India

Preparatory Survey on BOP business on Japanese industrialized housings in India (BOP Business Promotion Survey) Summary

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1. Overview of the study findings

1.1 Feasible businesses

From the surveys, it was concluded that the provision of prefabricated housing for the LIG (Low Income Group) which was envisioned in this survey would be difficult due to the issues concerning on cost and procurement to pledge sustainable mass production of the industrial housings with affordable quality. On the other hand, it was determined housing development projects with reinforced concrete where 90 percent of the total housing developed consisted of MIG (Middle Income Group)/HIG (High Income Group) housing, with the remaining 10 percent devoted to LIG (Low Income Group)/EWS (Economically Weak Sector) housing, a certain level of profitability could be guaranteed, hence the roadmap for market participation was created on a project-by-project basis. Meanwhile, it is technically possible to provide industrial housing as a high-end product toward HIG (High Income Group), as several industrial housing providers are already grown in the Indian market.

1.2 Reasons for arriving at this conclusion

1.2.1 Constraints in terms of cost

Market of the prefabricated housing is at dawn in India, and several providers for prefabricated building (basically for the industrial purpose) conduct its business sustainably. However, when it comes to provide technology for prefabricated building toward housing sector, they do not have any intent to engage as a risk taker (or, developer) but just to provide their product to the local developer.

In most cases, even for domestically-backed Indian developers, projects to provide LIG housing are seen as unprofitable projects, and given the rising land prices, the barriers to securing profits with LIG housing are extremely formidable. The few domestically-backed Indian developers that have succeeded in generated profits in the area of LIG housing have only managed to ensure that they operate in the black as a result of many cost-cutting efforts, including such steps as taking on contracting work on an in-house basis, thoroughly streamlining interiors, etc.

The initial vision was to provide inexpensive housing by cutting costs through industrialization. However, the daily wages of laborers are extremely low, so the potential benefits of shorter work schedules proved to be smaller than we had initially anticipated. Furthermore, the local costs of raw materials such as steel are high. We would not, therefore, be able to enjoy the kinds of cost benefits we had initially projected. As a result, we decided to consider roadmaps to enter the market on a project-by-project basis in lieu of trying to provide prefabricated LIG housing. To achieve sustainable and feasible business for providing prefabricated house toward LIG/EWS, a methodology to disperse business risks should be developed. One of the leading methodologies would be to strengthen the collaboration with public sector (details are shown in the next subsection)

Meanwhile, there are manufacturers that have grown locally by constructing prefabricated modules for factories and such. A study of technical abilities showed that, in terms of technological capabilities, it is possible to supply prefabricated housing locally. It is for this reason that not even local prefab manufacturers can successfully provide prefab LIG housing from a business perspective, though if steel supply prices drop dramatically in the future due to growth on the part of domestic steel manufacturers in India, and problems concerning on local procurement are solved, the cost competitiveness of the prefabricated housing may exceed that of reinforced concrete housings.

1.2.2 Institutional constraints

For low-income sectors of the population to purchase homes, it is crucial that there are fundamental systems in place that offer home loans, but even for banks it is near impossible to offer home loans to the EWS, particularly to those without regular employment. For this reason, with regard to providing homes to the EWS, we offered suggestions for expanding supply through cooperation with public institutions, including the Indian government.

1.2.3 Other constraints

In addition to the previous constraints, local customs may arise as an important constraint to be solved. As a matter of preference, local people tend to prefer solid buildings as represented by reinforced concrete buildings. On the other hand, industrialized prefabricated buildings are made of panels with thin metal and this appearance may be associated with a negative image of its solidity. This tendency is especially true in LIG/EWS household who do not have any experience to see established technique of prefabricated housing in foreign country, and therefore it is highly important to overcome this preference if we are to provide prefabricated housing toward LIG/EWS households.

1.2.4 Entering the market on a project-by-project basis

If we take into consideration the developments outlined above, we can project that any LIG housing project would entail low profit margins and in terms of business costs versus benefits, there are few projects that would be attractive to potential business operators. On the other hand, for the projects that are commonly being developed in India at present (projects whereby in terms of the total number of houses developers supply 90 percent MIG/HIG housing and 10 percent LIG/EWS housing), because investment by foreign companies is on project-by-project basis, there is a good chance of coming across projects that satisfy investment criteria. Therefore, in exploring realistic ways of entering the market, it is worth considering establishing a local base of operations in India by undertaking the above-mentioned projects, supplying LIG/EWS housing—even at small volumes—and at the same time studying the possibility of expansion as a PEB manufacturer at that base of operations.

2. Background and objectives of the study

2.1 Background of the study

With the aim of making fully functional prefabricated study rooms that could be erected in yards in Japan in the 1960s, Daiwa House Industry developed “midget houses,” which became the starting point of industrialized housing and went on to contribute to improvements to housing conditions during the country’s period of rapid economic growth. Daiwa House Industry has set a goal of reaching 10 trillion yen in sales by its centennial anniversary (in 2055). To achieve this goal, the company is exploring the possibility of returning to business models in which it grows together with countries, specifically by returning to its founding principles and contributing to the betterment of the way people live. In that sense, Daiwa House Industry believes that the choice to engage in businesses targeting BOP markets, where standards of living are close to those of 1960s Japan, and to ensure that the company’s overseas businesses expand in conjunction with the economic growth of developing countries, would be one of great significance.

At the same time, the company believes that in developing countries where much of the population consists of the BOP segment, there is a very high demand for affordable, high-quality housing. Using manufacturing technology in the field of housing that is currently available in Japan, it would be possible not only to supply large volumes of low-cost, high-quality housing, but also to meet the demand of the BOP.

Furthermore, the provision of industrialized housing will encourage the regeneration of local communities and the company believes it would be possible to achieve synergistic effects with projects run by JICA, which has worked to enhance Japan’s presence in the world by helping to improve local living conditions through projects to construct, for example, water supply and sewage systems.

Given the above, Daiwa House Industry believes that the needs of all of the parties concerned—namely the BOP business operator (Daiwa House Industry), the BOP, the host country, and donors—sufficiently coincide. For this reason, the company undertook this study.

2.2 Purpose and content of the study

The main purpose of this study was to examine the feasibility of entering into the business of manufacturing industrialized housing in India using Japanese technology. To that end, we conducted the following surveys.

2.2.1 Literature survey

Consulting various types of literature, we gathered and organized information on the political and economic conditions in India, the relevant laws and regulations in place there, and the local marketability of housing. As a result, in addition to clarifying the regulations, etc. that merit particular attention when attempting to enter the market, we obtained an overall view of the local housing market.

2.2.2 Field surveys

We conducted two types of surveys, namely surveys of the cities that would become the markets for the housing, and surveys of potential factory locations that would become the manufacturing

centers. This was to determine the feasibility of collaborating with entities that would be the direct clients in this BOP business, including the government, developers, and business conglomerates, and to study whether it would actually be possible to operate a business taking into account aspects such as raw materials procurement, manufacturing technology, and distribution.

3. Collection of existing information, surveys of current state, and analyses of current data

3.1 Surveys of the current state of the Indian housing market

3.1.1 Classifications of purchasers of housing

The income pyramid for India is divided into four strata (HIG, MIG, LIG, EWS) according to monthly household income. The auditing firm KPMG India defines the income classifications in the income pyramid as shown below. As the global General Real Estate Company A mentioned in the field survey section below uses these income classifications, we chose to use these income classifications for the strata in the pyramid in this study as well. These income classifications, however, were defined by KPMG in 2010, and it is important to note that the cutoff points are subject to revision as needed to reflect price levels in different cities or other such factors.

Figure 1: Indian income pyramid (as defined by KPMG)

Note: The monthly income classifications are based on KPMG's classification. These preliminary calculations purposes were done using a fixed rate for dollars and yen. Please note that cutoff points for the monthly household income classifications are revised as needed.

Source: Compiled from data in a paper by KPMG titled "Affordable Housing – A key growth driver in the real estate sector?" (2010).

According to the 2011 Indian census, the country has a population of about 1.21 billion and around 250 million households, or an average of around five persons per household. Although circumstances vary depending on actual household sizes, if we use the BOP definition of "individuals earning less than 3,000 dollars per annum," most in the EWS and LIG and some in the MIG are likely to fall within the BOP demographic.

3. 1. 2 Housing shortages

As of 2007, there were 24.7 million too few housing units in India. Of the four strata in the Indian income pyramid, the shortage of LIG and EWS housing units is much more serious than for the other groups.

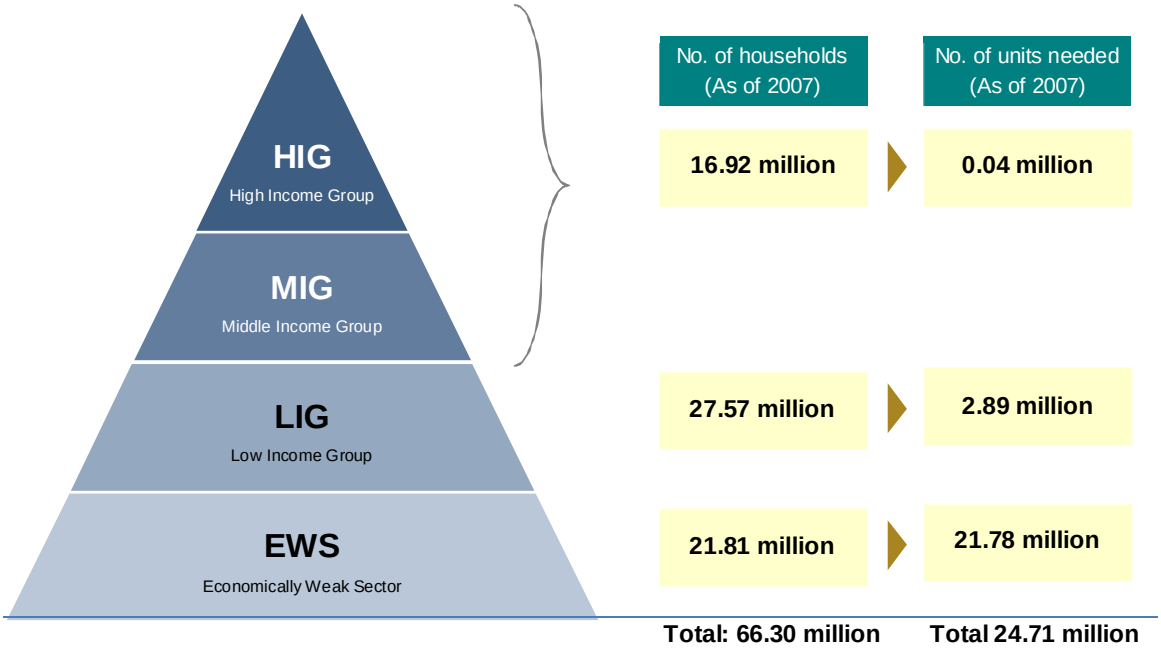

Figure 2: India's income classifications and the shortage of housing units for each classification
Source: Compiled with data from the *Report of the Technical Group (11th Five Year Plan: 2007-12) on Estimation of Urban Housing Shortage*, Ministry of Housing and Urban Poverty Alleviation.

The magnitude of housing shortages varies from state to state. The following are some of the states faced serious housing shortages as of 2007: Maharashtra, Tamil Nadu, Uttar Pradesh, and West Bengal.

In addition, according to General Real Estate Company A, which is a real estate trader, as of the end of 2012, there is a 26.5 million unit shortage in all of India. What is more, if we look at housing shortages by the percentage of each income classification affected, we see that around 60 percent of shortage is in housing for the LIG, while LIG housing only accounts for around a mere 20 percent of the total housing supply, meaning that there is a large gap between the supply and demand for LIG housing.

Table 1: Gaps between supply and demand for housing in India

Income strata	Share of each stratum in the overall housing deficiency	Share of each stratum in the overall housing supply
HIG	Around 10%	Around 30%
MIG		Around 50%
LIG	Around 60%	Around 20%
EWS	Around 30%	-

Source: Compiled from interviews with General Real Estate Company A.

4. Field surveys

The table below shows the dates on which field surveys were conducted as well as the main topics investigated.

Table 2: Field survey schedule

Surveys	Dates	City	Main topics of surveys
1st Survey	July 30 to August 2, 2012	Chennai	Survey of business sites, survey of target purchaser demands, technical evaluation, evaluation of relevant laws and regulations and examination of measures to comply with them, and a feasibility study of lending mechanisms for the BOP
2nd Survey	September10 to September 14, 2012	Mumbai	Same as above
3rd Survey	November 26 to December 1, 2012	Chennai	Same as above (mainly technical evaluation)
4th Survey	January 20 to January 25, 2013	Delhi and Ahmedabad	Same as above (mainly technical evaluation and survey of business sites)
5th Survey	May 20 to May 24, 2013	Delhi and Chennai	Same as above

The following are the findings of the surveys of each city/state/territory looked at in this study (Chennai, Mumbai, Delhi, and Gujarat).

4.1 Chennai

4.1.1 State of the housing market

According to local Developer C, as is the case with India as a whole, there is a high demand in Chennai for LIG housing, and specifically the LIG housing specs that are currently selling the most in the Chennai housing market are 2BHK (two bedrooms, one hall, and one kitchen) units of 500 square feet, the best-selling of which are priced at 1.2 million rupees.

According to General Real Estate Company A, which facilitates real estate transactions, in Chennai the demand is especially high for housing that is roughly between 450 and 500 square feet and is in the 800 thousand—1.2 million rupee price range.

General Real Estate Company A further indicated that IT companies are concentrated in Old Mahabalipuram Road (OMR) area, and that the area has a large number of MIG residents that work at those IT companies. Meanwhile, many people in the LIG live in the area between National Highway 4 (NH4) and Grand Southern Trunk Road (GST); hence this area is the center of the LIG housing market.

We found out the following facts from interviews with JETRO Chennai staff. As for the ratio of home ownership versus renting, according to the most recent national census 40 percent in the city of Chennai rent their dwellings. Many Japanese live in the OMR and East Coast Road (ECR) areas. Shopping malls and other conveniences (“community infrastructures”) have been built in the central

and southern parts of Chennai, which has driven an increase in high-end housing. They also told us that in India, it is normal for the rich, middle-class, and BOP segments of the population to live in proximity to one another.

In addition, according to local Developer A, as of July 2012, land prices in Chennai are skyrocketing. As a consequence, in Chennai it would be necessary to build the housing to be supplied at least four to six stories high to curb the price per unit.

4.1.2 Business models of local developers

Although the demand for LIG housing is high in Chennai, most developers are currently not capable of constructing LIG housing. General Real Estate Company A indicated to us that as of July 2012, there are only about two of companies in Chennai that are supplying LIG housing and turning a profit. According to Developer A, developers in Chennai have been required by a government-issued directive to make 10 percent of the housing that they offer LIG and EWS housing, but aside from the two companies mentioned above, developers are not generating profits from EWS or LIG housing businesses. These developers are using the profits gained in their MIG housing businesses to compensate for the shortfalls in their LIG and EWS housing businesses.

4.1.3 Feasibility study of lending mechanisms for the BOP

(1) Home loans for the BOP

According to the Bank of Baroda, the housing sector in India is a high-priority sector policy-wise, and all banks are required to grant at least a certain mandated percentage of their loans in the form of home loans. In connection with BOP home loans, of particular note is the policy in place at the state-owned commercial Bank of India, which preferentially grants 40 percent of its loans to those with annual incomes of two million rupees or less.

In contrast, when one looks at the private financial sector it becomes clear that because of the low profit margins, there are few institutions that give out BOP loans of their own volition. At HDFC Bank, for example, the value of loans receivable for LIG loans is 60 billion rupees, which is a mere 10 percent of HDFC's total loans receivable.

Moreover, with people in the EWS who cannot find steady jobs, in addition to low profit margins there is an increased risk of default, so the reality is that the provision of home loans and other assistance in purchasing housing is done under government direction, and there is very little engagement in this market by private-sector financial institutions such as HDFC.

(2) Screening criteria for receiving BOP home loans

At all the banks where we conducted interviews as part of this study, the biggest screening criterion established by private financial institutions for receiving a BOP home loan was whether the loan recipient had a regular job. A regular employee of a company, even if he or she was part of the LIG, was able to secure a bank loan. For persons who are not regular employees, loans are conditional upon the ability of individuals to repay, and if approved the loan amounts are likewise determined based on repayment ability, but in reality it is generally difficult for people in the EWS to receive loans.

To mitigate default risk, the Bank of Baroda limits their general screening standards for loans to people with regular jobs, and then conducts screening of the reliability of the company and other

such factors. A person with a regular job and a steady monthly income pays back the loan in equated monthly installments (EMI, a fixed-amount repayment system). There are several other repayment options available as well for farmers and people in other occupations without stable incomes, e.g. the option of repaying in lump sums once every three or six months.

(3) Government assistance for purchasing EWS housing

The chief form of assistance for purchasing EWS housing, for which loans from private financial institutions are very difficult to obtain, is through government-sponsored programs. In Chennai, assistance of this nature is carried out under the direction of the Tamil Nadu Slum Clearance Board (TNSCB). Assistance provided can be summarized as follows. Of the roughly 800 thousand rupee sales price (as of May 2013) for an EWS relocation home, 50 percent is subsidized by the national government and 40 percent by the Tamil Nadu state government. The remaining 10 percent (Rs. 80 thousand) is paid by the resident. The payment plan is such that the 80 thousand rupee loan is paid back over a 20-year period whereby the recipient repays TNSCB with a monthly installment of 350 rupees plus a 250 rupee maintenance fee. Slum residents who have paid in full in a five-year period are able to obtain ownership rights.

4.2 Mumbai

4.2.1 State of the housing market

(1) Central Mumbai

Mumbai is a city with inherent geographical constraints, as most of it is situated on an island. For this reason, the area of land that can be used for the provision of housing is very limited. It is extremely difficult to acquire land for development, and land prices are soaring.

In fact, according to what we have been told by local government agencies and developers, land prices account for 80 percent of housing prices in central Mumbai, and an 800 square foot dwelling in central Mumbai is selling for the extremely high price of around 67.5 thousand rupees per square foot. Furthermore, according to General Real Estate Company A, the market rate for a MIG housing unit in central Mumbai is around five or six million rupees, while the market rate for a 400 square foot LIG housing unit in the same is around four million rupees (Rs. 10 thousand/sq. ft.), which is around twice the going price in Chennai.

Given these circumstances, there is almost no supply of LIG housing in central Mumbai. The focus of supply is HIG housing. As of September 2012, there is said to be an excess in the supply of HIG housing. As for LIG housing in central Mumbai, there is a certain level of supply through the use of the government scheme. (The government scheme is discussed in further detail below.)

(2) Suburbs of Mumbai

To avoid the high land prices, almost all of the LIG housing projects currently underway in the Mumbai metropolitan area are being undertaken in the suburbs or on the outskirts of Mumbai. According to General Real Estate Company A, LIG housing in Mumbai tends to be developed in

suburbs farther from the city center than is the case in other Indian urban areas.

Developer E indicated that because land prices are high in the Mumbai suburbs as well, it is necessary to keep the prices per dwelling unit down. Generally, this means building LIG housing structures at least five stories high and putting in four to eight units per floor. According to General Real Estate Company A, the going rate for housing that is 40 kilometers away from central Mumbai is between five and ten thousand rupees per square foot, and that for housing 60 kilometers away is around three to three thousand five hundred rupees per square foot.

Housing prices are continuing to rise sharply in the Mumbai metropolitan area. When Developer E put 500 units of LIG housing located 100 kilometers from central Mumbai (Boisar) on sale two years ago, the sale price was around 1.4 million rupees, but that price has now jumped to around 1.9 million rupees.

4.2.2 Business models of local developers

A local lawyer informed us that there are around 200 developers in the Mumbai metropolitan areas, but there are only 10 companies among them that deal in LIG housing. At present, there are few developers selling LIG housing that have succeeded in generating profits with their LIG housing businesses alone. For most developers, LIG housing prices are low and margins are small, so their businesses are structured to earn profits mainly from MIG housing. At present, the majority of developers supply LIG housing through the use of the government scheme. (The government scheme is discussed in further detail below.)

Developer E, which is one of the few developers to succeed in providing LIG housing, enjoys roughly a 45 percent share of the entire LIG housing market in terms of units supplied. According to Developer E, keeping per-unit costs down is of the utmost importance in supplying LIG housing.

4.2.3 Feasibility study of lending mechanisms for the BOP

(1) Home loans for the EWS

Despite the high level of demand for loans to people in the EWS, the market has yet to be developed sufficiently. In fact, HDFC has granted housing loans for just four million households. As it stands, providing loans to the EWS are viewed as difficult without support from the government.

(2) Screening criteria for receiving LIG home loans

At all the banks where we conducted interviews as part of this study, the biggest screening criterion for a LIG home loan is whether the potential recipient is a regular employee of a company. If he or she is a regular company employee, it is possible for him/her to secure a bank loan. HDFC also uses comprehensive data such as income for the past six months, credit reports, and other criteria to make decisions as to whether to grant a loan.

4.3 Gujarat

4.3.1 State of the housing market

Developer H informed us that the Gujarat state government plans to provide five million housing units, about 70 percent of which are slated to consist of LIG housing. That said, land prices in

Gujarat are on the rise (having doubled in five years), so if the state government is to provide LIG housing it will have to do so on the outskirts of Ahmedabad, specifically at least 50 kilometers away, for the plan to be profitable.

According to General Real Estate Company A, urban development in Gujarat is proceeding westward, and as a result the housing market has become quite active on the western side. In particular, urban development has dramatically driven up land prices inside the 132 Ft. Ring Road that encircles the center of Ahmedabad as well as inside the circumference of Sandar Patel Ring Road, which is located outside the former's perimeter. As a consequence, LIG housing must be constructed chiefly outside those areas.

In addition, because urban and regional development is proceeding westward, LIG housing projects are being pursued to the west as well. For example, there is the Applewoods residential project, which combines HIG housing and LIG housing, and the LIG housing project Shubh Griha, which is currently underway in the northwest.

At the same time, HIG residential development is progressing inside the belt of Sandar Patel Ring Road. Condominiums are generally being sold in the 20 million rupee range (for around 2,500 square feet).

4.3.2 Business models of local developers

According to Developer G, Gujarat has a state regulation mandating that when a developer engages in the development of townships in Gujarat, 10 percent of the total units supplied in the township must be LIG housing. This developer indicated that all developers are operating in accordance with this regulation.

However, because of rising land prices in the state, the 10 percent worth of LIG housing business within the township development area is not in itself enough to be profitable. As a result, it is generally the case that companies generate profits from the 90 percent of their MIG and HIG housing businesses and apply a portion of those profits to LIG housing.

4.4 Delhi

4.4.1 State of the housing market

Delhi is subject to a master plan developed by the Delhi Development Authority (DDA) involving the availability of housing. In the interests of urban planning, there are constraints on land that can be used for the provision of housing, in addition to limits on the number of stories per structure dictated by basic Building Bye-laws, so it is extremely difficult to procure land for development purposes, a situation which has contributed to the soaring land prices.

As we learned from the DDA and a cost consultant, as a consequence of the land cost issues, there is almost no LIG housing actually being provided in central Delhi.

As a result, in the current master plan, which was formulated by the DDA, housing provision projects must be such that 10 percent or more of all units provided must comprise EWS or LIG housing. Furthermore, in the *Master Plan for Delhi 2021*, which was formulated in 2007, a scheme was put in place by which at least 15 percent of FAR or 25 percent of the total number of units supplied (whichever is larger) must go to EWS or LIG housing as a condition for being able to government land.

4.4.2 Business models of local developers

The DDA says that the (Delhi) territorial government is actively cleaning up slum areas, and that it is soliciting schemes from developers to mitigate FAR requirements, for example, in lieu of constructing LIG housing. Developers tender bids on the public projects. In these projects, developers apply profits gained through the HIG housing business and apply them to LIG housing, which enables them to make an overall profit.

4.5 Housing market climates of the different urban areas

We compared the housing market climates of the urban areas surveyed in this study (Chennai, Mumbai, Gujarat, and Delhi). The results are shown in the comparison table below.

Table 3: Comparison of the housing market climates of the different urban areas

		Chennai	Mumbai	Gujarat	Delhi
Population in thousands (2001)		6,560	16,434	60,384	16,753
Market conditions of the urban area	Center	● Land prices have skyrocketed, but they are still around half what they are in Mumbai.	● Land prices have skyrocketed (about twice what they are in Chennai) ● About half of the population of the metropolitan area lives in slums. ● It is extremely difficult to obtain land for development ● There are well-developed government schemes for providing LIG housing.	● Land prices are soaring (doubling in a five year period). The focus is on HIG housing development.	● Due to building regulations, it is extremely difficult to obtain land for development, and land prices have soared as a result. There is almost no LIG housing being provided.
	Suburbs	● Many global companies have established a presence in the industrial parks under the direction of the state of Tamil Nadu.	● Improvements are being made to the infrastructure centering on the Navi Mumbai area, and more housing is being built there.	● LIG housing would have to be built at least 50 kilometers away from the urban center, on the outskirts of Ahmedabad, for it to be profitable.	● More housing is being built particularly in the cities of Noida and Greater Noida.
Going market price for LIG housing	Center	● Around Rs. 5,000/sq. ft.	● Around 10,000/sq. ft.	-	-
	Suburbs	● Around Rs. 1,800/sq. ft. (around 50 km from the urban center)	● Around 40 km from the urban center: Rs. 5,000—10,000/sq. ft. ● Around 60 km from the urban center: Rs. 3,000—3,500/sq. ft.	● Around 30 km from the urban center: Around Rs. 2,300/sq. ft.	● Around Rs. 10,000/sq. ft.
Terms for BOP home loans	LIG	● Regular company employees can receive loans.	● Regular company employees can receive loans.	-	● Nearly all home loans offered by private financial institutions are for the HIG and MIG.
	EWS	● Housing loans are provided under the direction of the state government. (It would be difficult to get loans with private financial institutions alone.)	● Housing loans are provided under the direction of the state government. (It would be difficult to get loans with private financial institutions alone.)	-	● Housing loans are provided under the direction of the state government. (It would be difficult to get loans with private financial institutions alone.)
Competition		● Most developers take profits generated from their MIG housing businesses and apply a portion of them to LIG and EWS housing to make up for losses in the latter. (Only two companies have been successful.) ● There are also developers that choose areas that are distant from the city because land prices are cheap enough that even LIG businesses can be profitable.	● Of the roughly 200 developers in the Mumbai metropolitan area, only 10 of them deal in LIG housing. ● There are almost no developers that have been successful at generating profits exclusively with LIG housing businesses.	● LIG housing is provided in compliance with state regulations stating that 10% or more of all housing units provided must be EWS/LIG housing.	● LIG housing is provided in compliance with regulations stating that 10% or more of all housing units provided must be EWS/LIG housing.

4.6 Potential local partners in each of the urban areas

In this study, after discussions with a considerable number of PEB manufacturers and developers, we concluded that in addition to the method of developing the business we initially envisioned whereby we partner up with a local PEB manufacturer, it would also be conceivable to develop the business by investing in real estate development projects with local developers as partners. In looking at potential local partners, we considered these two types of partnerships.

For PEB manufacturers, who must possess particularly advanced technological capabilities, we toured factories and chose as potential partners those manufacturers that had at least the minimum prefabricated housing manufacturing capabilities that would be required in India. For potential local developer partners, we chose mainly from the pool of local developers who have been successful at generating profits in projects to provide LIG housing. It should be noted, however, that we have yet to assess whether any of these companies merit concern in terms of their financial standing, internal controls, etc.

The potential local partners in each of the four urban areas are shown in the comparison table below.

Table 4: Potential local partners in each of the urban areas

	Chennai	Mumbai	Gujarat	Delhi
PEB makers	● Prefab Maker A: Although it is for the HIG, this makes prefabricated housing	None	None	● Prefab Maker A: Although it is for the HIG, this makes prefabricated housing
Developers	● Developer C (operates on the outskirts of Chennai): Has the need for funds ● Developer D (operates in Trichy): Interested in precast concrete construction-related technology	● Developer E (operates on the outskirts of Mumbai and elsewhere): Interested in precast concrete construction-related technology	None	None

5. Examination of prospective business schemes

5.1 Examination of business sites

The envisioned areas of business operations are as follows.

5.1.1 Inside a 50-kilometer radius of Chennai (mainly the southern and southwestern areas)

More automobile manufacturers are moving their factories and such into these areas, and there are many BOP residents here who work in jobs involving the manufacturing industry. Just as with Ahmedabad, there is a strong local demand for low-cost housing.

5.1.2 Inside Delhi

Provided that the person in charge on the government side does not change, we can expect to gain the cooperation of the Delhi government and other public agencies in securing land, so business viability should be relatively easy to achieve.

5.1.3 Inside a 50-kilometer radius of Ahmedabad (mainly the northwestern area)

This area features a heavy concentration of factories controlled by automobile manufacturers as well as other factories owned by local and foreign interests. Currently, this area is seeing a construction rush to build housing developments to accommodate factory workers and other laborers, in part because major automobile manufacturers and others are planning to move in. As the development of industrial parks on the northwestern side of Ahmedabad continues, we can expect the demand for LIG housing, especially for factory workers in the suburbs, to increase even further.

5.2 Examination of how to develop the business taking into account the field surveys

5.2.1 Establishment of target customers

Our examinations thus far have not included detailed definitions for the “BOP segments” of the population, and have proceeded upon the understanding that the BOP comprises all persons making less than 3,000 dollars a year (sometimes referred to as the “BOP 3000”). Though each group is considered to be at the same “base of the pyramid,” there still exists a major difference in the purchasing power of the top of that pyramid’s base (from the LIG to the MIG) and the bottom of the base (the EWS).

At present, the businesses that have proved viable in supplying BOP housing have been those targeting segments of consumers corresponding to the LIG and up (with a focus on the MIG). For households in the EWS income bracket, housing has been limited to that provided by the government as part of social security measures. Without official assistance it would be difficult to run a business offering housing to people in the EWS who do not have regular jobs, as it is very difficult for banks to give home loans to this segment in particular. In the sections that follow, we first consider business schemes for the private-sector provision of LIG housing that could be sustainable. In the next section, we discuss the possibility of providing EWS housing through partnerships with public agencies, including JICA.

5.2.2 Examination of possible methods to develop the business

(1) Supplying building materials as a PEB manufacturer

In this study, we initially envisioned a business model in which we would form a joint venture with a local PEB manufacturer and sell building materials to local developers. However, upon conducting the field surveys it became clear that no companies—not even local PEB manufacturers—have been successful in providing the LIG consumer segment with low-cost prefabricated housing.

As it stands, nearly all prefabricated housing is sold to HIG consumers and almost none to the LIG. According to local prefab manufacturers, houses built with using prefabricated housing technology are uncommon in the rare market. Therefore, even if companies were able to supply them, doing so would entail a degree of uncertainty about the receptiveness on the part of customers. We are considering the following two potential solutions to address this issue. First, consumer receptivity is presently low, but awareness among people in the HIG who have travelled abroad is high, so it might be possible to establish a brand image recognized by the LIG as well through creative marketing strategies. In fact, there are currently several PEB manufacturers that have addressed this problem and improved receptivity among local LIG customers using construction techniques such as covering prefabricated sections with concrete panels. For that reason, although steps such as these mean a somewhat higher cost, it is possible to improve receptivity.

As outlined above, to develop the business as PEB manufacturer, which we had initially envisioned, we would not only have to offer products we would sell locally at a far lower price, but also have to develop products that meet local consumers' needs, such as those mentioned above. There are still a multitude of issues that need to be considered before we would be able to launch such a business locally, issues such as the establishment of joint ventures with local partners, collaborative research and development with local partners, and test marketing. For these reasons, we believe that using this method to create a viable business in a short period of time would likely be very difficult.

(2) Providing BOP housing along with MIG/HIG housing

One of way to enter the local market that we had not envisioned when we first undertook this study is to provide BOP housing in a manner in keeping with the spirit of local regulations. The laws in India vary from state to state, but in many states, when a business undertakes a large-scale housing development project, the business operator is required to allocate around 10 percent of the housing it provides to BOP housing. For this reason, just being involved with an ordinary large-scale development project leads to direct benefits to the BOP. In such a scenario, it is conceivable to have a scheme where the appropriation of land and other aspects that are generally off-limits to foreign capital could be delegated to local developers and the technical assistance and similar aspects could be handled by Daiwa House, but to break even from a business perspective, providing reinforced concrete housing is a more realistic option.

The reason for bringing up BOP in this context is that, while free EWS housing is provided, for example, in Mumbai's slum clearance schemes, in the schemes of Gujarat and other states, the provision of LIG housing is sufficient. (That said, even in Gujarat, LIG housing is considered an unprofitable segment and not viable as a business.) Businesses under the Mumbai slum clearance schemes also are at high risk for becoming speculative in nature. As noted above, within the scope of this study, Mumbai poses a near prohibitive level of difficulty as prospective business site, so if we

were to develop such a business in this area it would likely take the form of involvement funding and similar forms of participation to businesses providing LIG housing units equivalent to 10 percent of their MIG/HIG housing units.

(3) Providing housing through dedicated LIG housing projects

Another conceivable avenue for developing the business is to invest in or form joint ventures with developers such as Developer C in Chennai, which has succeeded in generating profits just from projects to provide LIG housing, and through such partnerships provide reinforced concrete LIG housing in the local market.

In point of fact, there are developers in Chennai that reaped profits by developing apartment complex-like housing clusters occupied almost exclusively by the LIG. It is worth mentioning that we were unable to find any business operators in Delhi or Gujarat that have been profitable with LIG housing businesses alone. This underlines the fact that operating a business offering only low-cost housing is next to impossible.

Nevertheless, if we compare the business option of offering LIG housing as a part of a larger business providing MIG/HIG housing against the option of engaging in LIG-exclusive housing projects, we can reasonably expect the profit margins of the latter to be lower. For an enterprise looking to but to break even from a business perspective, are likely to be few if any attractive projects. To adopt this method of business development, it would be necessary to create the conditions to keep the business sufficiently in the black, which would require, for example, being able to use land owned by local partners, etc. at a reduced cost. Only then would it be possible to develop the business.

(4) Providing LIG housing through government agencies

The last prospective method for developing the business involves utilizing land owned by government agencies and getting involved in LIG housing projects. It should be said at the beginning, however, that this route necessitates having the cost-competitiveness needed to compete with local developers, and as such is an untenable option at this point. If in the future we were able to secure the cooperation of the relevant government agencies, this option would be worth exploring. Schemes to offer housing to special purpose companies (SPCs) established by state governments, to public housing corporations, etc. are described in the next section.

5.3 Conclusions

The conclusions drawn from the field surveys are as follows. To begin with, entering the local market as a PEB manufacturer making use of prefab technology would require major cost cuts and other unaddressed issues that would take a comparatively long time to resolve, so we must lower the order of priority of this market entry option.

Meanwhile, for foreign firms, investment in MIG/HIG housing is on a project-by-project basis, and for this reason there is a good chance of coming across projects that meet the criteria for investment. As a result, in exploring realistic ways of entering the market, it is worth considering establishing a local base of operation in India by undertaking high-margin projects to supply MIG/HIG housing, and concurrently study the possibility of expansion as a PEB manufacturer at that base of operations.

Table 5: Comparison table of business development options

	PEB manufacturer (building material supplier)	Developer		
		Providing LIG housing along with MIG/HIG housing	Providing housing through dedicated LIG housing projects	Providing LIG housing through government agencies
Role of Daiwa House Industry	PEB manufacturer (technical and capital partnerships)	Developer (Form joint ventures with local partners.)		
Products	Collaborative development of low-cost products with local partners would be essential.	Utilize local partners' products.		
Prices	Lower prices would be essential.	This option means lowering prices by applying the profits generated from MIG/HIG housing.	As a general rule, we would adopt the price structures of local partners.	It would be essential to lower prices enough to be able to compete with local developers.
Distribution	Utilize the distribution networks of local PEB manufacturers.	Utilize the distribution networks of local developers.		
Promotion	It would be necessary to employ creative marketing strategies to establish a prefab brand image in the minds of LIG consumers and/or to use construction methods such as covering prefab sections with concrete panels.	Apply existing methods.		
Priority	Low	High	Medium	Low
	Joint development of low-cost products with local partners would be crucial to providing LIG housing materials. However, not even local PEB makers have been able to succeed in lowering the cost of their products, making this an extremely difficult venture, meaning that continued R&D are be necessary.	While this business would be dependent upon profits made in selling MIG/HIG housing, it would allow the company to provide EWS/LIG housing in accordance with the current regulations.	It is possible to supply LIG housing by investing in local developers or by forming joint ventures with local developers. However, this option would not be as profitable overall as projects in (2), it is lower in priority.	This option would require that we nurture the kind of price competitiveness needed to be awarded competitive bids for development projects using land owned by government agencies. It would also mean competing directly with local companies, a prospect which poses a formidable barrier.

6. Suggestions

As noted in the previous section, when we consider issues of marketability as a business, the most realistic means for entering the local housing market is the one in which we provide LIG housing along with MIG/HIG housing. If our company were to make an attempt now to develop a business on its own out of providing housing using prefab technologies, which is the focus of this study, and providing housing to the EWS, whose incomes are at the bottom of India's BOP populations segments, it would not be profitable, although it is possible that the viability of such a business will increase in the future with cooperation from local governments or the Japanese government. Hence, in this section, we have chosen to focus on EWS housing and explore possibilities as to what forms of assistance might be provided to the Indian government and the Indian people with the cooperation of the Japanese government and Japanese private-sector corporations.

6.1 Providing housing to the EWS

6.1.1 Circumstances underlying the EWS market

To begin with, it is safe to say that the biggest barrier separating the (upper) LIG and the EWS is the employment barrier. The EWS earn at most half what the LIG earns. A large part of this gap can be attributed to prevalence of day-labor among the former. This gap becomes a chasm when it comes to major investments such as the purchase of a home. This factor has a particularly large impact on the credit extended by banks. One conclusion we arrived at upon visiting several financial institutions is that the hurdles that must be overcome for a laborer without a regular job to secure a home loan from an ordinary financial institution are prohibitively high. The fact that—at least in practice—only government institutions are capable of extending credit to this segment of the population remains a major issue.

Another major issue is the cost of housing. The target prices for housing we arrived at as a result of this study reach the limit of those achievable by local developers and PEB manufacturers. If we were to aim for an even lower price range, it would very likely result in quality standards below those at which major developers could assume defect liability. As a consequence, standards of quality that are acceptable when supplied by a small NGO or other organization fall below standards of quality that major developers with the capacity to offer housing on a large scale can provide. As stated above, providing large volumes of housing while overcoming the constraints inherent in providing EWS housing is a feat that a private-sector company cannot accomplish on its own. The fact that EWS housing businesses are not sustainable becomes more evident when one considers that, within India, the provision of EWS housing is covered by support mechanisms of the central and state governments.

6.1.2 Proposal for a new scheme: Administration of rented homes by public agencies

Upon interviewing representatives from the state and central governments for this project, we were informed of many issues relating to the fact that, although the state governments own a considerable amount of land and there are many in the economically weak segment of the population who should be living on this government land, there are not enough funds to provide low-cost housing at a sufficient volume to accommodate them. For example, the central government already supplies 80 percent of the total funds for its affordable housing assistance programs. Given the Indian government's current three-fold economic problems of a current account deficit, a weak

currency, and high inflation, the type of large-scale, sustained investment needed is currently a practical impossibility. This is because the low-cost housing scheme itself has inherent distortions, and if these distortions could be resolved, the volume of supply itself has the potential to grow. If the Japanese government and Japanese housing industry can be of some help in resolving these distortions, then this study will have been more than worth the effort.

If we look back upon Japan's recent past, one organization that stands out from the post-war recovery years through the country's period of rapid economic growth is the former Japan Housing Corporation, which in modern terms would be considered a quasi-public corporation (or part of the "third sector" in modern Japanese parlance). This organization was tasked with supplying, holding, and managing funds for the purpose of resolving the housing shortage associated with the swell of the population in urban areas. When comparing this organization with the current supply models in India, the biggest point of departure rests upon whether or not it is the residents (or developers) that hold the housing assets. Generally speaking, holding onto large assets over the long term often entails a considerable burden on business operators, who must deliver a return on assets, or on individual households whose incomes are volatile (especially the kind of day-laborers that make up much of the EWS). For that reason, the presence of an agency capable of temporarily relieving individuals and business proprietors of the budget concerns of such a large asset as a home is extremely effective in increasing the liquidity of the housing market.

Moreover, as is the case with present-day India, Japan once enjoyed an economy in which people could expect capital gains. In that type of economic situation, the growth rate of housing prices is generally higher than the inflation rate and market interest rates, so one can expect to see a growth in the value of the asset just by holding onto it. Given these advantages, we believe that it would be advantageous to India to have such a "third sector" public agency that could at least temporarily take control of large assets in the form of housing units, and during the holding period rent them out at a very inexpensive rate to the EWS or others at an economic disadvantage, after which it could either continue to hold onto them or offer them for sale on the used housing market.

6.2 Relevant stakeholders and their roles

6.2.1 The role of the Indian government

It goes without saying that the primary responsibility for improving the living standards of the BOP segments of India's population lies with its own supervisory agencies. Up to now, the topic of providing BOP housing has been discussed within the context of national development plans, but there have been no discussions of the provision of housing for rent via "third sector" agencies.

In examining the role that the Indian government is to play in bringing this project to fruition, we must first look at the respective functions of the various state governments and the central Indian government. The current division of responsibilities for providing the poor with housing is such, as noted above, that the concrete planning for supplying housing is the exclusive responsibility of the states, while 80 percent of the expenses necessary to put those plans into place is covered by the central government. In light of these facts, a realistic approach would be to hold direct discussions with the state governments concerning the establishment and trial implementation of the specific scheme and then validate that scheme by implementing it on small scales within the authority of the states.

At the same time, the central government should take the initiative in considering legal systems, etc. to institute to prevent the occurrence of housing price bubbles, a concern that was hinted at above. To that end, the central government must act in line with its own responsibilities and policy

positions and consider what laws would be necessary to oversee this scheme and study how to put those laws into effect.

6.2.2 The role of the Japanese government

The role of the Japanese government would chiefly be as an ODA donor. The ODA framework makes available a variety of assistance options, but in any case the first form of assistance needed will be to help verify the feasibility of the relevant scheme. Even after the feasibility has been verified, there would still be many practical matters that must be studied, including the establishment of a "third sector" agency, the creation of the relevant legal systems, the operation of public corporation, etc. There would be, for example, matters such as how to ensure the collection of rent, what principles one should follow when setting rent and deciding on renewals, and other practical matters on which insight and experience gained in Japan could be offered. As such issues may be covered within technical cooperation and similar aid frameworks, they should be set aside.

There is also the possibility of assistance through ODA loans for the initial phases of construction or the construction of large-scale rental complexes. In either case, the decision to provide aid through these ODA mechanisms is dependent upon the level of priority placed on the project within India, so it would first be necessary to determine the feasibility of the project at hand, and then wait for the decision of the Indian government once it considers it in relation to other aid projects in the country.

In this respect, the role of JICA cannot be underestimated, as it is in effect an implementation organ for ODA from Japan. It is easy to imagine then that all of the matters for consideration outlined above would require JICA's cooperation. In addition, with the implementation of SPC and similar schemes, there is the future potential to participate in these mechanisms as investors.

6.2.3 The role of Japanese industry

The primary function of Japanese industry would be to respond to requests from the Indian government to send, for example, groups of specialists by partnering and cooperating with industry and other groups to provide the necessary technological assistance. At the same time, in the interests of strengthening the industrial competitiveness of Japan over the long term, when assisting in the design of public corporations and related legal systems in India, it is only natural to consider the potential for India to incorporate designs that would benefit Japanese companies. For example, one possibility would be standards for exports. But given the fact that India has historically relied on British standards, we will doubtlessly consider other options as well.

6.3 Realizing the proposed scheme

6.3.1 Steps to realizing the proposed scheme

Although we have presented in the section above suggestions that are akin to policy proposals, we are aware that it would be extremely difficult for the state governments tasked with implementing these types of policy measures to construct this kind of scheme in a single step. For this reason, we have dedicated this section to offering suggestions that might be helpful in taking the steps needed to administer a scheme of this type. Specifically, we suggest that the state governments establish SPCs, which should first be granted ownership of several assets in the form low-cost housing projects. To make these SPCs suitable for investment, rather than treating them like simple and conventional

housing projects, it would be necessary to ensure that the investment comprises attractive properties likely to yield at least some level of capital gains. For example, in some cases it may become necessary to set up housing projects that consist of certain ratios of MIG/HIG housing, but to prepare for such cases, we hope that the pertinent government agencies conduct studies of more in-depth scheme designs that encompass matters such as the proper makeup of housing projects and scope of permitted investors.

The proposed scheme would mean that the burden of managing the funds necessary to provide housing would no longer rest exclusively with the central government and respective state ministries and agencies. Once funds from the outside begin to flow in, that influx could simply be used to provide more housing, and by extension, lead to improvements in BOP housing conditions. Similarly, the more housing construction there is, the more potential demand there we can expect from those construction workers. Moreover, generally speaking, construction workers are often transplants or migrant workers from rural areas, i.e. BOP workers, so this type of construction would help create BOP jobs as well.

6.3.2 Talks with the respective state governments in India

During the fifth field survey, we presented to the following government agencies our proposal for a scheme to establish a public housing corporation, and held discussions (exchanges of views) with them.

- Delhi: Urban Shelter Improvement Board (Chief Executive Officer, Project Director)、National Housing Bank (General Manager, Executive Director, Assistant General Manager)
- Government of Tamil Nadu: Tamil Nadu Slum Clearance Board (Chief Engineer)

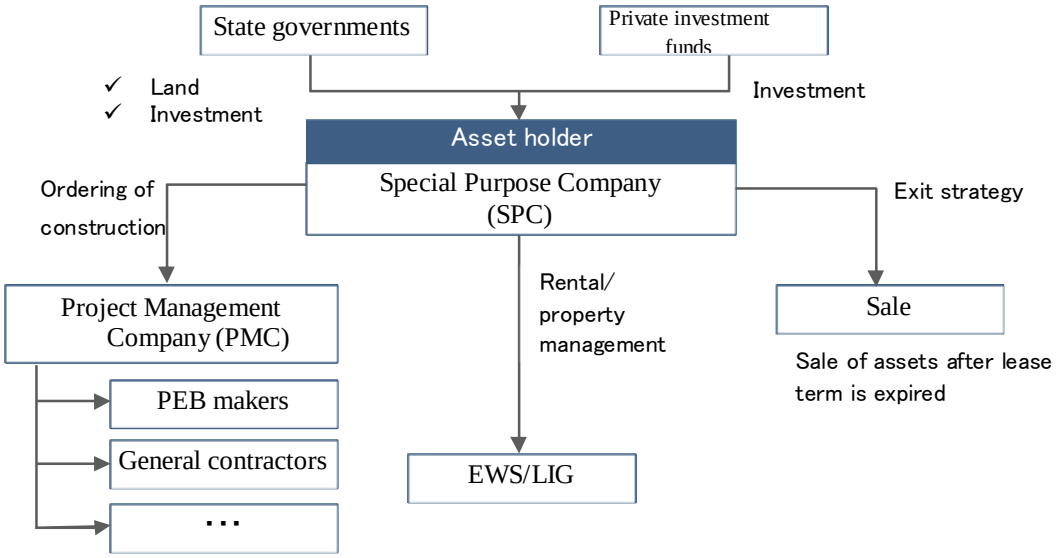

Figure 3: Diagram of the scheme proposed by this study group

The Delhi Urban Shelter Improvement Board (DUSIB), which was established for the purpose of relocating the EWS living in the slums of Delhi, expressed interest in the prospect of being able to apply Japanese urban development models in India and responded that they would definitely like to study the matter. It was apparent, however, that it would take some time to implement due to the need to coordinate in advance with the various stakeholders involved, including other Delhi

government bodies. There were views expressed to the effect that, to ensure that the project is profitable, it would be a good idea to limit the number of slum residents moving in and allocate the rest to ordinary residents. This would, according to the views expressed, allow us to maintain the profitability of the project and at the same time to provide housing to slum residents.

The National Housing Bank, which provides EWS housing assistance through micro-financing, said to us that this scheme is much needed to achieve the objective of increasing the availability of EWS housing, which sorely lacking. The bank also responded that it would like to go forward with discussions with JICA. Meanwhile, some voiced the view that because we have yet to do a study of the implementation of this scheme, we must do a feasibility study (covering such matters as how to collect rent from tenants with no fixed employment, etc.).

In contrast, TNSCB, which is the state bank of the Tamil Nadu government, was highly skeptical of this scheme because they had in the past conducted PPP scheme studies but failed to find willing private-sector participants because of a perceived lack of business viability.

From the above, we believe that the best approach is to conduct a detailed feasibility study and concurrent examination of this scheme with DUSIB and TNSCB, and after this study and examination is concluded, DUSIB and TNSCB should propose this scheme to the Indian government. From there, the Indian government should issue the proper requests to JICA.

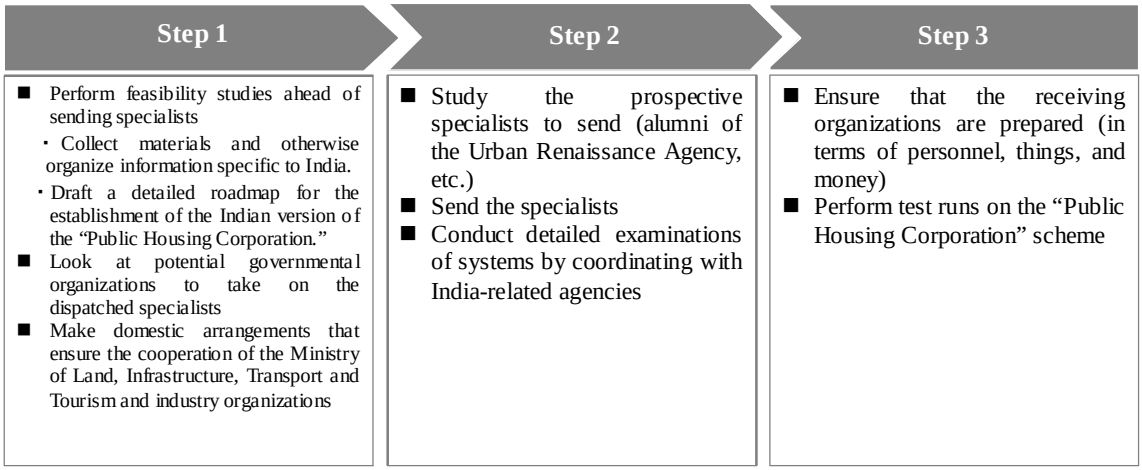

Figure 4: Roadmap for the Public Housing Corp scheme

Preparatory Survey on BOP business on Japanese industrialized housings in India (BOP Business Promotion Survey)

Summary

September 2013

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Mitsubishi Research Institute, Inc.