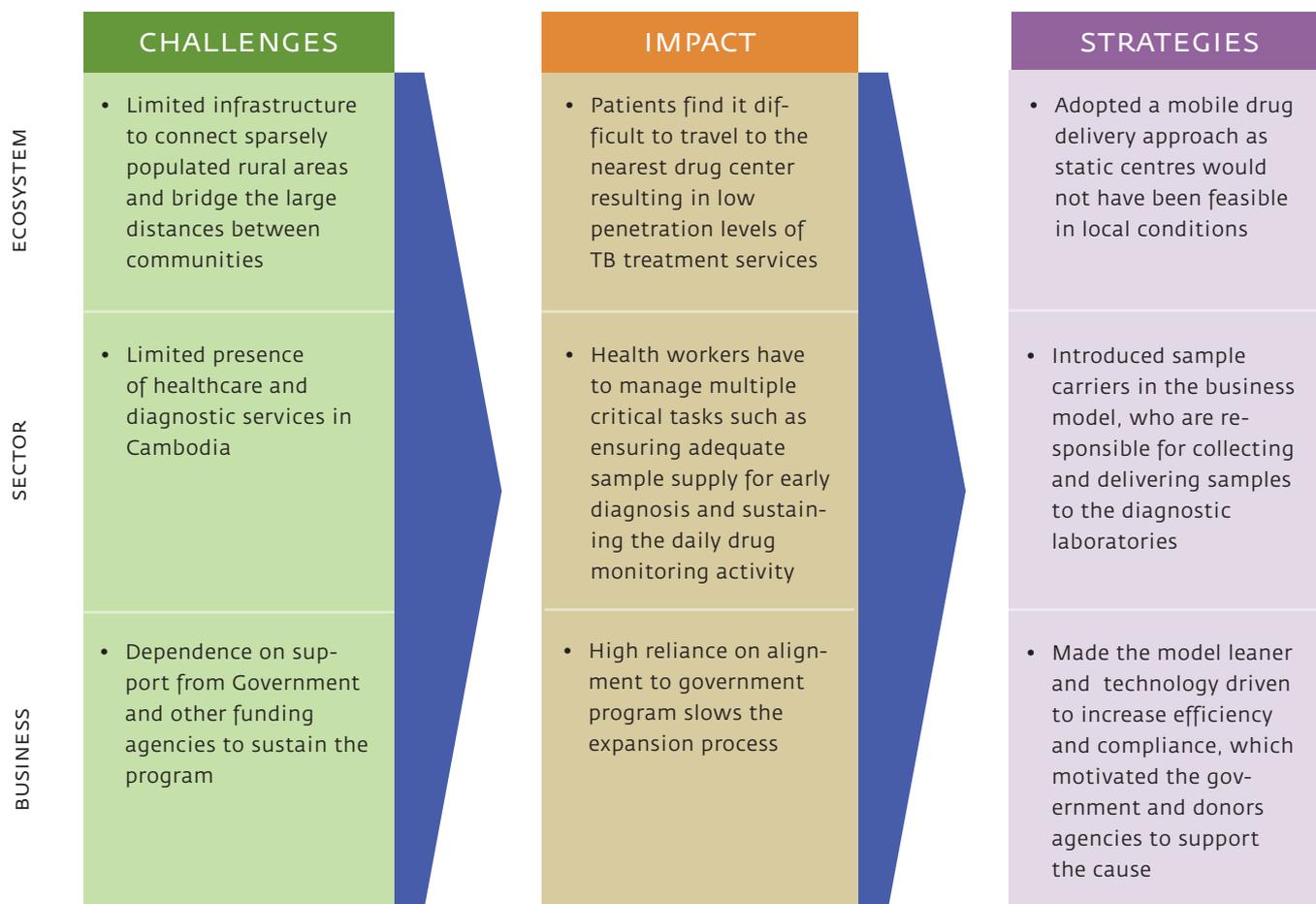


FIGURE 34
KEY CHALLENGES FACED IN TRANSFER



CHALLENGES AND KEY TRANSFER INSIGHTS

Knowledge transfer is a suitable format for non-profits keen to scale their impact

Not-for-profit organizations are usually very mission driven, and would like to reach target populations worldwide. However, achieving global reach is difficult. Knowledge transfer is an ideal transfer format for such organizations, especially those that develop innovative models to address development challenges and intend to scale impact rapidly.

Despite its considerable scale, Operation ASHA's TB patient outreach is barely 1 percent in India and 10 percent in Cambodia. The team strongly believes that it cannot address the huge global challenge of tuberculosis by itself. Having

experimented with two formats, Operation ASHA selected knowledge-sharing as the transfer format going forward.

Strategic approach to transfer

Successful knowledge transfer warrants a systematic approach to developing the business and operational model. It is critical that the organization intending to disseminate the model tests the model in different settings and experiments with customization before sharing it with other partners. It is also critical to standardize processes and develop a knowledge-transfer program with a focus on best practices.

Operation ASHA first tested its model in diverse settings, in urban, rural, and tribal India. Once it strengthened and established the model in India, it tested it in a new country, Cambodia. The team used insights from the field in India and

Cambodia to further refine the delivery model. Operation ASHA also experimented with knowledge-sharing as transfer format in Kenya, Uganda, and the Dominican Republic and standardized processes for knowledge transfer.

FUTURE PLANS

Operation ASHA intends to continue reaching out to around 5,000 to 10,000 patients annually in India and similar numbers in Cambodia. The plan is to continue to scale at a certain rate so that the operational model and technology can be improved based on insights from the field over time. Operation ASHA also intends to experiment with the model in diverse settings such as tribal areas or most-affected areas to develop the model more holistically. Globally too, it intends to proactively identify partner organizations in the healthcare

"In a decade, Operation ASHA's technology will change the way public health is delivered across the world, thus going beyond TB."

Sandeep Ahuja
FOUNDER,
OPERATION ASHA

space in Africa, Asia, Latin America, and Central Europe with similar missions interest in transferring the model. It plans to develop technologies such as active case filing for diabetes and other chronic diseases and health education tools under the banner of mASHA technologies. The overarching goal is to improve public health through development and implementation of innovative technologies.



Credit: Operation ASHA

Renewable Energy



Two out of three people in Africa lack access to energy for lighting and cooking purposes;⁴⁵ while businesses report annual revenue losses of up to 6.7 percent⁴⁶ as a result of frequent power failures. Energy demand in the region may grow as much as 80 percent by 2040, and each dollar invested in power infrastructure could lead to economic growth of \$15.⁴⁷

With over 589 million people in the continent lacking access to electricity⁴⁸ and a \$1 billion/year market for expensive and pollution-causing paraffin lamps⁴⁹ – the region presents a significant market opportunity for Indian renewable energy innovations in off-grid decentralized energy production and distribution – particularly in pico-solar devices and decentralized mini-grids. There is also a significant opportunity in making power affordable for SMEs that are growth engines of most economies in Africa. Inadequate power production coupled with huge distribution losses result in several days of power outages for African SMEs in a month, leading to loss of four to five percent of annual sales. As a result, nearly half of the SMEs in the region own or share diesel-powered generators.⁵⁰

⁴⁵. Africa Energy Outlook. International Energy Agency. 2014.

⁴⁶. World Bank Enterprise Surveys. Accessed in November 2014.

⁴⁷. Africa Energy Outlook. International Energy Agency. 2014.

⁴⁸. Lighting Africa Market Trends Report, International Finance Corporation, 2012.

⁴⁹. Lighting Africa Market Trends Report, International Finance Corporation, 2012.

⁵⁰. World Bank Enterprise Surveys Database. Accessed in September 2014.

Case Studies

1. Astonfield Solesa
2. Greenlight Planet
3. SKG Sangha

CASE STUDY 9
ASTONFIELD SOLESA

Transfer format: Joint venture with Solesa Group
Countries of operation: India, Kenya, Uganda, Tanzania, Egypt, and Mauritius

Astonfield Solesa designs and constructs decentralized solar mini-grid power systems for the Small and Medium Enterprise (SME) segment in India and East Africa. The firm is a joint venture between India-based Astonfield Renewables and Italy-based Solesa Solar Group

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: Astonfield sought to expand to new international markets that offered better operating margins and a less competitive environment in order to improve profitability.</p> <p>Preparation: It refined its business model to decrease reliance on public sector and focus on the private sector; and hence shifted from large-scale centralized grid projects to small-scale decentralized mini-grids and captive solar power plants targeted at SMEs.</p> <p>Format preference: It entered into a strategic partnership with a like-minded firm that could bring in complimentary strengths and share the risk of expanding to Africa.</p> <p>Country preference: Astonfield selected Kenya as it wanted a regional headquarters and saw Kenya as a gateway to Eastern and Southern Africa.</p>	<p>Management readiness: Astonfield's Co-Chairman took up Africa expansion in a full-time strategic role, and some of the firm's 2nd line leadership was assigned to support him. Also merged operations with Solesa Solar to bring in a local team.</p> <p>Financial readiness: It secured funding ahead of Africa expansion, and built a working capital base to last 2-3 years in Africa in a pre-revenue/profit scenario.</p> <p>Operational readiness: It identified a strategic partner with technical expertise needed to serve private sector clients, and entered into a joint venture with Solesa Solar.</p> <p>Validating need for product in Africa: Astonfield Solesa, the joint venture, carried out market research which identified the need for solar-hybrid power system for SMEs in India and East Africa.</p>	<p>Customers needing industrial-scale grid-backup: Grid-connected customers that face power shortage, and require 100kW to 10MW of power.</p> <p>Regulation: Facilitative power tariff policies to support solar mini grids, instead of public-sector driven subsidies.</p> <p>Import Reliance: Cost of importing and transporting solar PV panels from other countries.</p> <p>Channel partners: Reliance on in-country channel partners to support customer acquisition and servicing.</p> <p>Cost-benefit dynamics: Dependence on favorable comparison to price of grid/grid backup (for instance, diesel generators).</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Sparse SME segment in Africa; insufficient bank financing for SMEs
Sector: Cost of power production four to five times higher than India; scale of decentralized solar mini-grid projects much smaller than India as well. These combine to cause margin pressures
Business: Few existing relationships with the potential customer segment, necessitating investment in building market share for first few years taking into account a pre-revenue/profit scenario

KEY TRANSFER INSIGHTS

- Astonfield analyzed African countries based on business dependencies to find the right markets for expansion
- It invested in building market share and relationships with banks for project financing for the first few years, reducing its margins for this purpose
- It refined business model for the African context from being margin-focused to volume-focused
- It took a lean approach to building management capacity for expansion
- It built a local identity and invested time in building customer trust

Astonfield Solesa designs and constructs solar-hybrid mini-grid power systems for the small and medium enterprise (SME) segment in India and East Africa. Its decentralized mini-grids are targeted at SMEs that operate in areas with inadequate power supply from public grids and therefore rely on expensive and environmentally harmful diesel generators. The firm is a joint venture between Astonfield Renewables in India and Solesa Solar in Italy.

HEADQUARTERS: Mumbai in India and Nairobi in East Africa

YEAR OF FOUNDING: 2013

PROMOTERS: Astonfield Renewables and Solesa Solar

LEGAL STRUCTURE: Joint venture, incorporated as Astonfield Solesa Solar Private Limited in India and Astonfield Solesa Solar Kenya Limited in Kenya

BUSINESS MODEL: Business-to-consumer (B2C)

SECTOR AND SUB-SECTOR: Renewable energy, solar-hybrid

Nine of ten companies in developing countries are small or medium enterprises (SMEs),⁵¹ and they are widely acknowledged as economic growth engines in these markets. Developing countries in Asia and Africa are home to over 30 million SMEs⁵² that contribute significantly to economic progress in these regions. These SMEs operate in difficult business environments with inadequate infrastructure like roads, power, and telecom networks. Lack of power infrastructure is especially crippling; SMEs often face several days of power outages in a month, leading to losses of four to five percent of annual sales. Approximately 40 to 45 percent of SMEs own or share diesel-powered generators⁵³. This presents an opportunity for

51. Promoting SMEs for Development. 2004. OECD.

52. Enterprise Finance Gap Database. 2014. IFC and Intelicap Analysis. 2014.

53. World Bank Enterprise Surveys Database. Accessed in September 2014.



Credit: Astonfield Solesa

private-sector actors to develop cheaper and cleaner alternatives to diesel generators for on-site power back-up.

Astonfield Solesa was set up in 2013. It designs and constructs solar hybrid power systems to help SMEs decrease reliance on diesel. The firm's hybrid power system draws electricity from the centralized public grid when power supply is available. During power failures, the system draws power from the solar grid. If solar power is inadequate or exhausted, it shifts to diesel generators as a third-level back-up. The company predicts annual savings of 30 to 40 percent in diesel costs, not to mention reducing the carbon footprint.

The firm is a joint venture between Astonfield Renewables in India, and Solesa Solar of Italy. Astonfield was founded in 2005, and has installed 20 MW of centralized grid-connected power projects to date, with another 17 MW under construction and 270 MW in the pipeline across Oman, Mauritius, Egypt, Kenya, Uganda, and Tanzania. Solesa Solar was set up in Italy in 2007 and has managed 150 MW of centralized and decentralized solar power projects across Italy, India, the Middle East, and East Africa. Astonfield has expertise in business development, designing business models to suit regulatory infrastructure, and project financing. Solesa brings expertise in solar engineering and project management, especially in decentralized power grids.

Astonfield Solesa launched operations in India in 2013. Its first

installation was for a Tamil Nadu-based manufacturing SME. In 2014, the firm launched a subsidiary company in Kenya and its first African installation in Nairobi will start power production in early 2015.

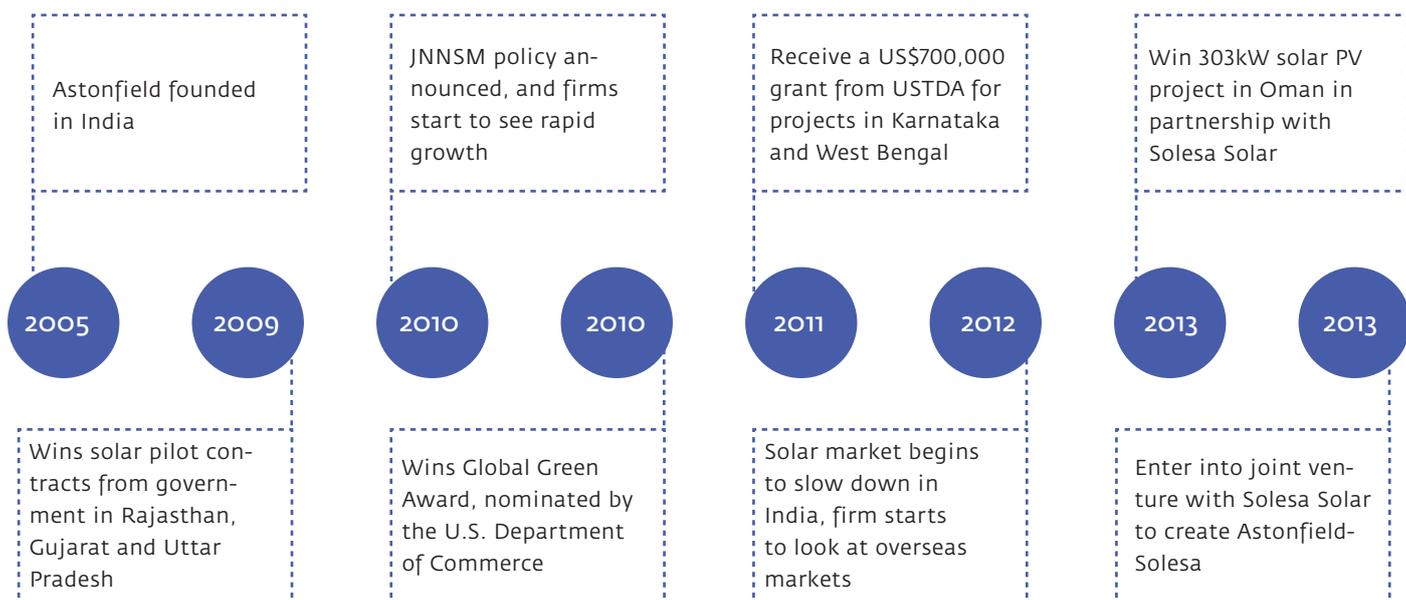
ASTONFIELD'S BUSINESS MODEL IN INDIA

Astonfield Solesa's journey began with the founding of Astonfield Renewables in India by Ameet Shah and Sourabh Sen. It entered the Indian market just as the solar power sector was gathering momentum; its operations grew rapidly with the launch of the Jawaharlal Nehru National Solar Mission (JNNSM) in early 2010, which introduced facilitative policies and attractive power tariffs for independent power producers (iPP) in the solar sector (Figure 35). Shah, an Indian-origin U.S. and Kenya dual citizen, led operations and strategy, while Sen focused on government relations and macro-level oversight.

Slowdown of solar market in India encouraged firm to look at new and growing overseas markets

From 2012 onwards, Astonfield slowed down its investment in India due to an unfavorable macro-level climate, which made it increasingly difficult for the firm to operate as an iPP. The regulatory environment had turned volatile and the Indian rupee was depreciating with downward trends in the global economy. The power tariff for government projects

FIGURE 35
ASTONFIELD'S BUSINESS GROWTH IN INDIA





Credit: Astonfield Solesa

fell from ~ \$0.20 per kWh in 2010 to ~ \$0.10 to \$0.12 per kWh in 2013⁵⁴ and continued on a downward trend, impacting operating margins. The firm acted early to meet this challenge and began to explore other avenues of growth. Shah's past experience in Kenya and the firm's first international success in Oman and Mauritius in competitively-bid projects in 2013 encouraged it to explore other international markets such as the Middle East and East Africa where its expertise in cost-efficient solar mini-grid projects could be transferred to more friendly business environments.

Pivoting the Astonfield model and entering into a joint venture partnership with Solesa

Astonfield's biggest strengths are business development, adapting project models to different regulatory environments, and project financing. It decided to focus on these core competencies and outsource engineering, procurement, and construction to partner companies. Further, reliance on public utility companies as primary buyers had increased business risks. Astonfield, therefore, decided to shift its focus to the private sector. Research on the private sector in India and East Africa revealed an untapped opportunity in catering to the SME segment.

The firm also felt the need to work with partners for global expansion. In 2013, it entered into a joint venture with Solesa Solar, an Italian firm that it had worked with in the past. The two companies created a new entity that combines the unique strengths of both institutions and gives them the flexibility to focus on the niche SME segment in developing countries while the parent entities - Astonfield and Solesa - continue to focus on the larger centralized grid market. Astonfield took a majority stake in the company and Shah decided to focus full time on leading the new entity, incorporating it as a holding company in Mauritius for easy expansion into other countries.

Developing the Astonfield Solesa business model to focus on the SME segment

Astonfield Solesa saw that SMEs in India and East Africa are looking for alternatives to the public grid that could work seamlessly whenever the grid fails. Most SMEs own or share diesel-powered generators and spend substantial amounts on

⁵⁴. Astonfield Renewables.

fuel. Not to forget the inconvenience of shifting back and forth from grid to generator each time there is an outage. Astonfield Solesa helps address this need through small-scale decentralized solar grids of 100 kW to 10 MW capacity, coupled with a hybrid power controller (HPC) that intelligently switches between power sources. The firm provides after-sales services by identifying and training client personnel for day-to-day power system management and setting up local service centers for technical support. As it scales, the firm plans to partner with equipment vendors to start service centers.

EXPANDING ASTONFIELD-SOLESA TO AFRICA

As East Africa was a new market, Astonfield-Solesa invested resources in preparing to enter it. The team worked for nearly a year-and-a-half to evaluate market opportunities and build a pipeline of potential customers. In retrospect, the firm found this critical as it was selling a capital-intensive solution to a very specific type of client with industrial-scale demand for power back-up.



Credit: Astonfield Solesa

Management Bandwidth

Appointing a business lead with strong relationships in the East Africa market and building a lean team with strategic responsibilities

Astonfield's co-chairman Ameet Shah took a lead role in the expansion efforts. Shah had grown up in Kenya and worked in East Africa for several years before moving to the U.S. and then to India. He had built relationships and networks in the region, which he activated to support hiring and marketing for Astonfield Solesa. Additionally, a lean team of five junior to mid-level resources were appointed, partly drawn from Astonfield India's second-line leadership and partly hired in

"As we started to study the East Africa market in detail I realized that it was possible to see much faster growth in this region than in India. I don't think it is riskier to do business in East Africa than it is in India. If you look at macro-economic indicators carefully you realize that the market risk is the same. The actual threat to success comes from not understanding how to do business in a particular context - but that is true for any country."

Ameet Shah
CO-CHAIRMAN,
ASTONFIELD SOLESA

Kenya. Astonfield also created a strong network of partners that could contribute management bandwidth. These included the Solesa Group, which contributes manpower for engineering, project management, and construction, and channel partners in Uganda and Tanzania who support in-country customer acquisition.

Format And Country Selection

Choosing Kenya as base of operations based on a careful mapping of business dependencies

Astonfield Solesa undertook an in-depth study to understand the Africa market. The study validated the business potential in the SME sector and established that the regulatory environment was conducive. It also found that SMEs were sparse in individual East African countries. Hence, the team took a regional approach and covered several countries. It based its headquarters in Kenya and worked in Uganda and Tanzania through a regional office in Nairobi.

The team leveraged Astonfield's holding company structure in Mauritius to set up a new legal entity for the joint venture in Kenya. The firm registered as a private limited company in Kenya, just as it had in India, and hired local tax advisors for support with compliance-related issues.

Capitalizing on a joint venture with Solesa Group and strategic alliances with several in-country partners to build market share

Astonfield saw greater merit in transferring to East Africa in partnership with well-established local firms instead of on its own steam. It entered into a joint venture with the Solesa Group to access the latter's technical resources and expertise and share the financial risks of operating in a new market. Its past experience of working with Solesa and internal decision

to outsource technical elements played a key role in this decision.

It also entered into strategic alliances with channel partners in Uganda and Tanzania for customer acquisition. Shah spent time meeting potential partners and evaluating them based on their entrepreneurial drive, industry network, and cultural alignment with Astonfield Solesa. He realized the need for flexibility in working with different types of partners. For

"We did not get into Africa thinking that we will do the same thing there that we do in India. We wanted to discover what was possible and that mindset helped us identify several opportunities that we might have missed had we taken a lift-and-shift approach."

Ameet Shah
CO-CHAIRMAN,
ASTONFIELD SOLESA

instance, in Tanzania the current set of channel partners includes a family-run business as well as a German multi-national corporation with several country offices in East Africa.

Financial Readiness

Building reserves to shift from a margins business to a volumes business

The Astonfield Solesa team knew that installations in Africa would be smaller in capacity than in India. While this presented a challenge, it also presented a unique opportunity for the firm to conceptualize and raise financing for cost-effective decentralized mini-grids. To focus on its core expertise, it needed a local partner that could assist in business development, engineering, project management, and construction of projects. The Solesa Group fit the bill perfectly, and together the two firms developed a business model that enabled them to deliver cost-effective mini-grid solutions to the new market; solutions that were designed originally for the hyper-competitive Indian market.



Credit: Astonfield Solesa

The firm also realized that at four to five times higher per kWh costs for design, construction, and maintenance, smaller-scale projects in Africa would not provide high-margin sales. It therefore made a conscious decision to shift to a volumes business in Africa, a departure from its margins business in India. The shift meant decreasing project-level profit margins. Increased import and transportation costs were countered by placing bulk orders for solar PV panel machinery and equipment. To make this proposition viable, it also decided to prioritize acquisition of a significant number of clients in the first two or three years. To support this shift, the firm built

capital reserves from its India profits to help tide over low/no-profit years in Africa.

Operational Readiness

Researching the East Africa market for solar micro-grid systems

Astonfield Solesa conducted an in-depth study to assess three key business dependencies: (i) regulatory environment for decentralized solar mini-grids, (ii) market

FIGURE 36
TRANSFERRING ASTONFIELD FROM INDIA TO AFRICA

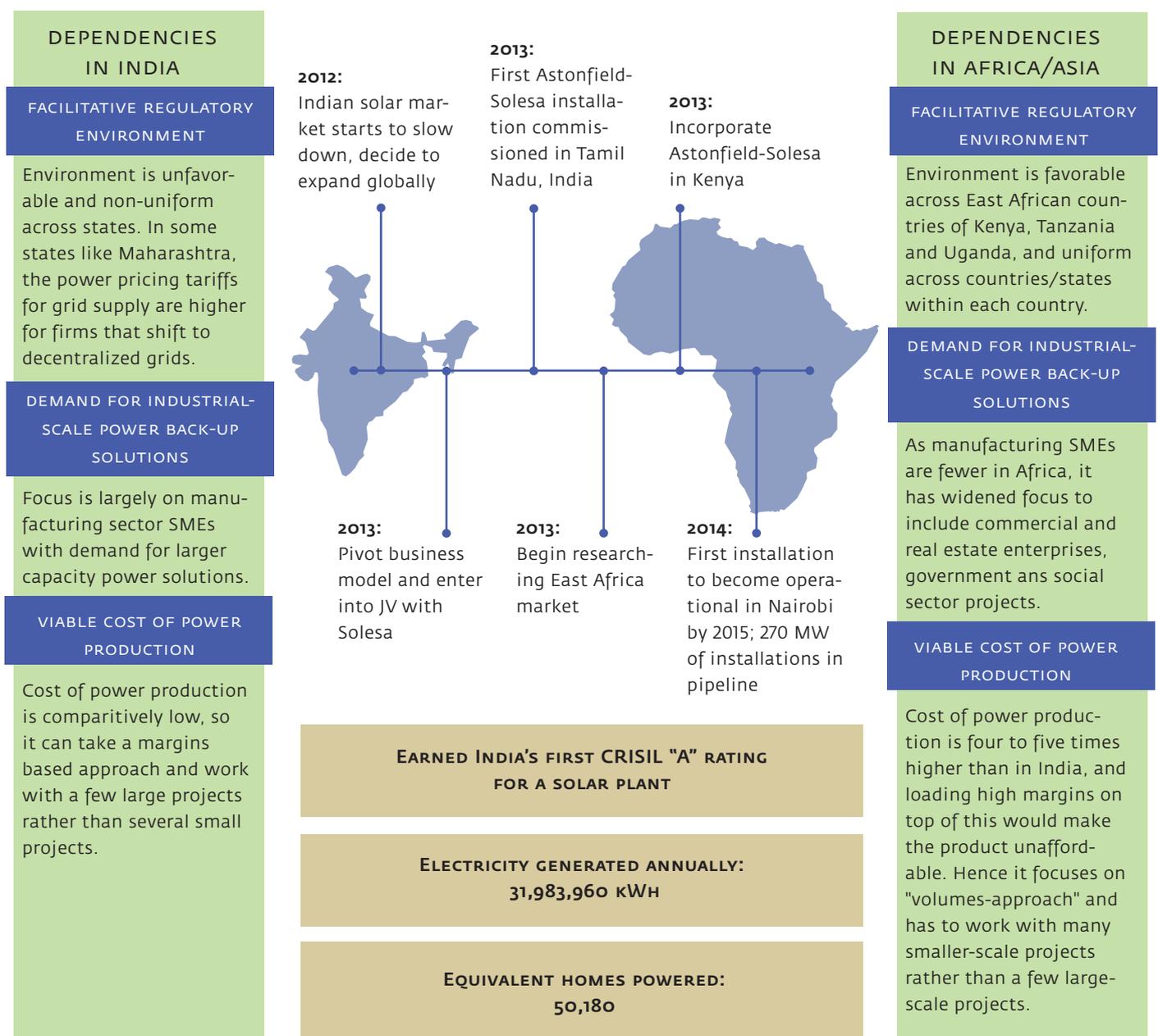
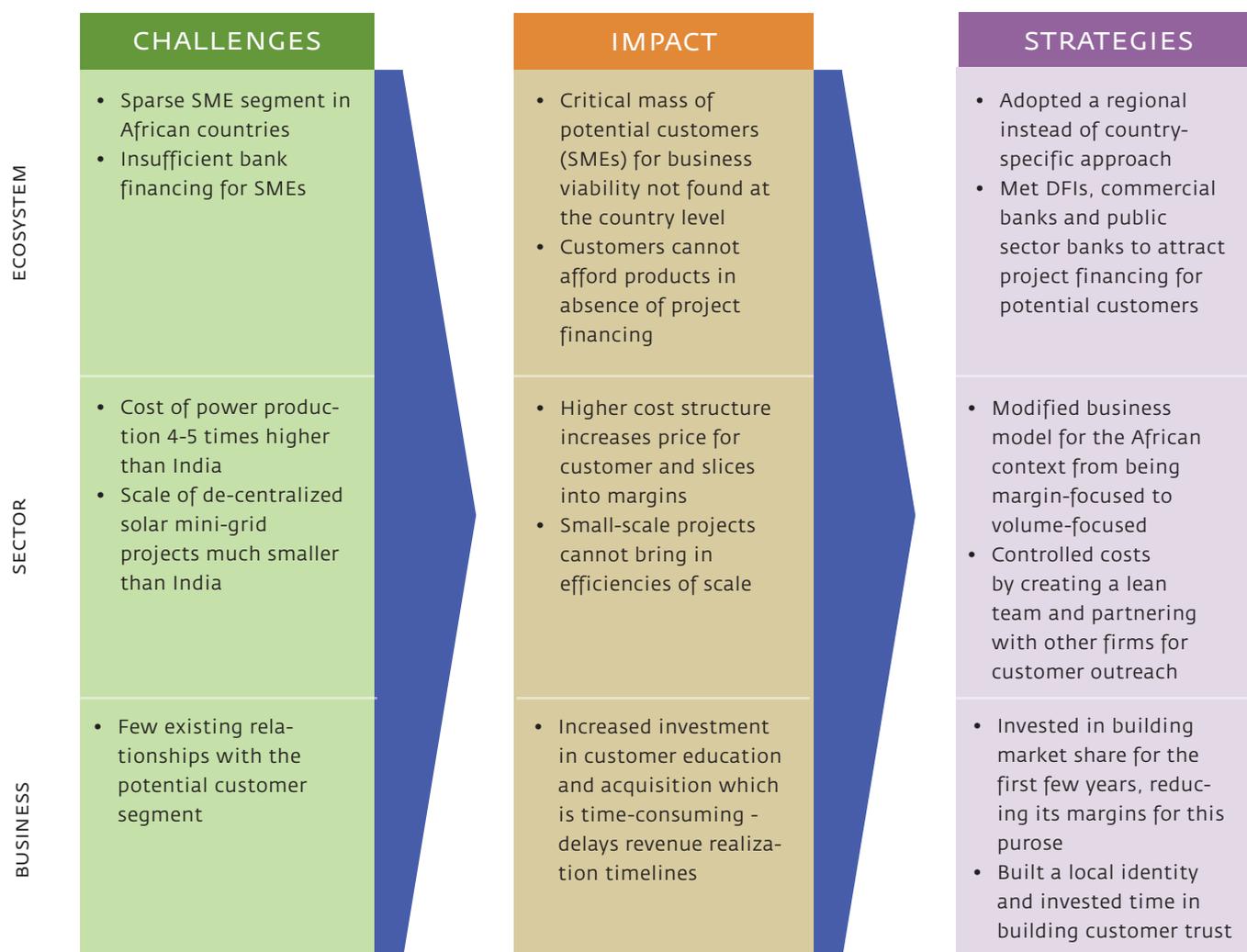


FIGURE 37
KEY CHALLENGES THAT ASTONFIELD FACED IN TRANSFER
AND STRATEGIES USED TO ADDRESS THEM



characteristics of the SME segment in these regions, and (iii) cost-benefit analysis of Astonfield-Solesa’s solution when compared to existing alternatives like diesel generators.

Further, the new Africa team, led by Shah and supported by legal, financial, and administrative resources in India, met over 60 potential clients, understood their needs and challenges, and educated them on the benefits of shifting to solar-hybrid power systems. Insights from these conversations were fed back into product development, customization, and marketing strategies. Shah leveraged his prior experience and existing relationships in Kenya to forge new connections with banks, SMEs, and government bodies.

Diversifying to newer customer segments

Astonfield Solesa’s target customer group in India is primarily SMEs in the manufacturing sector. Since East Africa has fewer manufacturing SMEs, the firm expanded its target to include agribusiness SMEs such as cold chains and warehouses, commercial and residential real estate developments, and socially impactful projects.

Early wins in the region include a small-scale installation for an SME in Greater Nairobi that is scheduled to be commissioned in early 2015. The firm is in the early stages of designing a mini-grid project for the Kenyan Government for



Credit: Astonfield Solesa

a refugee settlement in Kakuma in north-western Kenya. It is also bringing new solar-based products to help Kenya's 17,000 schools become energy independent. This will promote adult learning by providing electricity at night.

Taking a regional approach to expansion

Inclusive businesses can avoid potentially catastrophic mistakes by selecting markets for expansion based on business dependencies. For this, they can analyze markets using public data, consulting other business practitioners, and country visits.

Astonfield Solesa carried out market research based on its business dependencies. It found that East African countries had the most supportive regulatory environments for their business. Further, they realized that they would need to take a regional approach to find viable business volumes, and yet keep expenditure low.

Investing time and effort in educating SME financiers about Astonfield Solesa products

Shah and his team met with several government bodies and financial institutions to build awareness about Astonfield Solesa's systems and find out their willingness to fund SMEs to install them. These included renewable energy authorities across East Africa, NIC Bank, Bank of Africa, Imperial Bank, Victoria Bank, and several development finance institutions (DFIs) such as AfD, EIB, and DEG.

Adapting the business model for the East Africa market context

Small and medium inclusive businesses, especially those that are still early stage, are more likely to have multiple value propositions catering to different client segments. Refining and pivoting the business model to become "expansion-ready" is critical. Astonfield invested time identifying its

core strengths and value propositions and specific customer segments that presented opportunities with lesser risks and higher returns. This identified market opportunities in shifting from large-scale centralized projects to small-scale and decentralized private-sector projects. It also emphasized the need for partners with technical strengths to cater to such projects, resulting in the joint venture with Solesa Group.

Controlling costs by creating a lean team for expansion and relying on partner resources

Inclusive businesses are unlikely to have senior leadership bandwidth readily available to deploy for expansion. Firms need to take different approaches to develop this bandwidth based on internal contexts. These include identifying specific leaders for expansion, decreasing operational workload of senior management, and developing a strong second line of leadership. At Astonfield, the firm's co-chairman helmed the Africa expansion and roped in second-line leaders to support him. The firm adopted a lean approach, hiring only business development personnel in Africa, relying on a shared pool of legal, financial, and administrative resources in India for back-office work. It decided to rely on channel partners for outreach beyond Kenya, decreasing the need to hire talent at each new location.

Investing in building market share for the first two to three years

Inclusive businesses with products or services that have longer sales cycles require high capital expenditure, significant customer education, and market creation. In Africa, businesses will need to invest two to three years in pre-revenue or pre-profit operations to build market share. One way to address this challenge is to build adequate capital reserves to finance up-front investments and working capital needs. Early-stage inclusive businesses can find this difficult. Other strategies they



Credit: Astonfield Solesa

"Don't plan for revenue or profit contribution from Africa operations for the first 2-3 years. Of course, if you do well and see money come in that is an advantage but you should not be tying your survival to making money right away. Build a working capital base and give yourself a 2-3 year runway so you build the business in a systematic instead of opportunistic way."

Ameet Shah
CO-CHAIRMAN,
ASTONFIELD SOLESA

can adopt are to ensure robust India operations to support Africa expansion, find like-minded partners to share financial risks, and run lean expansion operations.

Astonfield identified early on that it would need to shift from its margins-based approach to a volumes-based approach in Africa. It would need to invest heavily in capturing market share in its initial years, without necessarily showing high profitability during this period. To support this strategy, the company built capital reserves from Indian operations and decreased operational expenses by creating a lean team and working in partnership with local firms. Its joint venture with Solesa Solar mitigated the financial risks of entering a new market.

Building a local identity and investing time in building customer trust

Inclusive businesses, particularly those with B2B models that frequently interface with customers, will benefit from building local identities, hiring senior local talent, and aligning branding and messaging to suit new markets. Astonfield Solesa benefited from having a Kenyan as its co-founder, who understood the market and was seen as a "local" by target customers. The firm built customer trust by investing time and effort to educate SMEs on decentralized solar mini-grids and guiding them through project financing challenges.

FUTURE PLANS

Astonfield's first installation in Kenya will be commissioned in early 2015, about a year-and-a-half after the firm started operations in East Africa. It expects to grow rapidly over the next two or three years. It has nearly 270 MW of projects in pipeline across Africa and the Middle East, and expects that these regions will constitute nearly 50 percent of its project portfolio by 2017. The firm continues to build its India operations in parallel.

CASE STUDY 10
GREENLIGHT PLANET

Transfer format: Trade partnerships and wholly-owned subsidiaries
Countries of operation: Offices in India, China, U.S., Kenya and Uganda; distributes across 35+ countries

Greenlight Planet designs, manufactures and distributes affordable solar lamps targeted at low income off-grid households. It has a manufacturing plant in China, and offices in India, Kenya and Uganda that focus on distribution. Its products are distributed to 35+ countries around the world

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: Greenlight sought to grow its revenue base and create a global footprint.</p> <p>Preparation: It studied the East Africa market through in-person country visits.</p> <p>Format preference: It preferred to set up fully owned subsidiaries with complete control over R&D and manufacturing, but was open to partnering with others for outreach and distribution.</p> <p>Country preference: It selected Kenya since it wanted a regional headquarters and saw Kenya as a gateway to Eastern and Southern Africa.</p>	<p>Management readiness: Greenlight allocated a senior leader, who was experienced in overseeing the African trade partnerships, to focus on global expansion full-time.</p> <p>Financial readiness: It had a growing revenue stream from trade in Africa which it reinvested in setting up an African entity. It also raised venture capital funding once on-ground traction in Africa was evident.</p> <p>Operational readiness: It ensured product manufacturing capacities through its Chinese subsidiary, documented all standard operating processes and readied curriculum for training employees.</p> <p>Validating need for product in Africa: Employed a phased approach to validate need and expand simultaneously, from trade partnerships to establishing its own distribution channels.</p>	<p>Sizable target consumer segment: Reliance on an off-grid and low income consumer segment with purchasing power to buy Greenlight's products.</p> <p>Distribution Support: Existing distribution channels for consumer acquisition, financing, and post sales servicing as creating a direct sales agent channel is time-consuming.</p> <p>Import Reliance: Nascent manufacturing sector in Africa necessitates reliance on imports from China.</p> <p>Regulations: Facilitative policies in solar and off-grid energy market such as low import duties on solar, no subsidies for alternatives to solar lighting such as kerosene.</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: High costs of last mile distribution constrains product uptake
Sector: Limited awareness of alternative lighting products among consumers
Business: Lack of deep market intelligence at the country level; limited finances to dedicate to Africa expansion

KEY TRANSFER INSIGHTS

- Greenlight validated demand for its products in Africa periodically before committing financial and human resources
- It took a lean approach to expansion by keeping overheads very low in Africa and hiring only business development staff until it had built enough knowledge and insights around the local market to determine how to invest in a longer-term organizational structure
- It forged successful partnerships with distributors and retailers for reaching last mile rural households, and in the process, learnt about the opportunities and challenges in the off-grid solar lighting market through these partners
- It invested in hiring and training local talent for long term sustainability

Greenlight Planet manufactures and distributes affordable solar lamps for low-income off-grid households. The firm was set up in 2009 and, since its launch, has scaled up to nine offices and 700 employees in four countries. It has sold more than 3 million solar lamps in 35+ countries.

HEADQUARTERS: Mumbai

YEAR OF FOUNDING: 2009

PROMOTERS: Patrick Walsh, Anish Thakkar and Mayank Sekhsaria

LEGAL STRUCTURE: Private Limited

BUSINESS MODEL: Business-to-business (B2B) and Business-to-consumer (B2C)

SECTOR AND SUB-SECTOR: Renewable energy, solar

Sunset brings all economic and social activity to a near standstill in over 75 million households in India⁵⁵. Cut off from the grid, and too poor to afford diesel-powered generators, kerosene lamps are used for housework, studying, and running micro-businesses. These households represent a cumulative market of \$2.2 billion in energy expenditure (for lighting),⁵⁶ but are difficult to serve due to the twin challenges of access and affordability.

Greenlight Planet was set up by Patrick Walsh, Anish Thakkar, and Mayank Sekhsaria in 2009 to address this market opportunity and serve a social need. Walsh designed a high-quality, affordable off-grid solar lamp, while Thakkar and Sekhsaria focused on commercializing it. Their range of affordable solar lamps, branded Sun King™, is now sold across India through a network of 6000 direct sales agents (called Sun King Business Associates) and in over 35 countries through a network of over 150 distribution partners for last-mile outreach.

In 2010, Greenlight expanded its business to Africa through trade partnerships. With over 589 million people in the continent lacking access to electricity⁵⁷ and a \$1 billion/year market for paraffin lamps,⁵⁸ Africa represents an attractive market for the firm. By 2011, sales from Africa represented half of Green-



Credit: Greenlight Planet

light's overall business and were significant enough to warrant the launch of a subsidiary firm in Kenya (established in 2012). The firm also launched a second Africa office in Uganda in August 2014.

GREENLIGHT PLANET'S BUSINESS MODEL IN INDIA

Greenlight Planet's business model in India hinges on distribution and sale of affordable solar lamps targeted at low-income off-grid households. It is primarily business-to-consumer (B2C) driven. Its key strengths are high quality and affordability, and an effective last-mile distribution system.

High quality and affordable products

Greenlight's solar lamps have daily run-times of 24 to 36 hours and use batteries with five-year lifespans. They are competitively priced (ranging from \$11 to \$38) when compared to kerosene lamps, which are the most common substitutes in rural off-grid markets. A low-income household spends

55. Lighting Asia: Solar Off-Grid Lighting. 2012. International Finance Corporation.

56. Lighting Asia: Solar Off-Grid Lighting. 2012. International Finance Corporation.

57. Lighting Africa Market Trends Report. 2012. International Finance Corporation.

58. Media Kit. 2014. Greenlight Planet.

\$120 to \$600 to purchase kerosene for lighting needs over a five-year period. In contrast, Sun King solar lamps represent only 6 to 9 percent of the cost of kerosene used over the same duration. Sun King lights are higher quality and more durable than competing unbranded solar lamps. For instance, while the battery technology used in Sun King lights is designed to last five years, cheaper solar lamps often use lead acid and lithium-ion batteries, which last only two to three years. Sun King lights are designed specifically for rural use, unlike many unbranded solar lamps, and have features like water-sealed electrical ports and plastic enclosures that enhance durability in rural environments.

To deliver high quality, yet affordable products, Greenlight manufactures its products in China, where it has a wholly-owned subsidiary to oversee design, research and development, and bulk manufacturing. The firm’s decision to manufacture Sun King lights in China was driven by two key criteria: firstly, production in China turned out to be more cost effective than in India, even after taking into account transportation and import duties. Secondly, manufacturing in China allowed Greenlight to source raw materials and organize its supply chain more efficiently.

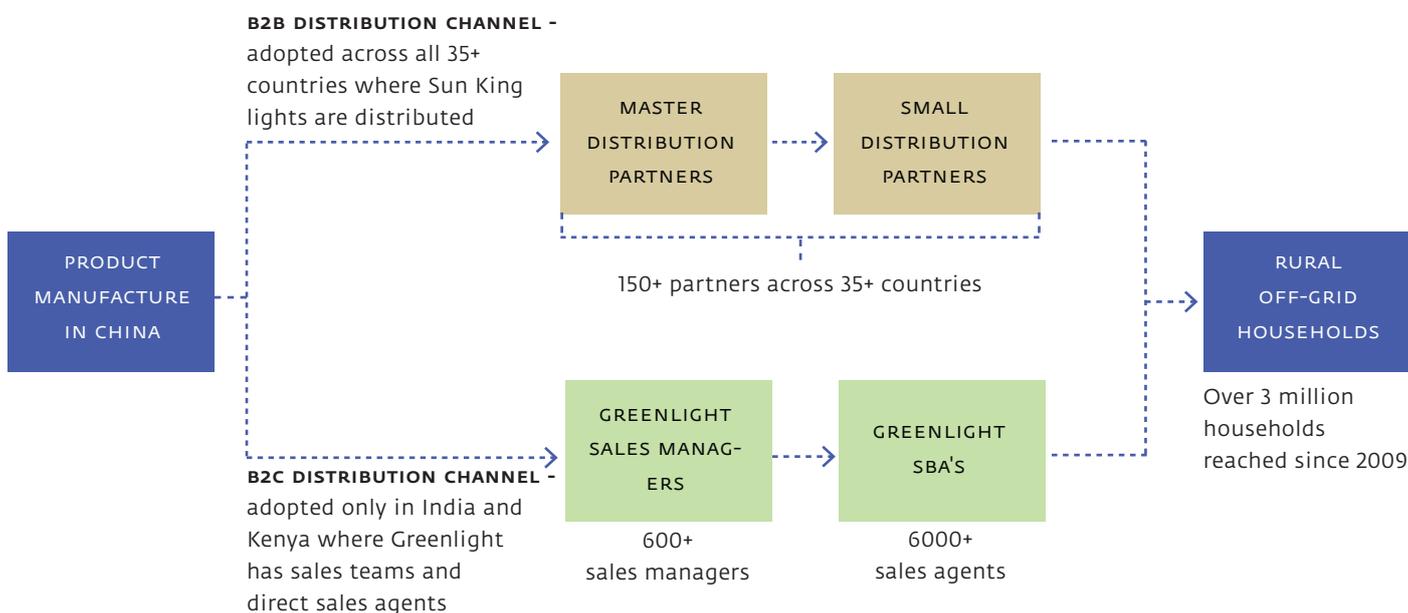
Effective last-mile distribution and post-sales servicing

Last-mile delivery of products and services is challenging for most inclusive businesses. Serving underserved populations re-

sults in higher logistical and post-sales servicing costs. Further, many businesses need to create access to consumer financing to facilitate sales. Greenlight tackled this challenge by taking a multi-pronged approach to distribution, which includes working with distribution partners as well as developing its own distribution channel (Figure 38).

The firm’s distribution partners include a variety of organizations such as microfinance institutions (MFIs), multinational corporations, traditional FMCG⁵⁹ distributors, and last-mile-focused social enterprises. Partners are selected for their reach, network, and track record of working with rural off-grid populations. Greenlight supports each distribution partner with training on product marketing and outreach. In addition to partnering with other organizations for distribution, Greenlight also developed its own network of direct sales agents. Instead of hiring a large full-time sales force, the firm took a lean approach and created its proprietary ‘Direct to Village’ distribution channel where it recruits Sun King Business Associates (SBAs) who distribute Sun King lights in their local communities and earn commissions on sales. SBAs typically have existing primary sources of income, for instance most are farmers, teachers, and small business owners. The direct sales agent model creates income in communities that Greenlight operates in, with each agent increasing typical earnings by 30 to 50 percent from selling Sun King lights. Greenlight aims to increase its network of 6000 agents substantially in the next few years.

FIGURE 38
GREENLIGHT PLANET'S OPERATIONAL MODEL



Distribution partners and SBAs support after-sales servicing by acting as intermediaries that accept service requests from customers and pass them on to Greenlight. In most cases such requests involve repairs or product replacement under warranty. Products are picked up by these intermediaries, conveyed to the nearest Greenlight sales hub, and repaired products are duly conveyed back to customers. Greenlight's higher upfront investment in product quality and durability in rural conditions pays off by decreasing the need for product repairs and replacements, thus controlling costs of after-sales servicing.

Greenlight addresses financing challenges by keeping its products simple and affordable. For instance, the Sun King Eco is the most affordable in the product range and costs approximately \$11. The firm also works with last-mile-focused financial institutions like Fullerton India for product distribution and financing for higher-end Sun King products.

EXPANDING GREENLIGHT PLANET TO AFRICA

Greenlight Planet's founding team had a clear vision to build a global organization. Africa, with 50 percent of its population off the grid and a \$1 billion/year market for paraffin lamps⁶⁰, was a natural choice for expansion.

Management Bandwidth

Identifying leadership for the Africa expansion and building a team in Kenya

In 2012, Greenlight Planet relocated its Vice-President, Global Business Development, Radhika Thakkar to Nairobi to set up a business development office. Thakkar had initially managed Greenlight's Africa business from the India office and had championed early expansion into Africa to gain a comparative first-mover advantage. Subsequently, she spent a significant amount of time on the ground in Africa, working with distribution partners across Sub-Saharan Africa to study their approach and understand the end consumer. These early lessons guided Greenlight in its Africa strategy and planning. The company set up a private limited subsidiary in Kenya, which focused on distribution through partners such as One Acre Fund, Total, and SunnyMoney. In 2012, Greenlight hired and trained five local business development executives; as a result of the team's efforts, it expanded product distribution to 17 African countries.

"We studied the African market in detail to pick the right country to start an office. We ended up picking Kenya because it is truly a gateway to East and South Africa...all major decisions are made here and most large MNCs have offices here,"

Radhika Thakkar
VP-GLOBAL EXPANSION,
GREENLIGHT PLANET

Financial Readiness

Channeling further capital and resources into Africa

In 2012, the firm raised \$4 million in equity funding from Bamboo Finance and Greenlight's first angel investor, Prabha Sinha, for further expansion into Africa and India. Since then, as operations in Africa grew, the business development office has expanded into a full-scale corporate office with staff for other functions such as human resource management, finance and accounting, and administration. The Nairobi office has also taken on the additional responsibility of managing further global expansion. It is currently rolling out the first African direct sales agent network in Kenya. Greenlight also set up an office in Uganda in August 2014. Today, sales revenues from Africa continue to contribute nearly half the firm's global annual revenues.

Format and Country Selection

Adopting a phased approach to expansion, from trade partnerships to on-ground presence in Africa

By 2010, Greenlight successfully generated high demand for its products from distributors and retailers in Africa, particularly from east African countries such as Kenya, Rwanda, and Uganda. Initially, it served this demand through a trade partnership model, but it scaled up Africa trade significantly to earn nearly half its annual revenues from the region. Encouraged by this early success, Greenlight saw the benefit of locating closer to the market and opened a Nairobi office in mid-2012.

⁵⁹. Fast-moving consumer goods.

⁶⁰. Media Kit. 2014. Greenlight Planet.

Choosing a regional hub for operational efficiency

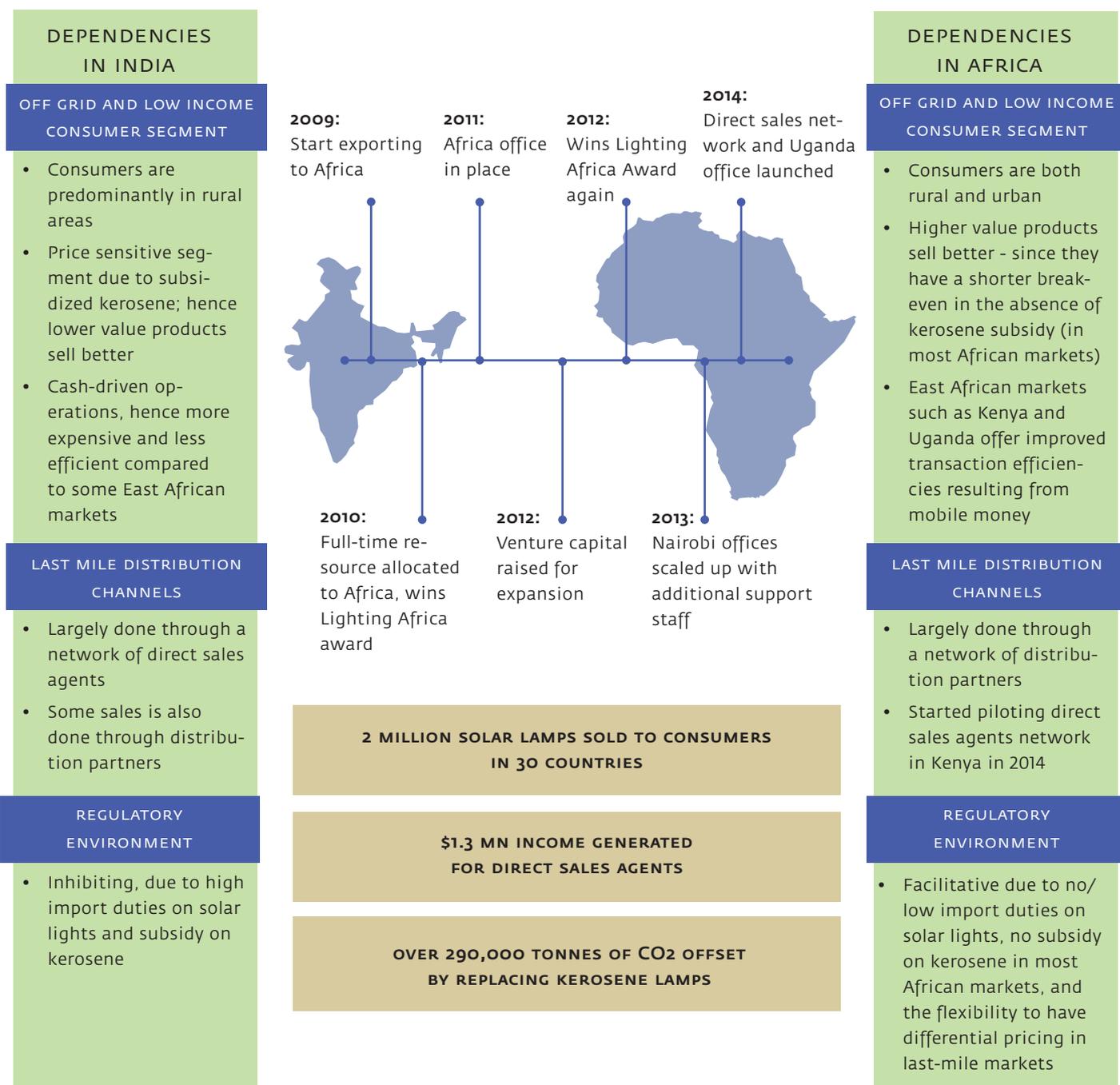
The firm decided to take a regional instead of country-specific business view when deciding on the location for its Africa base. From its research and conversations with distribution partners, Greenlight concluded that Nairobi was a major African hub and a gateway to markets in east, central and south Africa. As the Nairobi office was rolled out, Greenlight found its decision validated by easier access to talent and operational efficiencies created by frequent and well-connected flights from Nairobi to India and the rest of Africa.

Operational Readiness

Shifting from a price-sensitive to a product-sensitive consumer segment

Since most African markets do not have kerosene subsidies, consumers do not have lower price expectations for solar lights as in India. Further, given how expensive kerosene is, a household's break-even period when investing in a Sun King light is much shorter than that in India. This leads to a preference for advanced and more expensive Sun King models.

FIGURE 39
TRANSFERRING GREENLIGHT PLANET FROM INDIA TO AFRICA





Credit: Greenlight Planet

"In many ways, East Africa is a more attractive market for solar off-grid products than India. The regulatory environment is more friendly, and we don't compete with subsidized kerosene"

Anish Thakkar
CEO,
GREENLIGHT PLANET

Understanding this trend early on benefited Greenlight, which adapted its product manufacturing capacity in China and marketing strategy to attract a product-sensitive consumer segment in Africa that demanded a best-in-class solutions from Greenlight's product range. A related benefit that the firm saw specifically in east African markets, which have high penetration of mobile money, such as Kenya and Uganda, was that customers made purchases without needing to carry large amounts of cash in person. This creates a better testing ground for Greenlight's 'Direct to Village' sales model through SBAs since it decreases the need for expensive and inefficient cash transactions.

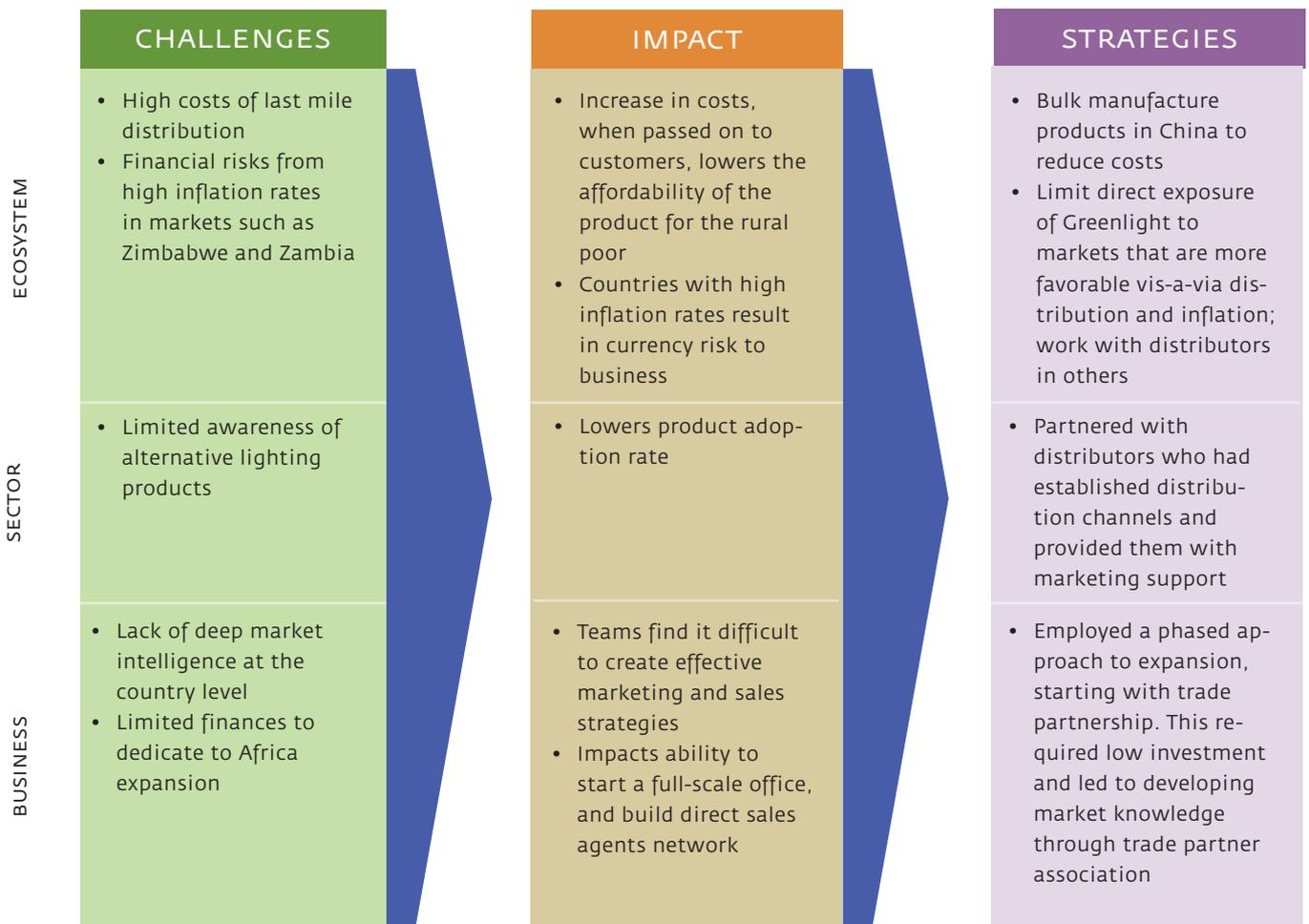
Adapting distribution strategies to a comparatively unknown market

One of Greenlight's key strengths in India is its 'Direct to Village' sales model through SBAs, who enable last-mile outreach to remote rural areas. As the firm readied to expand into Africa, it realized that building a network of direct sales agents in a new geography may not be initially feasible. Instead, it focused on building strategic relationships with distributors and retailers across the continent. The distribution partners helped to grow Greenlight's Africa revenue-base and helped the firm learn specific nuances of operating in different African countries. While the firm recently began to pilot the SBA model in Kenya after nearly three years of operating in Africa, it still sees these distributors as strategic long-term partners and continues to invest in growing the distribution partner network.

Forging successful partnerships with distributors and retailers to overcome ecosystem and sector-level challenges

Inclusive businesses, particularly product companies, will benefit by building strategic partnerships with distributors and retailers to reach to low-income communities. Building own outreach channels takes time and considerable investments

FIGURE 40
CHALLENGES FACED BY GREENLIGHT IN TRANSFER AND STRATEGIES
ADOPTED TO ADDRESS THEM



and needs innate local market knowledge to be successful. Greenlight relied on its distribution partners for customer outreach to more than 20 countries and to understand regional and country-specific nuances of doing business in Africa. At the same time, the firm supplied dependable high-quality products to partners and helped them serve their customers better. By specifically partnering with companies and organizations with a strong impact orientation, such as Total and One Acre Fund, Greenlight aligned with partners and built long-term relationships. Even as it seeks to evolve its own direct sales network in parts of Africa, it continues to work closely with distribution and retail partners for the majority of the continent.

Validating demand at each stage before committing financial and human resources

Early-stage inclusive businesses are less likely to have deep pockets while expanding to Africa, and as a result, have lower capacity to absorb losses from expansion. In such a situation, it may be better to take a phased approach to expansion, starting with lower-risk formats like trade partnerships and strategic alliances, and using these to understand the market ahead of investing in full-scale expansion. Greenlight Planet also took a phased approach to expanding into Africa, beginning with market exploration through trade partnerships, to setting up a sales office catering to distributors, and finally building its own distribution channels. Each step of this journey entailed

greater commitment of financial and human resources, and hence a greater degree of risk. However, by phasing and pacing its growth and establishing periodic proof of concept, the firm considerably reduced its risk.

Lean approach to expansion

Inclusive businesses will benefit from taking a lean approach to expansion and keeping overheads low in the first few years, until operations in Africa become profitable. Greenlight initially chose to invest only in areas that gave it immediate returns, such as trade partnerships with distributors and creating a team focused only on business development. Greenlight reinvested returns earned by these investments to expand the team to include support personnel and build a direct sales network. Thus, the African expansion did not add to the cost burden. On the contrary, it was a significant contributor right from inception.

Investing in hiring and training local talent

Inclusive businesses must also build talent strategies around hiring and training local talent for long-term sustainability. Greenlight Planet did just that. With the exception of Thakkar, who relocated from India, the entire Africa team was hired locally. New employees go through a short induction program and team members assigned to business development roles are exposed to the market in India for training. During induction,

"As long as a product is addressing the consumer's developing needs, helping usher them into modern living, we will consider using our distribution platform to deliver it to the last mile."

Anish Thakkar
CEO,
GREENLIGHT PLANET

team members are introduced to Greenlight's operations and philosophy and exposed to field operations. Some senior team members frequently travel (quarterly) between the two offices. Although this does create a strain on management bandwidth, the firm sees significant benefits in the offices being closer in terms of collaboration and closer cultural ties.

FUTURE PLANS

Greenlight Planet will continue its global expansion, not only in Africa but also in parts of south and south-east Asia, and Latin America. The firm envisions selling 20 million Sun King™ lights in the next two years, and creating an additional source of income for over 25,000 direct sales agents. The firm is also keen to continue designing innovative products in the energy space and other life-enhancing sectors. The Africa offices in Kenya and Uganda will continue to play a key role in these plans.



Credit: Greenlight Planet

CASE STUDY 11
SKG SANGHA

Transfer format: Strategic Alliances in each country of operation
Countries of operation: India, U.K., Kenya, Egypt, and Mali

SKG Sangha is a non-profit organization that designs, constructs and maintains household level biogas digester plants in rural areas to provide clean fuel for cooking. It has offices in India, Egypt, Kenya and Mali, and has installed biogas plants across eight countries.

SNAPSHOT OF EXPANSION DRIVERS



INTENT



CAPACITY



DEPENDENCIES

OBJECTIVES AND PREFERENCES FOR TRANSFER	BUILDING READINESS FOR TRANSFER	ORGANIZATIONAL DEPENDENCIES THAT LED TO TRANSFER CHOICES
<p>Imperative: SKG Sangha aimed to maximize social impact by expanding provision of clean cooking fuels to rural households in countries outside India.</p> <p>Preparation: It raised funds from private organizations and governments in Europe and Africa to initiate operations in Africa.</p> <p>Format preference: It entered into strategic alliances with local governments and organizations that could bring in on-ground expertise and help establish operations in different African geographies.</p> <p>Country preference: Its country selection for expansion was driven by the choices of funding partners.</p>	<p>Management readiness: SKG Sangha identified experienced Indian supervisors within the team to support implementation of overseas projects.</p> <p>Financial readiness: It created management bandwidth to focus on raising capital for African expansion. It also forged a relationship with a philanthropic organization to raise funds for expansion. It ensured regular source of revenue through carbon finance for the Indian operations.</p> <p>Operational readiness: It documented standard operating processes and designed training manuals to train field staff that were hired for construction and maintenance of biogas plants.</p> <p>Validating need for product in Africa: It carried out extensive market research and identified the need for biogas plants as an alternative to wood fuels in rural Africa.</p>	<p>Skilled field staff: Skilled local masons for constructing biogas plants. Reliance on locally employed technicians for monitoring and maintaining biogas plants.</p> <p>Import Reliance: Supply and quality of raw materials for construction.</p> <p>Biomass Reliance: Availability of animal waste as feed-in material for biogas generation.</p> <p>Channel Partners: Presence of local NGOs for conducting field surveys, mobilizing community and increasing product awareness; reliance on donors for funding.</p> <p>Multi-lingual staff: Language proficiency in staff (English and native speakers) to assist English-speaking supervisors transfer operations to local communities.</p>

KEY CHALLENGES IN TRANSFER

Ecosystem: Ability to pay among rural African households is very low; high construction and labor costs in Africa

Sector: Lack of skilled field staff; limited availability of raw material

Business: Limited access to external capital; limited access to feed-in biomass in rural Africa

KEY TRANSFER INSIGHTS

- SKG Sangha diversified its funding strategies to include sustainable sources of funding for the Indian operations. Thus, it could create management bandwidth for raising capital specifically for its African expansion
- It employed a mix of Indian staff and a local team in Africa to serve as an effective mechanism for operational knowledge transfer and for accelerating expansion
- It developed its technical prowess to address the need for long-term after-sales service, which most biogas companies struggle to address. As a result, it developed a strong value proposition in international markets

SKG Sangha is a non-profit organization that designs, constructs, and maintains household and community-level biogas digester plants in rural areas to provide clean fuel for cooking and vermicompost fertilizer. SKG Sangha has offices in India, Egypt, Kenya, and Mali; and has installed biogas plants across eight countries.

HEADQUARTERS: Kolar, Karnataka

YEAR OF FOUNDING: 1993

FOUNDER: D. Vidya Sagar

LEGAL STRUCTURE: Non Profit society

BUSINESS MODEL: Business-to-consumer (B2C)

SECTOR AND SUB-SECTOR: Renewable energy, biomass

The market for biogas plants in India is estimated at 12 million households⁶¹, yet only 4.25 million household-level plants were installed as of 2011. SKG Sangha (SKGS), an NGO set up in 1993 by D. Vidya Sagar, seeks to bridge this gap by building and supplying biogas digester plants. SKGS generates 60 percent of its funding from carbon finance, while the remaining is sourced from donors, individuals, corporate social responsibility funds, and foundations. As of 2014, SKGS has expanded to four other Indian states, Andhra Pradesh, Tamil Nadu, Kerala, and West Bengal.

Even as SKGS was expanding its India footprint, Church Missionary Society (CMS), Africa, approached it for a biogas project in Kenya. During discussions, the team at SKGS realized that 80 percent of the population in Africa used solid fuels for cooking. Further research indicated that the market potential for biogas plants was high in Africa, estimated at 18.5 million households.⁶² Around the same time, UNDP invited SKGS to bid for a biogas plant project in Egypt. Encouraged by these developments, SKGS expanded to Africa in 2009, and is now present in six African countries: Kenya, Egypt, Ghana, Uganda, Madagascar, and Mali.

Since its inception, SKGS has installed more than 135,000 plants and 250,000 fuel-efficient wood fuel stoves with a customer base of 1 million. It has projected an outreach rate of 40,000 families each year. SKGS's activities create significant positive impact on the environment; savings each year amount to 1.95 million liters of kerosene, 284,550 tons of firewood, and 800,000 tons of carbon dioxide.

SKG SANGHA'S BUSINESS MODEL IN INDIA

SKGS's operational expenditure is funded primarily by carbon finance. Grant funding and a portion of carbon finance fund plant installations. When entering a new geography, SKGS employs local NGOs as partners to conduct baseline studies to test availability of raw materials, understand cultural preferences, build product awareness, and assess customization needs. SKGS constructs biogas digester plants for fuel generation based on insights from the studies. It also provides vermicompost units that generate fertilizer from the residue of the digester plants.

61. Cracks & Gaps: Our Biogas Story. January 2013. SELCO Foundation.

62. Domestic Biogas in Africa – A First Assessment of the Potential and Need. 2007. Biogas for Better Life.



Credit: SKG Sangha

Adapting the community participation approach for sustainability

Poor maintenance and lack of community ownership result in high failure rates of biogas plants in India.⁶³ To address these challenges, SKGS ensures community engagement in design and construction of its plants. SKGS makes it mandatory for selected households to provide sweat equity through in-kind contributions (construction materials, construction support, and food for masons and supervisors) of 20 to 30 percent of the plant's construction value.

Enhancing livelihood through on-the-job training

SKGS's project costing includes salaries of project volunteers, who are trained and employed to oversee maintenance and repairs of the biogas plants over a ten-year period. Women manage the vermicompost units that come along with the biogas unit and sell the fertilizer to farmers to earn approximately \$240 a year. This represents a 50 to 100 percent increase in household incomes. The fertilizer results in up to 30 percent increased yields of crops like coffee, ginger, and flowers.

Financing scale through carbon credits

From 2008, SKGS started financing its projects primarily (up to 60 percent) from sale of carbon credits⁶⁴ leading to a 275 percent increase in the number of units installed per year.

"We believe that customers' equity contribution and participation enhance their ownership and in better maintenance of plants. This is reflected in our post implementation success rates at 95%, when compared to other similar projects that have an average success rate of 42% after 5 years of installation."

D. Vidya Sagar
PRESIDENT,
SKG SANGHA

SKGS also developed in-house capacity for carbon credit documentation, significantly reducing the cost (by about 75 percent) it incurred hiring external consultants for job. Further, borrowing from banks to finance projects enables SKGS to begin implementation even before it finds carbon credit buyers.

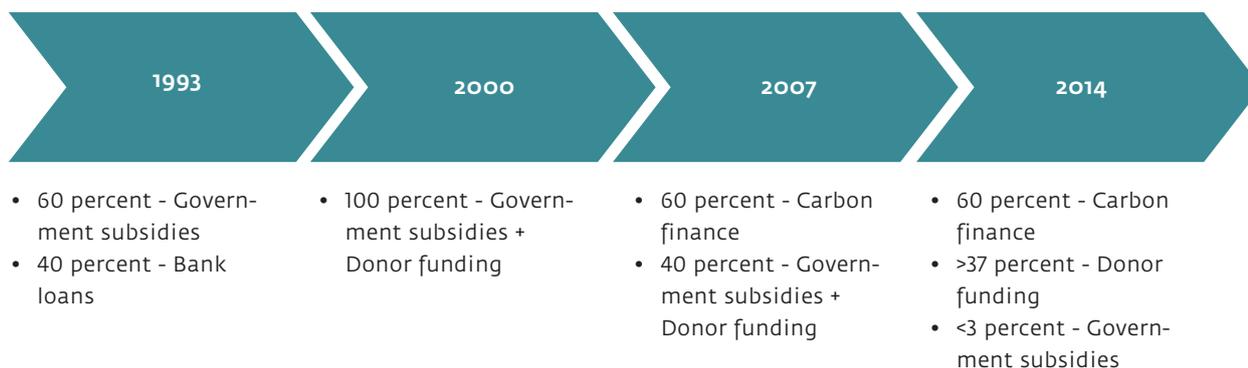
63. A look at India's biogas energy development program – after three decades, is it useful (doing what it should) and should it be continued? 2011. Kaniyamparambi, J.S.

64. The Kyoto Protocol, which came into effect in 2005, set caps on country GHG emissions. Countries set quotas on emissions by local businesses, leading to buying and selling of credits between businesses depending on their quota use. As SKGS's plants lead to reduction in GHG emissions, it sells these credits in the market and finances its projects through revenue generated.

FIGURE 41
SKG SANGHA'S OPERATIONAL MODEL



FIGURE 42
FUNDING SOURCES



EXPANDING SKG SANGHA TO AFRICA

More than 80 percent of Africa’s rural population depends on highly polluting solid fuels such as firewood, dung cakes, and crop residues. Around 75 percent of rural Africa is un-electrified, indicating significant market potential for biogas plants in the region.

SKGS’s Africa operations commenced in 2009 in collaboration with the Church Missionary Society (CMS). It set up an office in Kenya in 2011, and drew support from other donors for its Africa expansion. It established strategic alliances with local governments and NGOs to set up wholly-owned subsidiaries in Egypt (2012) and Mali (2010) with small in-country local teams. As of 2014, it operates in Kenya, Uganda, Mali, Ghana, Madagascar, and Egypt. SKGS is exploring the possibility of expansion to Sudan. This section describes some of the key elements of their expansion.



Credit: SKG Sangha

Management Bandwidth

Relying on senior team members based in India for directing Africa expansion

SKGS’s business model relies on fund raising and project implementation, which is managed by middle and senior management. To control operational expenses, SKGS tasked senior management in India with additional Africa expansion responsibilities. Around the same time, SKGS shifted to less resource-intensive carbon credit financing for its India operations, which freed up senior management bandwidth to focus on raising funds for Africa. While effective, this has created a heavy reliance on a few key team members who have relationships with donors, and is creating constraints to scale. To overcome this, SKGS plans to consolidate existing operations in Africa over the next few years instead of expanding to newer countries. It also plans to build a dedicated senior-level team to focus on Africa.

Overcoming the language barrier through strategic deployment of field personnel

Communication plays a vital role in community-engagement reliant inclusive businesses. In India, SKGS leveraged its home ground advantage in language and abundant semi-skilled labor, which are critical for its operations. When expanding to Africa, it initially identified experienced Indian supervisors and deployed them in Africa to train local field staff. While this was effective in English-speaking regions, language posed a challenge in non-English speaking countries such as Mali. In such regions, SKGS hired a mix of Indian and multi-lingual (English and native language speakers) staff. Indian workers commenced operations and the staff assisted English-speaking supervisors to gradually hand over operations to locals.



All Images Credit: SKG Sangha

Financial Readiness

Raising capital for the Africa projects

SKGS raised capital for its Indian projects from multiple sources such as foundations, donors, and corporate social responsibility funds. However, since 2007, it ensured a regular source of revenue through carbon finance, thus reducing dependence on multiple sources and releasing management bandwidth for other activities. For instance, senior management could now focus on raising capital specifically for SKGS's African operations. The team forged a relationship with a philanthropic organization, CMS, which provided funding for the Africa expansion.

Adapting to higher project costs

SKGS uses materials such as concrete, sand, bricks, valves, rubber hoses and high density polyethylene (HDPE) pipes in the construction of biogas plants. While these are easily available in India, SKGS found it difficult to procure these in some countries in Africa. The team addressed this challenge by exploring locally available alternative building materials. It also leveraged its connections with material manufacturers in India for materials that could not be procured locally and established import channels to project destinations in Africa. However, these imports added to the already high construction and labor costs, leading to a final plant cost of \$495 to \$660, about 1.5 to two times higher than the average cost of constructing a plant in India (\$380). SKGS met this challenge by raising additional capital from large organizations such as UNDP and CMS and by exercising control over budgets.

Format and Country Selection

Identifying an appropriate legal structure for expansion

Legal structures⁶⁵ prevent Indian NGOs such as SKGS from establishing overseas offices. If it was to expand, SKGS would need to consider other legal formats. It explored the business suitability of a for-profit model but it was inefficient to set up for-profit entities in every country it entered. The organization then examined the feasibility of setting up a charity in the United Kingdom through which it could expand to Africa. This was more efficient as it reduced duplication of registration, met donor requirements as they are more inclined to fund non-profits, and gave SKGS the added benefit of reduced taxes by being a UK-registered charity. Hence, SKGS set up a charitable foundation in the United Kingdom in November 2011. Through this foundation, SKGS set up registered offices in Kenya and Mali. It initiated cross-border expansion by building 21 biogas plants in Machakos district in Kenya in partnership with CMS. In Mali, it provided technical advisory support for the construction of 100 biogas plants for rural farm families.

Adopting a wholly-owned subsidiary model and partnering with local organizations

SKGS works with local companies, NGOs, communities, government departments, and other organizations to install biogas digester plants. It experimented with a decentralized model where the local partner shared control over certain aspects such as material procurement, but discontinued the model due to governance and accountability-related challenges arising from remote partner engagement. Instead SKGS opted to set up a wholly-owned subsidiary. The entities in each target country were incorporated as subsidiaries of



All Images Credit: SKG Sangha

the holding entity in the United Kingdom. SKGS continues to engage with partners for market surveys and community interactions,⁶⁶ but retains control over core design, construction, and financing aspects of biogas plants.

Conducting intensive on-the-ground market research for country selection

SKGS's decision to expand into Africa through Kenya was driven by its funding partner's (CMS) choice. When expanding to other countries in Africa, it invests considerable time in preparatory efforts. The team meets with relevant government departments and understands legal requirements to set up businesses. SKGS also spends significant time understanding cultural preferences and contexts. For example, in India, a majority of households do not accept biogas plants that use human excreta to generate gas owing to cultural taboos. However, in Ghana, consumers find human excreta-based biogas plants acceptable. So, SKGS constructed biogas plants coupled to toilets/latrines. These blended systems provide gas for lighting and cooking, and also provide clean toilets that improve health and quality of life.

Operational Readiness

Documenting operational know-how

Poor maintenance of plants by service providers and lack of user know-how are key causes of biogas plant failure. To mitigate this challenge in Africa, SKGS documented standard operating processes (SOPs) based on its extensive experience in India. The SOPs can be customized for different regions, depending on plant size and design, and type of feed-in biomass. As it began project implementation in Africa, this documentation served to assist users in performing day-to-day

operations and ensured they undertook periodic maintenance for the long life of the plants. SKGS also designed training manuals to train field staff and as reference material for them in the future.

Customizing the product to complement availability of biomass

Biogas digester plants need to be fed with biomass at regular intervals for gas generation. At the household level, SKGS defines its plant size and operational process based on the type of animal waste and quantity generated at regular intervals. Different animal wastes have different emission factors,⁶⁷ which require customized processes. SKGS's plants in India typically rely on cow dung as feed-in material, given the abundance of cattle in rural India. However, in Africa, farm households have a mix of cows and donkeys, with donkey dung having a lesser emission factor than cow dung. SKGS, therefore, customizes plant sizes and processes to use both cow and donkey dung as feed-in biomass.

⁶⁵. Indian Societies Registration Act, 1860.

⁶⁶. SKG Sangha's local NGO partners assist in conducting baseline surveys and organizing village community meetings. They also assist in conducting product-awareness programs among local communities to increase plant adoption rates. The awareness programs include radio broadcasts and field visits to enhance understanding of biogas technology and its benefits.

⁶⁷. An emission factor is a representative value for the amount of GHG gases (methane, carbon dioxide, nitrous oxide, etc.) released. Depending on the type of animal waste, it is mixed in a certain proportion with water and fed into the biogas plant. This slurry then breaks down anaerobically to produce biogas.

FIGURE 43
TRANSFERRING SKG SANGHA FROM INDIA TO AFRICA

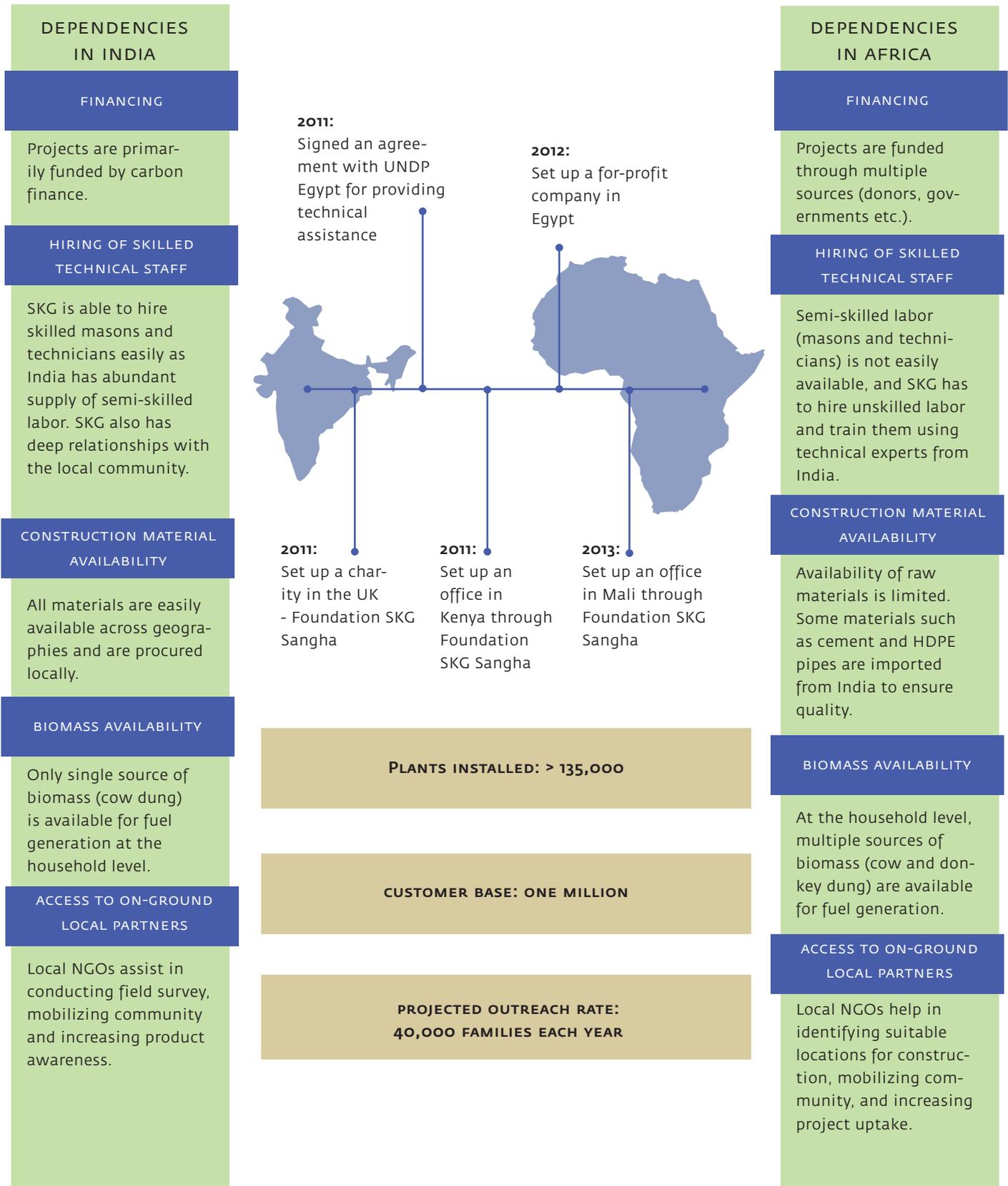
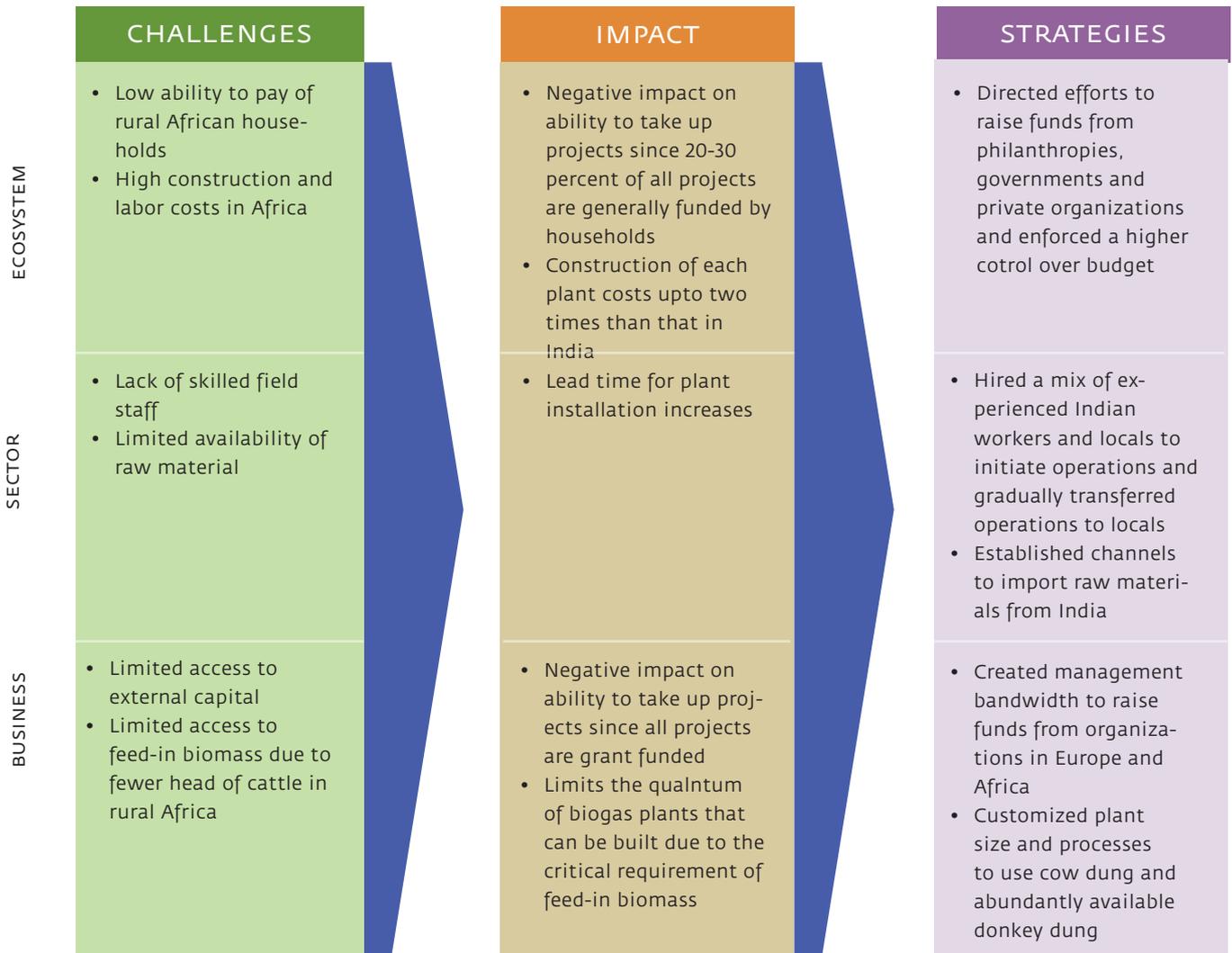


FIGURE 44
 CHALLENGES FACED BY SKGS IN TRANSFER AND STRATEGIES ADOPTED TO ADDRESS THEM



Adopting efficient fund-raising approaches

Senior leadership of non-profit businesses spends a significant amount of its time in fund-raising. Businesses could create management bandwidth for expansion by diversifying funding strategies to include more sustainable sources such as developing business models around their products or services, raising trust funds, or entering into multi-year partnerships with donors.

Adoption of carbon finance in 2007 consolidated SKGS’s funding for its Indian projects. This helped free up management bandwidth and the leadership team could focus on fund-raising for its African projects.

Employing a blended team for project implementation

Inclusive businesses seeking to expand will benefit from employing a mix of experienced Indian personnel and locals



Credit: SKG Sangha

to start operations. This will serve as an effective mechanism for operational knowledge transfer and accelerate commencement and stabilizing of operations. SKGS's adoption of this model ensured efficient quality checks and consistent and well-planned project financing. It also helped resolve local language barriers.

Developing technical prowess for a strong value proposition in international markets

Inclusive businesses will benefit from developing their technical prowess and offer strong value propositions in international markets. They can do this by building strong R&D capabilities and processes and knowledge to succeed in base of the pyramid (BoP) markets globally. SKGS constantly improves its technology and explores different sources of biomass. It also includes regular maintenance services in its budget for ten years, thus addressing a major reason for product failure in the market. These efforts yield positive results, SKGS has a 95 percent success rate after five years of installation, while average success rates in the sector is 42 percent.⁶⁸ These strengths help SKGS attract donor funding, adapt its product to varying local contexts, and operate as a wholly-owned subsidiary.

FUTURE PLANS

SKGS plans to consolidate its operations in Africa. It also plans to conduct research to improve its biogas plant design and understand how best different organic wastes (such as poultry, sericulture, sea weed, spoilt grain, food waste, and organic waste from industries like tobacco, tea, and coffee) can be used as feed-in organic matter for gas generation.⁶⁹ SKGS also plans to expand to the agriculture sector to provide affordable solutions and better practices, particularly in the pre-harvest phase, for poor communities. Other focus areas for SKGS include improved drinking water and higher milk-yielding cattle.

⁶⁸. SKG Sangha.

⁶⁹. SKGS's research concluded that 5 kg of sericulture waste provides as much gas as 100 kg of cow dung does.

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Abbreviations

AIMVCF	Aavishkaar India Micro Venture Capital
AMCS	Automated Milk Collection Systems
ASHA	Accredited Social Health Activists
B2B	Business-to-Business
B2C	Business-to-Consumer
BMGF	Bill and Melinda Gates Foundation
BoP	Base of the Economic Pyramid
CHW	Community Health Worker
CMS	Church Missionary Society
COCO	Connect Online, Connect Offline
DFI	Development Finance Institution
DFID	UKaid's Department for International Development
DG	Digital Green
DIV	Development Innovation Ventures
FMCG	Fast Moving Consumer Goods
GAP	Good Agriculture Practices
GEWP	Global Easy Water Products
HDPE	High Density Polyethylene
HPC	Hybrid Power Controller
IDEI	International Development Enterprises India
IOLs	Intraocular Lenses
iPP	Independent Power Producer
JNNSM	Jawaharlal Nehru National Solar Mission
KB	Krishak Bandhu
LAICO	Lions Aravind Institute of Community Ophthalmology
MDC	Makwanpur District Cooperative
MFI	Microfinance Institution
MoU	Memorandum of Understanding
MT	Metric Tons
NGO	Non-Governmental Organization
NRHM	National Rural Health Mission
NRLM	National Rural Livelihoods Mission
PPBK	Pharmacy and Poisons Board of Kenya
R&D	Research and Development
SADA	Savannah Agriculture Development Authority
SBA	Sun King Business Associate
SKEPL	Shree Kamdhenu Electronics Pvt. Ltd.
SKGS	SKG Sangha
SME	Small and Medium Enterprise
SNF	Solid-Not-Fat
SOP	Standard Operating Procedure
TB	Tuberculosis
TCF	Tulsi Chanrai Foundation
USAID	United States Agency for International Development
WCF	World Cocoa Foundation
WHO	World Health Organization
WI	Winrock International

List of interviewees

ORGANIZATION	PERSON	DESIGNATION
Aravind Eye Care	Dr Aravind S	Director, Projects
Aravind Eye Care	Thulasiraj	Executive Director, LAICO
Aravind Eye Care	Dhivya	Ophthalmic Associate, LAICO
Astonfield Solesa	Ameet Shah	Co-Chairman
Digital Green	Vinay Kumar	Chief Operating Officer
Dimagi	Stella Luk	Country Director, India
Global Easy Water Systems	Mr. Amitabha Sadangi	Head, GEWP
Greenlight Planet	Anish Thakkar	CEO and Co-founder
Greenlight Planet	Radhika Thakkar	Vice President - Global Business Development
Impetus Africa	Manoj Mehta	Head, Impetus Africa(Sole authorized distributor of GEWP instruments)
Manasa Agro Pvt. Ltd	RSN Raju	Founder MD & CEO
Novartis Group Social Business	Anuj Pasrija	Head, Group Social Business
Novartis Group Social Business	Forotan Bahare	Corporate Communications, Group Social Business, Novartis
Novartis Group Social Business	Meghdoot Deherkar	Head of Operations, India Programme
Novartis Group Social Business	Anthony Gitau	Country Head, Kenya programme
Olive Medicare Services	Grace Mwangi	General Manager
Operation ASHA	Sandeep Ahuja	Founder and CEO
Shree Kamdhenu Electronics Pvt. Ltd (SKEPL)	Ujvul Parghi	Founder
SKG Sangha	D. Vidya Sagar	Chairman

World Bank Group

The World Bank Group plays a key role in the global effort to end extreme poverty and boost shared prosperity. It consists of five institutions: the World Bank, including the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA); the International Finance Corporation (IFC); the Multilateral Investment Guarantee Agency (MIGA); and the International Centre for Settlement of Investment Disputes (ICSID). Working together in more than 100 countries, these institutions provide financing, advice, and other solutions that enable countries to address the most urgent challenges of development.

International Finance Corporation

IFC, a member of the World Bank Group, is the largest global development institution focused exclusively on the private sector in developing countries. Established in 1956, IFC is owned by 184 member countries, a group that collectively determines our policies. Our work allows companies and financial institutions in emerging markets to create jobs, generate tax revenues, improve corporate governance and environmental performance, and contribute to their local communities. IFC's vision is that people should have the opportunity to escape poverty and improve their lives.

Intellectap

Intellectap is a pioneer in providing innovative business solutions that help build and scale profitable and sustainable enterprises dedicated to social and environmental change. Our unique positioning at the intersection of social and commercial business sectors allows us to attract and nurture intellectual capital that combines the business training of the commercial world with the passion and commitment of the social world to shape distinctive solutions.

We seek to build institutional capacity and channel investments in the development sector through consulting services, investment banking services, and knowledge and information services. Examples include innovative and focused initiatives such as capital advisory services, intermediating impact investment capital, innovation management, strategy design, market research, stakeholder engagement and policy advocacy.

Founded in 2002, Intellectap has grown into a Group with more than 600 employees and 300 engagements across 23 countries around the world.

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