8

Enterprise Creation Leading to Empowerment

PURA AS AN ENTERPRISE MODEL

Building avenues for quality employment for people in the PURA complex is one of the fundamental pillars of the PURA vision. The most effective path towards this goal is the creation of 'job generators' or entrepreneurs who are sustainable and societally beneficial. For the realization of a global sustainable system, the solution is to focus on empowerment through entrepreneurship.

It must be understood that sustained development can be realized only through empowerment and employment generation. While subsidies and 'freebies' of all kinds—from food and shelter to even television sets—can generate temporary relief and a sense of opulence, real national growth and people empowerment require efforts which are more deeply thought out and with far-reaching consequences. The PURA system strives for a long-term and permanent solution to perennial problems, and one of the best ways to achieve this is by generating enterprises at the local level, both in products and services.

Creating entrepreneurs has a multiplier effect on the economy and employment in the rural complex. For example, the creation of every one micro entrepreneur would typically lead to the opening up of about five wage employments, with around 20–30 per cent returns on a well-planned business. Similarly, a well-planned small enterprise may lead to forty to fifty wage employments of different kinds.

Each PURA, on an average, is a business proposition of about Rs 1 billion with public, private and community partnerships over a project period of about five years. Already, the Central government and certain states like Chhattisgarh, Karnataka and Kerala have taken up PURA as a programme for implementation. The government and a few private initiatives have established working PURAs in Tamil Nadu, Maharashtra, Madhya Pradesh and Andhra Pradesh, which we have studied in the previous chapters. PURA offers an entrepreneurial opportunity which generates social transformation and is financially feasible. Entrepreneurs have to link together all the angles—financing, introducing innovation and technology, establishing brands and marketing, employing the best operational practices and developing local competencies. By achieving this, they will not only establish a social enterprise of excellence and impact but also change the way thousands of people live their lives.

The Ministry of Micro, Small and Medium Enterprises (MSME) has reported 26 million enterprises which employ close to 5.9 million people. This means that, on an average, the MSME enterprises are employing only 2.2 persons per enterprise.[1] This scenario highlights the need for better planning and the creation of an environment which is enterprise-friendly and cooperative. Let us explore how to realize this scenario.

With more than 45 per cent of the total MSME sector concentrated in the countryside,[2] the scope for enterprises is bright and needs to be systematically approached. The Indian hinterland is rightly placed as regards time and opportunity for attracting entrepreneurs from both within and outside the country. The cost of setting up a business is far lower in rural areas—the cost of land compared to a metro city would be in the ratio of 1:200, rail and power lines to the grid, and they have a pool of young workers. Information and communication technology (ICT) in the form of mobiles and the Internet is now reaching them with a concentration of 21 per cent of mobile connections, with the government targeting more than 200 million mobile phones in the rural and interior regions of the nation.

The government and the banks are also supportive with priority lending to certain provincial ventures especially those in the domain of agro-processing and clean energy. Rural India offers a clean, green environment devoid of the regular traffic delays of the cities. Moreover, an immense amount of potential, natural talent, human skills and local competencies lies untapped while the primary urban areas are getting too saturated.

TAPPING HORIZONTAL MARKETS

The enterprise networks of the PURA complex have to look at two kinds of markets when positioning their products or services. Of course, it is essential to tap the high-value export and urban markets that fetch higher prices but, at the same time, it is equally essential to concentrate on satisfying the local demand, which has to be met in terms of services, knowledge or products. Horizontal markets may also exist in close proximity within the PURA complexes where they can share the benefits of each other's competencies.

The right blend would be a mixture of both markets, and sometimes it is possible to use the same fixed assets and position them for different customer groups.

Let us take the case of Arogyadham (place of health) in the Chitrakoot PURA. Arogyadham is a health-care centre based on Ayurveda, yoga and traditional healing sciences. It is a place of lush greenery and beautiful ambience spread over an area of 43 acres situated on the banks of the river Mandakini. It is also a research and production centre for herbal, Ayurvedic and traditional medicines.

TABLE 8.1: Export/urban vis-à-vis horizontal/domestic markets

Export/Urban	Horizontal/Domestic
Higher value per unit	Cost-effective in transporting
Common branding helps tap the market	Sense of ownership and pride in PURA
Help available for building the brand in the outside	

markets Standardized production possible	Societal and human development Customization possible according to local needs Additional enterprises for sales and marketing

As a health centre, it operates an outpatient department (OPD) and a 100-bed inpatient department (IPD). It is a medical tourism spot where patients suffering from chronic diseases come from various parts of the nation and the world to receive well-researched traditional Indian treatment from experts. Using the same infrastructure, Arogyadham provides health care to the local people from about 500 villages, even for chronic diseases. It is able to extend health-care services with its unique first-aid kit of thirty-five herbal medicines called 'Dadima ka Batua' (grandmother's purse), which is given to its village representatives.

Besides this, Arogyadham also runs a cow shelter (go-sadan),* which is a state-of-the-art research and production facility for producing cow's milk and milk products, linking it to traditional health care. It has a garden with over 400 herbs and a research laboratory for the production and processing of Indian herbs. Arogyadham also operates an Ayurvedic research centre called Ayurveda Sadan, which acts as an interface between traditional knowledge and modern research. It consists of five modern laboratories, with the latest scientific equipment for standardizing and validating Ayurvedic herbs and for isolating the 'active ingredient' so that the preparation can be marketed globally as a recognized medicine.

THE LABORATORIES IN AYURVEDA SADAN INCLUDE:

1. Pharmacognosy Laboratory for studying the toxicity of herbal medicine
2. Bio-molecular Laboratory for studying the effect of herbal medicines at the molecular and gene levels
3. Tissue Culture Lab
4. Core Instrumentation Facility

All the research and production carried out in Arogyadham caters to the wide export market, which is seeing an exponential demand growth. Moreover, through its fixed cost and infrastructure sharing, the Chitrakoot PURA is able to provide quality health care through this facility to the horizontal markets across 500 villages as well.

INTEGRATION AND A VERTICALLY BALANCED ENTERPRISE NETWORK

Earlier we had stated that one of the fundamental challenges of rural enterprise is the fact that its output would require significantly more time and would cover a longer distance to reach the urban or the export markets. Thus, it is important for the products and services that come out of rural enterprises for export outside the complex to be as high on the value chain as possible—this processing and value addition would reduce the size of the product and increase its net value.

The rural entrepreneur or producer faces another problem—their scale is usually very low and the process mostly manual and hence more time-consuming and economically inefficient. In contrast, a mechanized unit with a larger investment and focused production would be able to share the fixed cost over a larger production volume and thereby cut down on the cost. Fixed costs such as land, building, equipment and technology could be better utilized. This is called 'economies of scale' and it makes the cost of individual smaller enterprises uncompetitive. Let us take an example.

TABLE 8.2: The effect and the benefits of localized vertical integration

Effect of Localized Vertical Integration	Benefits
Enhanced value at localized enterprise cut cost on movement of goods.	More revenue for the producer, more employment opportunities; localized vertical integration helps network
Reduced size	Transportation cost reduced and wastage minimized.
Longevity increased	Product can be exported over greater distances and access better markets. Also, the bargaining power of the producer is increased.
Waste minimization	Enhances profitability and controls environmental impact.
Inclusive integrated value: chain from raw material to final high-value goods	Economies of scale would occur even in the case of small producers.
Pooling of resources	Better access to credit and ability to absorb entrepreneurial shocks.

Typically, the cost of a product per unit is inversely linked to the volume of production and this is the total production cost (TPC). The marginal production cost (MPC) implies the additional cost of producing each extra unit over the previous state. Let us suppose there are five enterprises, each producing 100 units of a product per day. Each of these units would operate at a level of the TPC corresponding to the production value of 100 units—thus the net cost of production would be 5 × Cost of 100 units. Now, if these enterprises were vertically integrated and shared some fixed infrastructure and costs, it would give them a higher bargaining power in the market and with the suppliers. As a result, they would collectively operate at an even lower level of the TPC. Thus, the cost of 500 units would be less than 5 × Cost of 100 units due to the economies of scale.

This is where our next focus area for the creation of a successful rural enterprise under PURA would be: vertical integration of the production cycle so that value addition can be achieved within the local PURA complex.

TRIPLE BOTTOM-LINE APPROACH TO ENTERPRISE VALUE

Enterprise value generated in a sustainable development system like PURA would not be judged merely on the basis of the profits. Each PURA complex will evaluate its enterprises based on the sum total of three contributions: People (P1), Planet (P2) and Profits (P3).

People (P1) would refer to the direct (P1D) or indirect (P1N) returns achieved on the basis of the social development radar as explained in Chapter 5. The equitable distribution of profits is also an ingredient of this component.

Planet (P2) refers to the impact on the natural resources, tree cover, soil condition, landscape, water and air of the PURA complex area as explained in Chapter 6. This value would be proportional to the positive impact on these components.

Profits (P3) is a mixture of the traditional balance-sheet understanding of monetary income and of how sustainable the income levels are over a period of time.

The principle of vertical integration in the PURA complexes would be based on the lines of maximizing the triple bottom line of People (P1), Planet (P2) and Profits (P3). The equivalent values of P2 and P3 can be evaluated along the lines of Social Capital (C_S) and Environmental Capital (C_E), which will be discussed in later chapters.

Vertical integration would have to consider the impact on all these parameters and also account for the cultural aspects and the stability of the model.

BUILDING AN ENVIRONMENT THROUGH AN ENTERPRISE NETWORK

We have discussed the various elements necessary for starting a successful, enterprise-driven model for a PURA complex at the village level. Now we shall construct a model for an enterprise network which is vertically balanced and integrated, taps into various markets, is technologically flavoured, and has investment and incubation potential. This would be a carefully crafted and customized way of creating enterprises based on local competencies and external and internal markets, in such a way as to maximize the yield and minimize the risks.

The necessary condition is the building of a robust network where every stakeholder would have the incentive and intent to assist in the creation of enterprises, which would lead to income generation and societal transformation. A block diagram for the different components of such an enterprise network is shown in Figure 8.1.

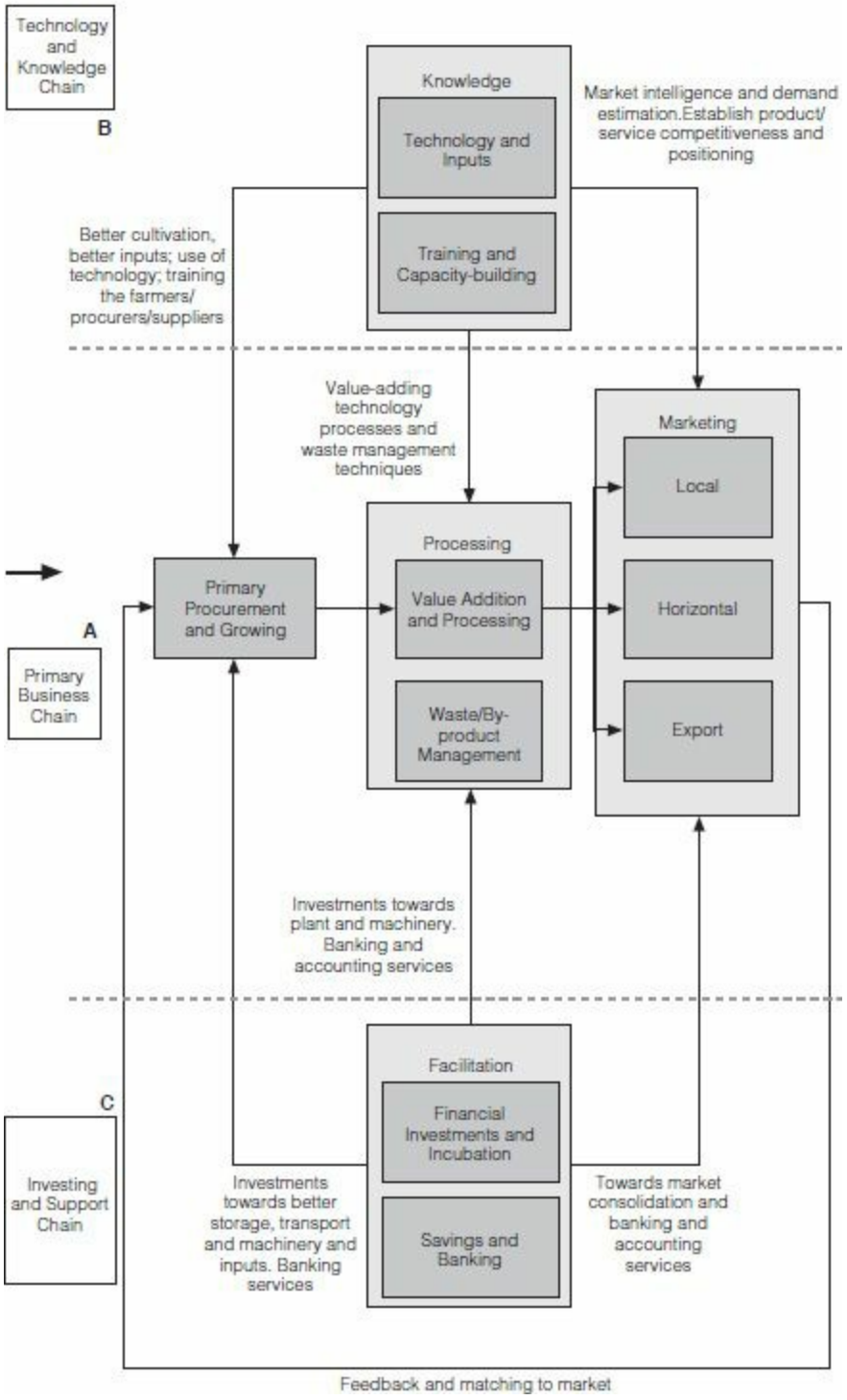

FIGURE 8.1: A PURA enterprise network model

Essentially, an enterprise network is composed of three distinct categories, each of which can be an entrepreneurial avenue or be managed by a dedicated stakeholder:

THE PRIMARY BUSINESS (PROCESSING AND MARKETING) CHAIN

Every competency in the village complex—whether in the form of a natural product or skill—can be nurtured and have value added to it. An entrepreneurial approach should be employed to move up the value chain, adding quality to the product or service, thereby enabling it to obtain bigger income yields. On the procurement side, there can be value-adding enterprises which help get higher returns

and better storage facilities to minimize waste. At the processing stage, the most cost-efficient and quality measures need to be employed to optimize the value. At the same time, the waste, the by-products and other collateral benefits need to be harnessed and converted into socio-economic gains.

Finally, the marketing side, too, can be enterprise-driven—it needs to find the optimal mix of serving the domestic, the export and the horizontal markets in order to enhance incomes and also serve the local population. This would affect the kind of final storage mechanisms required; the advertising that needs to be conducted; and the logistical arrangements that need to be drawn up. Of course, the market also needs to have a mechanism for feedback which can help match the product to the demand.

The entire chain—from procurement to the market—can generate a number of jobs for different skills sets with capacity-building. It may be managed jointly under a cooperative of producers and marketeers, or segmented into different, but balanced parts, each of which can be under smaller entities like NGOs, SHGs and small-scale industries.

THE TECHNOLOGY AND KNOWLEDGE CHAIN

Building on Electronic Connectivity and Knowledge Connectivity, knowledge support systems would help in integration. This can be a part of the PURA Complexes Cooperative or be managed by local experts, local academic institutions, NGOs or corporate bodies as a social responsibility with government support. Typical examples of this would include Village Knowledge Centres (VKCs) of the Indian Space Research Organization (ISRO), e-Choupal of ITC and the Krishi Vigyan Kendras (KVKs) of the Indian Council of Applied Economic Research (ICAER).*

This support system of enterprises would help gather optimal technologies for value addition; evolve methodologies for waste and by-product management; strategize vertical integration; and help gather market intelligence. It would be the technological partner of the processing and marketing value chain. It would help apply technology in procurement and harvesting to improve yields, and reduce the risk of weather changes by the information management system. In order to be successful, it would have to adapt knowledge to local conditions, and evolve models where the end-user of the technology—the rural population—has an active stake.

The knowledge support enterprises may be linked via Electronic Connectivity to the expert centres of technology and management across the world. They would facilitate electronic input and output markets. They could also act as providers of education—conventional as well as vocational education.

THE FACILITATION AND INVESTMENT CHAIN

No enterprise can be realized unless adequate arrangements for providing the necessary credit are made in a time-bound manner. This would require a customized micro credit linkage policy and one-stop integrated financial services. The need for this service itself will create an enterprise network of financing and incubation.

Moreover, as entrepreneurs and employees grow in number, they would need access to better

financial services for their personal and business needs. This would include savings, investments, consultation, financial management and insurance services.

For an equitable and balanced development it is important to cultivate and nurture—especially among the rural youths—entrepreneurship which, at the grass-roots level, has far-reaching benefits and which, if successful, would help local competency develop and thrive. An entrepreneur can potentially generate at least four to five additional jobs, can also serve the local markets and bring amenities to the people in the PURA region and thereby build up their standard of living. Above all, it is the natural way to achieve value addition for the products and services coming out of a rural complex.

We have given many examples of local entrepreneurship and ideas about generating it, and the opportunities for outsiders to be a part of the sustainable development mission of PURA. Building an entrepreneurial culture would make it flourish, but it would require a multi-pronged focus which envisages the creation of the following direct enablers:

- Skill-building opportunities (S)
- Access to inputs and quality equipment (I)
- Process technology with adaptability and upgrading (T)
- Timely access to credit (C)
- Vertical integration management (V)
- Aggregation and access to markets (M)

$$\text{Strength of Entrepreneurial Culture} = S \times I \times T \times C \times V \times M$$

To promote an entrepreneurial culture, all these enablers would have to be activated through a combination of private, public and community initiatives. It is important to understand that all the six enablers are interdependent. Skill-building with access to equipment would not yield any results unless coupled with well-timed access to credit in order to start an enterprise. Similarly, even if an enterprise were created it would be unsustainable unless there was access to market and market intelligence. The creation of an enterprise environment requires a focused approach through the four-fold connectivity of PURA. Let us discuss some examples which highlight the nurturing of such an environment.

EMPOWERMENT OF RURAL EASTERN UTTAR PRADESH THROUGH ENTERPRISE CREATION

In February 2011, we visited the district of Basti in eastern Uttar Pradesh where we met a number of village entrepreneurs who, through their innovative business models, are carrying out economic development of the region and its people. One of them was Jitendra Singh who used to work as a corporate lawyer for reputed firms. He resigned from the post of associate vice-president of a company to come back to his village. The ground water of his ancestral land was locally considered as having health benefits, probably due to its mineral content. He capitalized on this village resource to build an enterprise model. He got international certification for the water of his own tube well as authentic mineral water and then started running his own bottling and filling plant in Marwatia Babu, a remote village in Basti district. At present, he has a testing laboratory, employs three managers and twenty-five skilled workers on a regular basis, and fills 200,000 bottles per month. Marketing, packaging and retailing this natural resource have generated employment and self-respect for many villagers in the area. He markets his product under the brand name of Lumbini, after the birthplace of Gautam Buddha, and has created an identity for Basti.

This example of harnessing local resources and inherent strengths to achieve larger economic benefits needs replication across the nation and the developing world. Of course, while doing so, sustainability in terms of ecology also needs to be factored in.

Udyamita Vidyapeeth at Chitrakoot is a novel step towards the achievement of the self-reliance objective of the Chitrakoot PURA. Deendayal Research Institute (DRI), the initiator of this PURA, realized that the there was a need to create non-farm income-generating activities in the area, which would ease the pressure on farmlands, and prevent them from being divided into smaller and less economical holdings. This led to the birth of the enterprise-creating mission for enabling local youths to emerge as village-based entrepreneurs.

Udyamita Vidyapeeth is described as a production-cum-training centre to emphasize that it is essentially a hands-on industrial training centre with emphasis on building a financially sustainable enterprise system, rather than just a skill-development workshop.

ENTERPRISE TRAINING COURSES AT UDYAMITA VIDYAPEETH

- Radio Electronics
- Fabrication
- Screen and Offset Printing
- Cane and Bamboo Crafts
- Soap-and Detergent-making
- Bakery
- Computer Application
- Fruit and Vegetable Processing
- Oil Expeller Unit
- Readymade Garments
- Processing of Cereals and Pulses Industry (PCPI)
- Garments and Textiles

Sheds have been erected in Udyamita Vidyapeeth—each for a particular area of specialization—where the local youths can come for hands-on industrial training in their field of interest. They are also given a live demonstration of how economic returns can be gained using their skill, and are encouraged to go back to their villages, start their own enterprise and emerge as employment generators.

The contribution of Udyamita Vidyapeeth does not end with mere training. Its organizers realized that unless the youths were backed by credit facility it would be impossible for them to actually start any enterprise which involved advanced processing. While it does help out by arranging for loans from banks, in some cases that is not sufficient as the novice entrepreneur youths are either unable to fulfil the bank's requirements or are not in a position to take the additional burden of payment of interest.

However, Udyamita Vidyapeeth was determined to create as many entrepreneurs as possible, and hence, devised a unique financial tool for addressing the credit needs of these trained youths. With the various funds received by DRI—the principal institute behind the Chitrakoot PURA—it opened a bank account called 'Swavalamban' (self-reliance), to give interest-free micro loans to the talented and reliable but needy entrepreneurs in the rural areas. The process for deciding the loan is very participative, in which even the local villagers and the Samaj Shilpi Dampati* are involved. This is

shown in Figure 8.2.

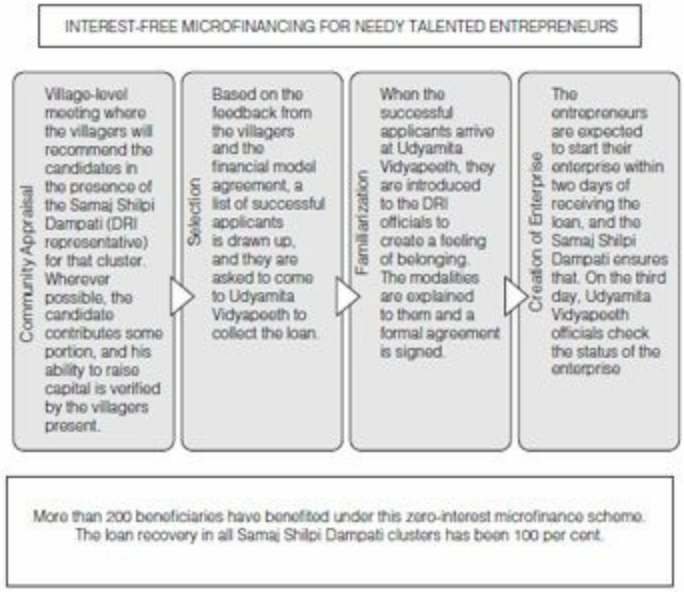

FIGURE 8.2: The microfinance model of Chitrakoot PURA

Udyamita Vidyapeeth also guides farmers by providing market intelligence from the urban areas so that demand–supply matching can be optimally utilized. One of the improvements it has carried out is in the packaging of high-value agricultural products so that they can be supplied to urban demand centres and farmers can get a fair price for their products. Udyamita Vidyapeeth and the Chitrakoot PURA mission are encouraging the farmers to switch to high-value and healthy organic food which can generate better returns.

The Chitrakoot PURA region is rich in forests, which are sources of biodiversity strength and numerous forest products that can generate economic returns for the local tribal population; and, if done in a scientific way, this would also lead to the preservation of the ecosystem. Till recently, the tribal people were largely engaged in the low-income business of selecting and picking fresh herbs to be later processed in factories. In this process, the returns to the tribal people were very low, partly due to a lack of knowledge of the true value of the product, and more significantly because, being ill-equipped to process the forest products, they did not have any bargaining power. Chitrakoot Udyamita Vidyapeeth took up the challenge of taking the profits back to the tribal people by empowering them entrepreneurially. The tribal youths were taught the benefits of the herbal plants and the method of processing them to an intermediate state. Using this knowledge and training, many of them were able to partake in the value addition and could thereby increase their income significantly, which further translated into better living standards. They were in a better bargaining position vis-à-vis the companies, and were able to get a higher price for their effort.

A part of this enterprise creation was done through the SHGs initiated by Udyamita Vidyapeeth in partnership with the KVKs. It undertook the responsibility for training the SHG members, and their initial inputs were often subsidized by DRI to overcome the usual stumbling blocks in starting an enterprise.

In April 2010, we visited the Toyota Engineering and Manufacturing Plant in Georgetown, Kentucky, USA. The plant has two parallel lines operating in two shifts and cumulatively producing 2,000 cars a day. This makes it the largest automobile manufacturing plant in North America and Toyota's second largest manufacturing plant. But even more significant was seeing the management principles of a successful enterprise translated into human and machine action. Toyota has given the world the principle of just-in-time (JIT) production on which their Georgetown plant operates. JIT is an example of how to achieve vertical integration of dissimilar production units—often with different production cycles—towards the common top of the value chain. JIT follows the principle of elimination and minimization of three key points of wastage:

- Time: Minimizing the time taken for converting the raw material into the final product or service. This can be done by using optimal technology and balancing the different segments of processing.
- Scrap: Elimination of wastage in the process caused by poor technology, lack of skill or uncoordinated operations.
- Inventory: Ensuring that there is a minimum amount of work in progress between the first and the last stage.

This management fundamental of modern times is of tremendous significance for the PURA enterprise network, in which the production units are represented by individual micro or small enterprises. Starting with the core competency of the local region, the network operates in unison to create high-value products and services. The realization of a competitive advantage would be complete only when sound management is carried out in an entrepreneurial fashion like Toyota. This visionary management of a process can be a potent tool for converting core competency into income generation and societal benefit. Let us take an example of a rural enterprise.

Let us imagine that there is a rural, vertically integrated, coastal PURA fishing enterprise network linking the raw fish from the sea to some form of processed seafood sold in an urban or export market. A rough idea of the stages involved and the inventories produced with communication as needed in the process is shown in Figure 8.3.

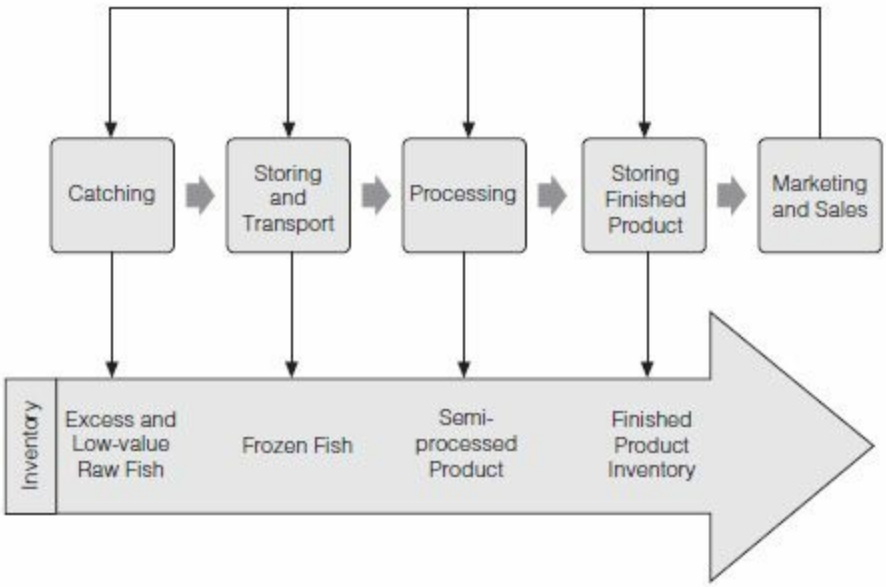

FIGURE 8.3: JIT in a fishing PURA context

Note that this is where the Physical, the Electronic and the Knowledge Connectivity converge towards a common Economic Connectivity goal. Table 8.3 shows the role played by each of them and the effect.

TABLE 8.3: Convergence of Physical, Electronic and Knowledge Connectivity

Connectivity	Effect on Realizing Economic Connectivity
Physical Connectivity (roads and waterways with landing facilities)	Would ensure that the time taken from the raw state to processing to marketing is minimized. Faster transport can be used between the different elements of the chain, minimizing wastage and giving better bargaining power in the market.
Electronic Connectivity (real time and high devices integrated with weather forecast, information on location of fish and connectivity to market)	Can help the fishermen get weather forecasts and information on the best locations for catching fish. Also, the back-and-forth communication of requirements and tunings can move across the chain. This would ensure speedy response and eliminate the need to keep a large inventory.
Knowledge Connectivity (network with various expert agencies and technologies)	Would ensure that the best output, both in terms of quality and quantity, is harnessed with the minimum input. Moreover, it would help towards value addition for better revenues and less scrap.

ENTERPRISE INCUBATION BY AN ACADEMIC INSTITUTION: PERIYAR PURA

The Periyar PURA, initiated by the Periyar Maniammai University (PMU), Vallam, in south India, has a unique and multi-pronged focus on generating entrepreneurs in various disciplines and social groups. The Periyar PURA covers sixty-five villages and benefits a population of about 100,000 people.

The Periyar PURA has followed the one-village one-product model, which means that each village (or a small group of villages) within its purview focuses on achieving excellence of quality and maximization of returns for a particular product or service. This was implemented in 2007 through a strategic partnership with the Japan External Trade Organization (JETRO). The people of the Periyar PURA villages, technologically supported by PMU, worked with experts from JETRO on various products for which core competency and raw material were available in Thanjavur district. The PMU students and experts were instrumental in identifying the core competency and facilitating the training. They developed prototypes for 123 products such as bed sheets, table runners, cushion covers, brass drums, curtains and bread baskets. Interaction with the JETRO specialists included comparison with Japanese products, discussion on selection of raw material, technical advice on product development

and final quality inspection. Based on this intensive interaction, the people of Vallam produced 123 products from which JETRO selected forty for the international market. These finalized products were displayed in exhibitions in New Delhi and Tokyo. The feedback from each exhibition was used for improving the product so as to enhance customer acceptability of the product. The local technical consultancy support for improving the product was provided by PMU. This cooperative venture has boosted the innovative ability of the village people and transformed it into developing and producing internationally acceptable products.

Besides the partnership with JETRO, the Periyar PURA is organized into different blocks of villages, each charged with developing a specific core competency based on the local agro-climate and availability of native skills. Some of these are coconut-based activity, bamboo-related enterprises, herb cultivation, dairy integration and biofuel and alternative energy sources.

The Periyar PURA has initiated or promoted a number of enterprise activities through many of its specialized centres or social organizations. It has the following organizations and initiatives for carrying out its work in the villages:

- Periyar Organization for Women's Emancipation and Renaissance (POWER)
- Periyar Business Processing Outsourcing (PBPO)
- Periyar Technology Business Incubator (TBI)
- A centre for rural development (CRD)
- Periyar Research Organization for Biotechnology and Ecosystem (PROBE)
- Periyar Centre for Environment and Energy Management (PCEM)
- Periyar Renewable Energy Training Institute (PRETI)
- KVIC Regional Extension Centre (biomanure programme)

All these centres work in close synergy and share knowledge to attain the common goal of transforming the villages.

PERIYAR ORGANIZATION FOR WOMEN'S EMANCIPATION AND RENAISSANCE (POWER)

POWER is an NGO for the transfer of technology and assistance in enterprise formation to the beneficiaries of the Periyar PURA villages, especially the women. It identifies the potential aspirants in the locality, offers programmes for entrepreneurship development and follows up by helping them apply for funding schemes to start their venture. It has 8,000 women in its SHGs and more than 1,000 groups. It gives training courses and support in various areas like baking technology, nursery management, hollow brick-making, mat weaving, retailing, vermicomposting, mushroom culture, manufacturing fibreboard, cultivation of ornamental plants and making jute products. The typical chain—from SHG formation and the Enterprise Development Programme (EDP) to the financing and venture start-up—is shown in Figure 8.4.

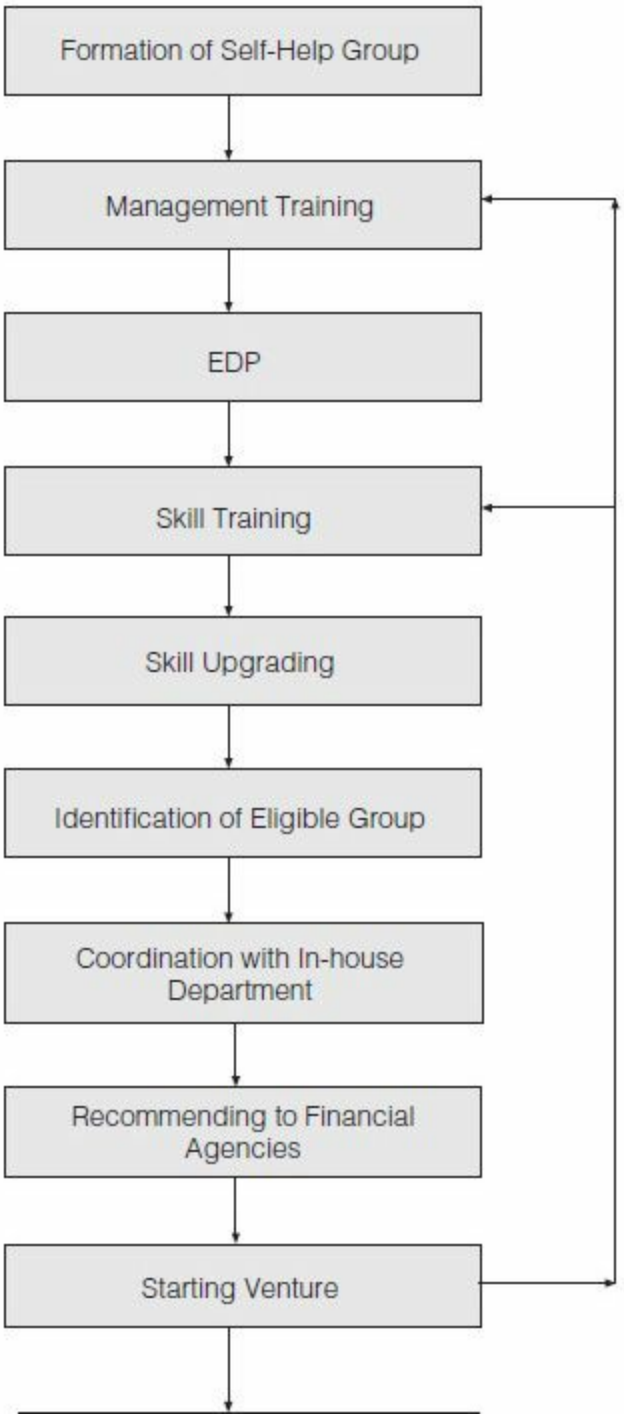

FIGURE 8.4: Stepwise implementation under POWER

Training-cum-production centres (TCPCs) are set up for giving hands-on training to women who have the entrepreneurial spirit and the potential. They are counselled on how to control their enterprises and face challenges, and given an insight into the evolution of successful business models.

SHG members are trained to save, plan and handle their credit. This has reduced their dependence on agricultural activities for income and given them a wider spectrum of jobs and non-farm employment opportunities to pursue. Not only has this helped overcome underemployment and unemployment, but also given women a position of respect in the family. Above all, the SHGs of women created by POWER have been instrumental in giving women a sense of self-recognition and wings to their aspirations.

PERIYAR BUSINESS PROCESSING OUTSOURCING (PBPO)

This centre was established in 2009 by the Periyar Maniammai University, with the objective of training local youths in computer skills and making them employment-worthy for the business process outsourcing (BPO) enterprises that were coming up. The thirty students in the first batch were trained in computer operations using Microsoft Office applications and the Internet. Their typing skills were enhanced with special typing software.

PBPO has started receiving data entry work from the Budalur block for the MGNREGA. Besides, the block development officers of Thiruvonam and Thiruppanandal are also providing data entry work. The work is being done in the PBPO centre and the data are sent online to the concerned blocks. This has led to the creation of a previously unknown knowledge-based industry in the form of BPO in Periyar PURA.

PERIYAR TECHNOLOGY BUSINESS INCUBATOR (PERIYAR TBI)

Periyar TBI is a grant-in-aid project aided by the Department of Science and Technology, Government of India, through the National Science and Technology Entrepreneurship Development Board (NSTEBD). It has the broad objective of promoting knowledge-based and innovation-driven enterprises in the region under the Periyar PURA. Periyar TBI was established in the year 2006 to promote enterprises based on herb processing with small-scale manufacturing facilities for herbal products and tissue culture, and for testing them. It is also involved in activities such as enterprise promotion in phytopharmaceuticals and nutraceuticals.

Periyar TBI is a well-equipped facility with conference rooms, classrooms, space for display and sales, a library and facilities for applying for patents. It conducts workshops in awareness, process improvements and skill development. TBI's Entrepreneurship Development Programme benefits aspiring entrepreneurs who may be students, pharmaceutical industries, farmers, women or small institutions.

Periyar TBI has features like:

- An embedded-system development centre, with certificate courses in embedded systems and commercial design development for engineering students
- A bio-fertilizer/bio-pesticide production centre: training is given on scientific methods of production and market support is provided through the Rural Business Hub
- Food Products Order (FPO) licensed production facilities: products like fruit jams, squashes and tomato ketchups available for sale
- Rural BPO service

IMPACT OF PERIYAR PURA'S ENTREPRENEURSHIP MISSION

The entrepreneurship and employment promotion missions carried out by the Periyar PURA mission have had a significant impact. In the non-farming sector, more than 2,000 skilled jobs have been created in the field of welding, fitting, carpentry, electrical and plumbing services, CAD/CAM and CNC. This has greatly arrested migration to the cities and reduced the unemployment problem among the youths who are now fruitfully employed.

Also, more than 5,000 SHGs have enrolled 30,000 rural women who are engaged in many income-

generating activities and small enterprises. Empowered by the training they have received, and supported by access to credit facility and market linkages, they have become entrepreneurs in areas such as vermicompost production and plant nurseries; tailoring, embroidery and bakery; coir and fibre-reinforced products; hollow brick-making; and carpentry. The impact of the effort in enterprise creation is visible in the Periyar Maniammai University campus itself where most of the services like catering, provision stores, cafeterias, laundry, printing, tailoring and student amenities are run as small enterprises by these trained women's groups.

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BRINGING SUSTAINABLE ENERGY TO BRAZILIAN VILLAGES THROUGH ENTREPRENEURSHIP: FABIO ROSA

If we look around us, our industries, commerce, amenities, heating and cooling systems, entertainment and home lighting, even our water purification systems are dependent on one form of energy—electricity. And yet, even in this era when our most basic amenities depend on electrical power, as of today, nearly 30 per cent of the world's population—mostly living in rural areas—does not have any access to it. Electricity is both a challenge to development and an opportunity to make a difference in villages across the globe. Of course, governments around the world are making this a priority issue, but the question remains: how can this be achieved sustainably through social entrepreneurship at local levels?

One entrepreneur who has accepted this challenge is Fábio Luiz de Oliveira Rosa of Brazil. His career as a social entrepreneur in energy started in the early 1980s, at the age of twenty-two, when he visited a rural municipality in the Palmares area of Rio Grande do Sul, Brazil's southernmost state. He came in contact with the local mayor who was impressed by him and appointed him secretary of agriculture. At that time, the area of Palmares was lagging behind in all dimensions—economy and social statistics. Over 70 per cent of the population did not have access to electricity and the lack of this one amenity had a significant cascading impact on almost all other areas.

This being a region where the primary occupation was rice cultivation, the biggest problem was the lack of availability of water for irrigation. Most of the channels and dams were owned by rich landlords who charged a very high price for the water. In fact, the smaller farmers were paying more than thrice the world average for their water needs, and about a quarter of the net input cost was solely on water.

Rosa believed that it was water alone that could give a major boost to the agricultural income of the farmers, and concluded that the area needed many artesian wells. However, the biggest obstacle to that was the fact that the area generally lacked access to electricity, which was vital for drawing water out of the ground. The lack of electricity also meant that the rural population did not have access to lighting, refrigeration, entertainment, information and computers. Thus, 70 per cent of the population of Palmares—about 9,000 people—had no future to speak of. All the electric companies found it an expensive exercise to extend the grid to the rural areas and, under the current excess capacity installation, the cost of bringing electricity to each household would have been about $7,000, roughly equivalent to five years of its annual income.

That is when innovation came to the rescue. Rosa and his team noticed that the three-phase bulky

lines in use were not needed for rural application. Instead, by replacing them with a mono-phase current system with a single wire and grounding into the earth, the cost of installation could be brought down to $400 per family. This access to electric power opened the floodgates to multiple agricultural and household applications. One of the first was the availability of water for irrigation, with 75 per cent of the farmers investing in water pumps and refrigeration sets. The combined effect of water and better agriculture methods was reflected in the income levels, which jumped from $65 to about $250 per month. One result of the electrification was the return of the local population that had migrated to urban areas for better incomes and amenities. One man with one idea had addressed the real underlying problem and changed an entire rural district.

But Fabio Rosa did not stop there. He understood that rural electrification had to be made as independent of the government as possible. He saw an opportunity in solar photovoltaic cells, which were portable and easy to use, but very costly. He realized that the technology had to be repackaged and delivered in a different form with higher yields. One of the problems of rural Brazil was inadequate fencing that failed to control animal grazing and which, in turn, destroyed crops and lowered yields. Rosa packaged electric fencing and solar energy together and concluded that, by this method, the cost of fencing could be reduced by 85 per cent. Additionally, farmers would gain from the excess electricity available and thus improve their productivity. Rosa further noticed that many of the families were spending up to $25 per month on energy items like candles, kerosene, batteries and diesel. So he repackaged their solar device as a solar home system consisting of a solar battery, panels, lighting fixtures and other electrical items with 12V electricity supply. This system, customized for rural households, was able to provide adequate power for lighting, TV, water pump, radio, refrigerator and water heater against an installation cost of $150 to be paid off in twelve months.

Fabio Rosa and his team demonstrated how closely societal amenities like electricity are interlinked with income-generating activities and productivity. Better amenities reversed the trend of urban migration. Best of all, this was achieved not through subsidies but through the way of entrepreneurship with community participation. What may appear to be economically unfeasible technology—like solar power and mono-phase lines—can be made economically vibrant when coupled with core issues like irrigation, home lighting and fencing. To be successful, technology has to assume the shape of an enterprise, and enterprises have to delve into the depths of societal needs.[3]

GOVERNMENT OF INDIA-SUPPORTED MICRO ENTERPRISE CREATION SCHEMES

Swarnajayanti Gram Swarozgar Yojana (SGSY)

The government, both Central and state, runs many schemes that promote enterprise creation at the rural levels. One of the most prominent of them is the Swarnajayanti Gram Swarozgar Yojana (SGSY) which was launched in April 1999 after the restructuring of the Integrated Rural Development Programme (IRDP) and other programmes. It is basically a self-employment and micro enterprise creation scheme that targets the economic empowerment of the impoverished. The objective is to bring the assisted swarozgaris (self-employed) above the poverty line through the creation of income-generating assets through bank credit and government subsidy. The Central and the state governments implement this scheme on a cost-sharing basis in the ratio of 75:25 (Centre:state). By 2009, there were 3.6 million SHGs with more than 13 million self-employed people with an investment of Rs 308.96 billion.

Such schemes can be dovetailed as part of entrepreneurship promotion to realize the sustainable development model of PURA.

Rural Business Hub (RHB)

The Rural Business Hub, promoted by the Ministry of Panchayati Raj and the Confederation of Indian Industry, is a public–private–panchayat partnership model to address the gaps in the market structure by establishing a direct linkage between rural economy and industry.

The thrust of the RHB is to improve locally available resources and produce goods of international standards. The industry is supposed to assist in terms of technology, good farming practices and inputs; value addition, standardization and quality enhancement measures; branding and marketing; and training and skill development.

This intervention is expected to lead to higher yields and higher returns. The RHB is designed to address a wide spectrum of activities including handicrafts, handlooms, poultry, aquaculture, food processing, biofuels and herbal plantation.

With such value addition and advanced processes, the RHB aims to create a linkage whereby industries can directly source from the rural hubs, which have been standardized and are equipped to produce goods of international standard. In 2010, the Ministry of Panchayati Raj identified thirty-five districts for establishing Rural Business Hubs.

This partnership scheme can be useful for creating economic activity and linking products to markets. Models like the RHB can be a part of designing and implementing sustainable development systems, especially those being created by industries and small-scale industries.