

## **What Has Emerged From 30 Years of the Orangi Pilot Project**

### **Origins**

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The Orangi Pilot Project (OPP) was established in February 1980 through an understanding between Akhtar Hameed Khan, a renowned South Asian social scientist, and Agha Hasan Abidi, the president of the BCCI foundation, a Pakistan charity. Agha Hasan Abidi wanted Akhtar Hameed Khan to do “social work” for the refugees from East Pakistan who were living in Orangi, a Karachi township consisting of a large number of informal settlements. Akhtar Hameed Khan disagreed with the concept as he did not wish to do “charity work” and also did not want to work for a particular community. However, he proposed that he would study the situation in Orangi and come up with community-based solutions for the improvement of the physical and social conditions in the settlements.

This was agreed upon, as was the idea that the project would be open ended; it would have no timelines but would provide regular quarterly reports on its progress, as well as submit detailed financial accounts with those reports.

### **The Political Context of Karachi and Orangi**

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Karachi, apart from Gawadar, is Pakistan’s only port. In the last census before independence, its population was 425,000. The mother tongue of 73% of this population was one of the local provincial languages (Sindhi, Balochi, and Gujrati). Only 6% regarded Urdu or Hindi as their mother tongue, and 8% spoke Punjabi. No Pashto speakers were recorded in the city at that time. By 1998, only 14% of the residents spoke local languages as their mother tongues, 49% spoke Urdu, 14% spoke Punjabi, and 11% spoke Pashto (GOP Census Reports). This change was due to several factors, including a huge influx of Urdu-speaking immigrants from India in 1947 and the following years; the continuous migration of Pashto speakers from Khyberpakhtunkhwa since the 1960s; and the arrival of Punjabi professionals, businessmen, and artisans to service the city’s expanding services sector. These migrations have changed the demography of Sindh as a whole as the Sindhi and local languages speaking population of the province declined from 96% in 1941 to 63% in 1998 (GOP Census Reports). Thus

Karachi (population 14,910,352 with an additional 2 million “aliens” according to the 2017 housing and population census) became a non-Sindhi-speaking capital of a Sindhi-speaking province.

Karachi houses 32% of the country’s total industrial base and generates 15% of the national gross domestic product, 25% of federal revenues, and 62% of income tax (Master Plan Group of Offices, [2007](#)). There are also powerful federal government institutions in the city in the form of the Karachi Port Trust, Port Qasim, Cantonments, and the Civil Aviation Authority. Their interests often clash with those of the city and provincial government.

The city contains 62% of Sindh’s urban population, 30% of its total population, and 22% of Pakistan’s urban population. In addition, the city produces 75% of the province’s total industrial output (Master Plan Group of Offices, [2007](#)). It also contains Sindh’s premier health and education-related institutions and is the center of the media industry in Pakistan. The city’s location as an outlet to the sea for Afghanistan and Central Asia has dragged it into various Afghan conflicts since the 1980s.

The Sindhi speakers are represented by the Pakistan People’s Party (PPP) and the Urdu speakers are represented by the Muttahida Qaumi Movement (MQM). The PPP, which is in a majority in the provincial assembly, cannot control Karachi’s enormous wealth except through a highly centralized administrative structure while the MQM, which holds the majority of seats from Karachi, cannot control it except through a highly decentralized system of local government. This has been the cause of continuous conflict since 1987. The Afghan war has also played into this conflict, and the city has been home since the 1980s to various regional proxies, which has resulted in the rise of criminal gangs who have become a part of some of these proxies and of political parties. This has compromised law enforcement and development agencies. Meanwhile, no satisfactory consensus on how Karachi should be governed has emerged.

It was estimated in 2006 that 62% of Karachiites live in *katchi abadis* (literally: unbaked settlements, a term used for informal settlements; Hasan, [2008](#)). One such *katchi abadi* is Orangi which is one of the 18 towns of Karachi and is situated in the western district. The township began as a plot scheme of the government for accommodating refugee populations who were living in squatter settlements within the city. The government plan consisted of 590

hectares and was initiated in the mid 1960s. *Katchi abadis* developed around this plot scheme. Families who moved to Orangi built their own homes with the help of informal contractors, and the state provided them with water through tanker trucks. These informal settlements received a large influx of refugees from Bangladesh after its separation from Pakistan in 1972.

The population of Orangi according to the 2017 census is 2.5 million (Zaheer, [2009](#)). Most of the Pashto-speaking settlements in the western district border with Orangi, and as such conflict between Pashto speakers and Urdu speakers has been a regular feature of Orangi politics. This conflict has taken many forms, which include targeted killings of important activists and leaders, forced closure of shops, extraction of money from shops and businesses, and large-scale rigging in the elections. Heavy arms have also been used in this conflict, especially during 1986 (Aziz, [2016](#)) when more than 100 people died. The progressive left-wing Pakhtoons who belonged to the Awami National Party were targeted and killed by the religious groups, who, it is claimed, had support of the Taliban. The influx of Chinese goods has also affected small engineering workshops in Orangi and the leather industry.

Since the OPP began its work in 1980, socioeconomic change has also taken place in Orangi. Women now work in the formal sector industry and in white-collar jobs. They also own and operate beauty parlors. Men have also been absorbed into the formal services sector and along with the women they are schoolteachers, bank managers, representatives of travel agencies, and staff at internet/information technology firms. The Orangi leadership has also changed from nonliterate elders to a younger generation that is literate and at home in the Karachi physical and social environment. The Orangi *katchi abadis* have been marked for regularization but, based on the author's observations, it is estimated that no more than 20% households have applied for a 99 year land lease.

### **Akhtar Hameed Khan**

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To understand the evolution of the OPP, it is also necessary to understand Akhtar Hameed Khan's life and work. He was born in 1914 in Agra. He completed his education in 1930 at the Agra College where he studied English literature and history. He worked as a lecturer at Meerut College. His family came from Uttar Pradesh in India, and he was educated at the

Aligarh Muslim University in Aligarh, which is also located in Uttar Pradesh and at Cambridge. In 1936 he was inducted into the Indian Civil Service (ICS), the most prestigious governance-related institution of British India. As part of the ICS training, he was sent to Cambridge. During his ICS career, he was a collector of the Revenue Department, which gave him an understanding of the rural economy of Bengal and the problems of its peasants. In 1945, he resigned from the ICS because his conscience could not permit him to implement the “denial policy,” which was creating famine in Bengal. During World War II, when the British Indian army and their British counterparts were fighting against the Japanese, the army required rations, and these were provided by compulsory surrender of rice to the government so that it could be sent to the troops in the Far East, causing the famine in Bengal. Akhtar Hameed Khan then worked for a few years as a locksmith in Aligarh. He did this because he wanted to understand how common people felt and thought. In 1947, he became a teacher at the Jamia Millia in Delhi, where he studied Persian, Arabic, and Pali and became a scholar of these languages and their philosophies. In 1950, he migrated to Karachi to teach at the Islamia College. In the same year, he was asked by the government of Pakistan to take charge at Victoria College in Comilla in East Pakistan. While in Comilla, he noticed that there was massive waterlogging in the rural areas around Comilla which was making the land nonproductive. On investigation, he discovered that the land was not being drained as it used to be before the Hindu landlord left East Pakistan. Previously the landlords had arranged this drainage by mobilizing their peasants for this work. At that early stage, Akhtar Hameed Khan was convinced that if the peasants could be organized into cooperatives of some sort, they could collectively manage to drain the fields.

He promoted this concept with bureaucrats and politicians, and he was listened to as he had been an ICS officer. In 1958, he went to Michigan State University to better understand rural development. During this period, he wrote extensively and lectured both at first-world and third-world universities. In addition, he published widely. While at Michigan, he was able to pursue his attachment to *sufic* thought and morals, which became an important part of his life and were reflected in the relationship he was able to establish with the working class and the lower-middle income groups. He returned to Pakistan in 1959 and established the Pakistan Academy for Rural Development at Comilla and was appointed as its founding director. He also laid the foundation for the Comilla Cooperative Pilot Project in the same year in East Pakistan, which became a model for rural development both in the North and the South. In 1963 he received the Ramon Magsaysay Award for his services in rural development, and in 1964 he was awarded an honorary doctorate of law by Michigan State University. When

Bangladesh became a separate country, he moved to Pakistan. In Pakistan he tried to implement the Comilla model in the rural areas of the North West Frontier Province, now KP. He also worked as a research fellow at the University of Agriculture in Faisalabad from 1971 to 1972. At the Academy for Rural Development in Peshawar he worked on the Dawoodzai Integrated Rural Development Programme. In 1980, he moved to Karachi and laid the foundations of the OPP.

Akhtar Hameed Khan believed that people are living in a period of physical and social dislocation because of which old systems of community governance no longer functioned. He felt if new forms of community organization were created, then both social and physical conditions would improve. He also believed that if communities could raise money and use it to improve their conditions successfully, they would be empowered to move on to taking control of their lives and their relationship with state agencies would change for the better. The creation of such communities was his priority (Hasan, [1999](#)). In his personal life, he was austere, and in his professional life he shunned any form of extravagance. This was also appreciated by the working classes with whom he worked.

For the promotion of his concepts and work, Akhtar Hameed Khan felt that it was essential to create an informed public and to develop mutual trust and knowledge sharing with policymakers and government institutions. For his work and dedication to rural development, he is considered a guru, and his ideas are reflected in the Aga Khan Rural Support Programme, the National Rural Support Programme, and USAID programmes.

## **The Development of a Model**

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For the first six months, Akhtar Hameed Khan roamed Orangi, in a jeep supplied by the BCCI foundation. He spoke to politicians, activists, community leaders, shopkeepers' organizations, and local counselors. He analyzed their relationships with the process of lobbying for services in Orangi and came to the conclusion that for the people of Orangi, the most important social and physical development issue was sanitation and that a community-based program could be built around it. He observed that people were already building their underground sewage systems but the scale was too small and the quality of work was so bad that most of the systems clogged up in a few months. The other issue related to this was that the only disposal point for sewage was the natural drainage system, which in many cases was very far from most of the houses. He also noted that there was an absence of trust among

residents in Orangi, and as such large community organizations were difficult, if not impossible, to build. He also observed that there were many activists in Orangi who were constantly lobbying politicians for the provision of services. Very little came out of this except that politicians were invited to visit the settlements, receptions were arranged for them, and they made grand promises which were never realized.

Akhtar Hameed Khan felt that if the cost of sanitation could be made affordable and the people could get together at the level of the lane (a unit consisting of 20–40 houses), they could finance and manage the construction of a sewage line. The lane as a unit of organization was small, and, because all the residents of the households knew each other, the problem of mistrust was minimized.

Akhtar Hameed Khan noted four barriers in achieving what he was proposing. One was a psychological barrier; people felt that this was not their job but that of the government's. For laying a lane sewer, they had to be convinced that the street also belonged to them. Second was the social barrier; in a climate of mistrust, the people had to come together to build a lane sewer. For this they had to be motivated, and this motivation would only come from people they trusted and who knew their problems. Third was a technical barrier; people did not have the knowledge of building a proper underground sewage system nor did they have the tools for doing so. To overcome this, they had to be provided with tools, technical advice, and managerial guidance. The fourth was an economic barrier; the cost of conventional sanitation technology was beyond the affordability of low-income homes. It would need to be considerably modified to be made affordable (Khan, [1994](#)).

The concept of the four barriers is still used throughout Pakistan by international agencies, government of Pakistan projects, and nongovernmental organizations (NGOs) and community-based organizations (CBOs) working on development projects.

## **First Attempts**

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Akhtar Hameed Khan contacted well-known sanitation engineers and architects to help him design a community-financed and -managed sanitation system. He abandoned those efforts because their solutions were far too expensive and sophisticated for the community to finance and build. Subsequently, he sought the help of an instructor at the OPP to design and implement a system in the Hanifabad neighborhood in Orangi, which had agreed to follow

the OPP model and finance underground sewers in their lanes (Hasan, [2010](#)). Within a year, the system had clogged up and the residents were unhappy.

At this stage Akhtar Hameed Khan identified a Karachi architect, Arif Hasan (author of this article, referred to as AH) and in 1981 appointed him as principal consultant to this project. The principal consultant in his initial note stated that new technical standards were required with cheaper methods of pipe jointing and manhole making along with appropriate tools if costs were to be reduced. He also identified that the reason the Hanifabad system clogged was because there was not sufficient water in Orangi to make an underground sewage system function. He designed a simple one-chamber septic tank to be placed between the latrine and the sewer to prevent solids from entering the system so that the system could function with the limited quantity of water that was available. The tank must be emptied every year if grease, dust from sweeping the house, and hair do not enter the tank. The size of the tank was determined by the cost that the people were willing to pay for it. Many OPP replication projects follow this principle of first determining what is affordable before preparing the design and implementation process.

## **Conflicts With Engineers**

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Since all developments in Orangi were closely monitored by the engineering profession, technical personnel in the Karachi Water and Sewerage Board (KWSB), the Karachi Metropolitan Corporation (KMC), and elected local counselors, the proposals made by AH came under attack, for technical and social reasons. In 1982, this criticism received considerable support from the United Nations Centre for Human Settlements (UNCHS) appointed chief technical advisor (CTA) to the project. There were disagreements around six main issues:

1. The CTA claimed that the office of the OPP was in a rundown building in a noisy Orangi locality. It was not conducive to serious work: people came in and out of it without appointment and it was not air-conditioned, so serious professionals could not work there. Akhtar Hameed Khan disagreed. He believed the office should reflect the culture of the Orangi communities and air-conditioning was perhaps the last thing that was required as it would alienate people.
2. The detractors felt that there should be a pilot area. Akhtar Hameed Khan disagreed. He felt that it would limit the programme, and many lanes that wished to finance and develop

their sanitation would not be able to do it. He argued that such a decision would be counterproductive. Meanwhile, AH felt that a scattered system could be brought together provided there was a map of the natural drainage system of Orangi. Planning and bringing together a scattered system would require decentralization of design and implementation and miniaturization of technology. Akhtar Hameed Khan responded to the CTA's letter to the BCCI (Hasan, [2010](#)), rejecting the model proposed by the CTA.

3. There was strong opposition to the sewage being disposed into the natural drainage system from the engineers' lobby as it was against "engineering ethics." AH responded that if all of Karachi's sewage is planned to flow into the natural drainage system, why should Orangi be an exception? And there would eventually be a solution that tackled the problem at the city level. Suggestions were also made that the project should adopt the soak pit as an alternative to overcome the disposal problem. This was suggested by Qurratulain Bakhtiari in December 1981, then director of the Baldia Soak Pit project. This was supported by the CTA. However, the people of Orangi were unwilling to pay for anything other than an underground sewage system. If the elite could have it, they argued, why not they?

4. Engineers also felt that the standards that had been developed as rules of thumb by AH were not suitable to producing a long-lasting sewage system. Special criticism was made of the one chamber septic tank, not only by local but also by foreign experts, and it was predicted that it would not save the system from clogging (Abbott, [1985](#)).

5. Akhtar Hameed Khan appointed the local Orangi activists as social organizers of the OPP program. He came across them in his exploration of Orangi and was greatly impressed by their community links and organizational skills. The detractors felt that the local graduates who had studied subjects such as sociology and social work should be the social organizers within the OPP. Akhtar Hameed Khan disagreed. He felt that the graduates would never be able to understand the intricacies of social relations in Orangi and hence would not be able to respond to them.

6. The next issue on which there were major disagreements was the mapping of Orangi. The chief technical advisor was of the opinion that a survey firm should be employed to prepare a map of Orangi. However, AH felt that the survey should be carried out by university students; thereby, the universities would be introduced to the OPP and vice versa. Also, if 40 students moved through Orangi, mapping the system, the people of Orangi would become a part of the mapping process and would understand the reasons for why it was taking place (Hasan, [2010](#)).

Today, the OPP Research Training Institute (RTI) design standards and the one chamber septic tank are used in all OPP-RTI replication projects, both in the public and NGO sector. Also, the concept of having the lane as a unit of organization for sanitation projects has been used in more than 6,459 lanes in more than 651 urban locations outside of Orangi where communities have invested Rs 206 million in internal development. The total number of households in these settlements is 77,859. In addition, it has been used in 1,821 lanes in villages containing 14,011 households at a cost of Rs 378 million and in 7,280 lanes in Orangi containing 180,636 houses, where people have invested Rs 168 million for internal development. Almost all social organizers in all the OPP-RTI advice projects have been activists from the community.

All of the objections of the detractors and the CTA were dismissed by Akhtar Hameed Khan and the project went ahead. After four months in Orangi, the CTA wrote (Hasan, [2010](#)) to the BCCI “clearly there are two apparently irreconcilable approaches to project execution. One, open ended, exploratory, and evolutionary with emphasis on sociological particularities, unconstrained by time and cost—and the other, target-oriented, with a professional and technical focus.” The CTA also stated that there should be no doubt that the UNCHS was uniquely equipped “to provide specialized support in undertaking large scale projects in low income urban areas.” As a result, Orangi was divided into two sections: one where the UNCHS project, named the Community Development Project (CDP), would be carried out under UNCH’s administrative control and the other where the OPP would function under Akhtar Hameed Khan.

In 1989, after six years, the CDP had developed 36 lanes, whereas in the same period, the OPP was able to develop sanitation in over 4,000 lanes covering 70,000 houses. This achievement was noted by government policymakers, the media, and academia and had a profound impact on their thinking (to be discussed later), which survives to this day.

### **The Component-Sharing Model and Its Advocacy**

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By 1983 the OPP had clearly established a conception of its sanitation model. It stated that sanitation consisted of four levels:

1. Sanitary latrine in the home.
2. An underground sewer in the lane.
3. A collector sewer in the neighborhood connecting the system to a disposal point.

These three on-site items were termed “internal development” by the OPP, and they were to be built and financed by the lane residents themselves with advice from the OPP.

4. Long collector sewers, trunk sewers, and treatment plants were the responsibility of the government. The OPP termed this work external development, which was to be financed by the government.

This model, which has come to be known as the component-sharing model, as opposed to the cost-sharing model, has been adopted by the Asian Development Bank (ADB), by United Nations agencies, government organizations, the federal government’s sanitation policy, and various NGO and private-sector projects.

Between 1983 and 1987, OPP’s work expanded not only within Orangi but also supported community organizations outside of Orangi. Many linkages were formed as a result. AH was a visiting teacher at the department of architecture and planning at Dawood University, and he was able to formally involve his students with the work in Orangi. In 1983, Perween Rehman (future director of the OPP) joined the organization and also started to teach at Dawood University. This created a number of professionals who, in the early 21st century, have become important in the development and academic fields in Pakistan and promote OPP principles.<sup>1</sup>

Linkages with the National Institute of Public Administration (NIPA) where government officials are trained were also created and regular lectures were delivered to them by Akhtar Hameed Khan and AH. The pupils at NIPA were also required to visit Orangi, see the work, and talk to the residents. Later on, a number of these bureaucrats supported OPP programs both in Orangi and in other locations in Pakistan.<sup>2</sup>

Journalists were invited to visit Orangi and encouraged to write on conditions in *katchi abadis*. Akhtar Hameed Khan and AH also visited newspaper editors to explain how relevant the OPP methodology was to the Pakistan situation. Experts from multilateral and bilateral development agencies also visited the project, as did academics from other countries along with their students.<sup>3</sup>

During this period, the OPP also launched a housing and health program and a development plan for Karachi’s rural areas. It also had a rehabilitation and conflict resolution program for healing the wounds of ethnic riots that had taken place in Orangi between the Pathans and the “Mahajirs” in 1986. Because of these initiatives, the OPP’s links within Orangi and government institutions strengthened, and this helped the OPP to expand more quickly than it

would have otherwise. A program of helping to build cooperatives of entrepreneurs, workers, and producers was also initiated and was covered by the media. This led to linking up Orangi's small-scale manufacturers, especially in the textile industry, with high-end garment designers and manufacturers.

As a result, the OPP became an important source of information for students, journalists, researchers, and local body organizations regarding political and social conditions in *katchi abadis* and for studying political trends and economic conditions.

In 1988, the OPP was upgraded into five independent institutions: (a) the OPP-RTI, which deals with sanitation, housing, education, training, research, documentation, and advocacy; (b) the Orangi Charitable Trust (OCT), which operates a micro-credit programme; (c) Karachi Health and Social Development Association, which runs a health programme in Orangi; (d) the Rural Development Foundation, which carries out agriculture-related research and extension; and (e) the OPP Society, which channelizes the funds received from the Infaq Foundation to these organizations. This article covers the work of the OPP-RTI.

### **Replication With Communities (1988–2010)**

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Initially, OPP-RTI attempted to support communities by doing most of the technical and supervision work by itself. It soon realized that this was not possible unless it opened an office in every project site. As a result, it was decided to train communities to map, estimate, and supervise their own projects. The method followed is given in Table 1.

**Table 1. Strategy for CBO/NGO Support for Sanitation Projects**

1. CBO/NGO or community activists contact the OPP-RTI for support.
2. OPP-RTI invites them for orientation to the OPP-RTI office in Karachi or directs them to one of its partners.
3. After orientation CBO/activists convince their community to adopt the program.
4. They create a team of a social organizer and a technical person who are trained at the OPP-RTI and/or on-site in their settlements through visits by the OPP-RTI staff.
5. The training is in surveying, mapping, estimating, construction supervision, documentation, and accounts.
6. Training does not have a specific period. It continues throughout the life of the project.
7. OPP-RTI arranges financial support for the team and related expenses through donors.

Initially, this support is about Rs 200,000 (US\$2,500) per year for administrative and extension purposes. The number of persons in the team varies from three to eight.

8. Invariably the CBO/NGO comes into contact with local government departments as its work expands.

9. When that happens local government representatives are invited OPP-RTI for orientation.

10. If they are convinced, they send their staff for training; neighborhood settlements contact the CBO/NGO for replicating program.

*Note.* CBO = community-based organization; NGO = nongovernmental organization; OPP-RTI = Orangi Pilot Project Research Training Institute.

*Source.* Hasan (2015).

What helped the expansion of the programme was the establishment of the Community Development Network in 2002, which consists of all the member organizations working with the OPP-RTI and the Orangi Charitable Trust. It also contains groups working with the OPP partner organizations. The network meets every three months at a different project location, and strong ties have developed between them that are independent of the RTI.

After Akhtar Hameed Khan's death in 1999, an annual Akhtar Hameed Khan forum was also initiated. This forum is held in Karachi, and its participants include groups from all over Pakistan. Here they are able to meet public and local body representatives from their own areas and establish working relationships with them.

In 2006, AH was asked by the government of Pakistan to prepare a sanitation policy for the federal government. In the policy, the component-sharing model was adopted both for formal and informal settlements. During this period, AH was also involved in the formulation of the Pakistan government's housing policy and was the chair of the federal government's Task Force on Urban Development. The OPP model has been promoted in both documents. The model has been adopted mainly in the Punjab in the Changa Paani project (Good Water project), and in Bahiwal town, and Islamabad, the federal capital. There have been no other adoptions.

Small funds for support to partner organizations for administrative and logistical overheads were provided by Water Aid from 1995 until 2016. See Appendix 1: List of Water Aid Partners for details about these organizations. The OPP-RTI also developed a mapping unit whose documentation of Karachi's *katchi abadis* and natural drainage system laid the basis for the Local Government's S-3 sanitation project for the whole of Karachi. The S-3 model

consists of converting Karachi's natural storm drain into which sewage discharges into box trunks with treatment plants at the end. This is being implemented in Karachi and has been adopted in other cities in Pakistan as well.

Meanwhile, the OPP model of component-sharing was accepted by a number of government and international agency programs. A list of these is given in Table 2.

**Table 2. Government/International Agency Projects That Adopted the Component Sharing Model with the OPP as Trainer/Advisor**

ADB supported KMC *katchi abadi* development program 1989-1994, established a long term relationship with the OPP-RTI.

UNICEF Urban Basic Services in Sukkur 1990-1994, after the termination of the project the communities kept in touch and were assisted by the OPP-RTI to continue the upgrading of their settlements.

World Bank-Swiss Development Cooperation 1990-1994.

Sindh *Katchi Abadi* Authority 1991-2003 (still continues but in theory only), regularizing and upgrading the province's *katchi abadis* and training its engineers and administrators.

Punjab *Katchi Abadi* and Urban Improvement Directorate 1998-2008. The policy was adopted as a result of the influence of the Sindh *Katchi Abadi* Authority.

UNDP Program for Urban Development 1998. Adopted the OPP-RTI programme for 3 Punjab intermediate cities. The programme was very successful but was discontinued in 2002. However, it continued as an NGO created by the persons who had worked with it.

- ADB funded South Punjab Basic Urban Services Programme (2001).

*Note.* ADB = Asian Development Bank; OPP-RTI = Orangi Pilot Project Research Training Institute; UNDP = United Nations Development Program.

*Source.* Hasan (2010).

The OPP-RTI model resulted in reducing costs in comparison with formal planning, and its work with the KWSB and KMC on the ADB-funded *katchi abadi* development programme showed that development could take place without foreign funding, as shown in Table 3.

**Table 3. Baldia–Orangi Comparison**

<b>Item</b>	<b>Baldia</b>	<b>Orangi</b>
Government investment in Pakistan rupees	400,000,000	256,200,000
Houses served	5,000	100,000 (plus)
Government investment per household in Pakistan rupees	80,000	2,562
Market value of people’s investment utilized by the plan in Pakistan rupees	Nil	700,000,000

The ADB-funded Water and Sanitation Project PAK-794 was also implemented in Baldia and Orangi. In Baldia, the conventional pattern of development was followed whereas in Orangi the OPP’s component-sharing model was followed. The difference in cost showed that Akhtar Hameed Khan’s belief that development could take place without foreign loans was possible.

### **Perween Rehman as Director**

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After Akhtar Hameed Khan’s death in 1999, Perween Rehman became the director of the OPP-RTI, and there was a shift in certain aspects of culture at the OPP-RTI.

Perween Rehman was born and grew up in East Pakistan until the establishment of Bangladesh. During the civil war, her family was rendered homeless and was separated from each other. Perween’s learning came from experience and observation. She graduated as an architect from Dawood University in 1983. When she joined the OPP in 1983, English was the only language she could read and write. However, she was determined to work with the poor and use her skills as an architect for the improvement of their settlements.

Between 1983 and 1987, she evolved very quickly and became friendly with the activists of Orangi and the OPP staff.

Akhtar Hameed Khan was a father figure, dictatorial in many ways as a teacher. Perween Rehman was young and always tried to establish a consensus in decision-making, involving everyone in the OPP-RTI. She was also very close to the personal issues of the people with

whom she worked. Her charisma attracted young people, especially women, from all over Pakistan. She felt very deeply for the sufferings of the low-income groups with whom she worked. She also disliked the pomp and show of donor agencies and NGOs and their projects. She was reluctant to travel abroad unless the OPP-RTI could gain something from it. In short, Akhtar Hameed Khan's legacy of frugality and austerity was kept alive.

Perween Rehman initiated two programs that shifted the priorities from Orangi to other areas. The first of these programs was the Secure Housing Support Programme. In the neighborhood of Orangi, old goths (villages) were being bulldozed by land-hungry formal and informal developers, and residents' lands were being confiscated. Through the mapping unit she had developed, the OPP-RTI identified that there were 2,173 goths in Karachi and that there was a programme through which they could be regularized. RTI also identified that 1,195 goths had actually become urbanized (Hasan, [2010](#)).

The requirements for being regularized were complex and required maps and various documents that the goth population could not develop. This work was undertaken by the OPP-RTI, and facilitating the process of regularization was supported by a Karachi senator belonging to the ruling PPP. Once a goth was regularized, the OPP-RTI developed external sewage and water infrastructure proposals, which were then funded by local government agencies. Other OPP-RTI programmes were also introduced. As a result, according to Anwar Rashid, the director of the OCT, 156 goths were regularized and the regularization of 77 was in process in 2013 when Perween Rehman was assassinated. According to media reports, after her assassination, the remaining 77 goths were not regularized.

The other programme that she initiated was the flood rehabilitation programme. Floods had a major influence on her thinking. She saw the terrible poverty of the rural areas and came to the conclusion that the people of Orangi were living in a paradise, and that the real fight had to be against rural poverty. As a result, a major programme was launched to provide roofs, hand pumps, and medicines and initiate schools in the flood-affected rural areas. A programme provided support to 45 existing partners in two cities and 33 towns and roofing to 30,324 homes in 2,215 villages. Thirty-two schools were also established in villages. The scale was enormous.

The director also decided that the OPP-RTI would not attend any international agency's or government of Pakistan's seminars unless they were of relevance to OPP-RTI work. As such, the OPP-RTI disappeared from many events that it had participated in previously. The

director also decided that there would be no media coverage for publicity purposes but only for advocacy backed by lower income groups that OPP-RTI had organized. Work in Orangi continued on a routine basis, and no major new initiatives were taken. However, post-flood she did undertake two extremely important reports that exposed the myths that the media and government agencies had woven about water in Karachi. In this connection, she wrote an important paper on water, and in another paper she identified the role of a mafia-like informal water supply process. During her research on the water mafia, she was also threatened by them.

The shift was also accompanied by a programme for establishing village development organizations (VDOs) in the area where flood relief and rehabilitation had taken place. The VDO programme did not function very well, and very few VDOs survived, so the Deh Development Programme was initiated. This consisted of bringing together 50 villages under a *deh* (a unit of the revenue department usually containing 10 to 12 villages). Under this programme, 50 villages were chosen and their assets, land ownership, nature of tenure, livelihood, and physical and social infrastructure were all documented. The plan was to develop water, sanitation, economic improvement, and environmental sustainability. Both the OPP-RTI and the OCT worked together on this programme. For health, education, and related programmes, it was decided to link up with NGOs who had this expertise. In March 2013, Perween Rehman was assassinated, and as a result, major changes took place in the OPP institutions, which put pressure on the OPP-RTI to close down its operations.

### **Perween Rehman's Assassination and Its Repercussions**

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Perween Rehman's assassination was followed by the assassination of a community activist who worked closely with the OPP-RTI and also with the OCT. An attempt on the life of Saleem Aleemuddin, then acting director of the OPP-RTI, was also made. As a result, it was decided to move the OPP-RTI out of Orangi in November 2014 and establish it in the city center in part of the offices of OPP's partner organization, the Urban Resource Center. The board members of the OPP-RTI and its staff who were pursuing Perween Rehman's assassination case in court were also threatened. A lead role to keep the OPP intact at this time was played by Perween Rehman's sister, Aquila Ismail, and she also became a source of strength to the members of the organization.

The OPP-OCT refused to move out of the Orangi offices because they were of the opinion that if they moved, the OPP would never be able to come back to its base in Orangi. The assassination of Perween had many repercussions on the functioning and culture of the OPP, including

1. The staff lost a sense of belonging to the organization.
2. Consensus-making became difficult.
3. There was a feeling of physical insecurity and also insecurity about the future.
4. Work sufferlogistics that had to be managed, as much of the staff lived in Orangi.
5. The Deh Development Programme could not be pursued.
6. The mapping for the secure housing programme, which tried to map the larger developments in Karachi, became limited to mapping the goth from where an application was received.
7. Partners and students stopped coming to Orangi for security reasons, as did representatives of international agencies.
8. OPP-RTI relations with the Orangi communities started to be adversely affected.

In January 2016, the OPP-RTI returned to its Orangi offices, but fear persisted. Anwar Rashid, the head of the OCT, who had worked with the OPP since 1983, and Perween's sister, who was pursuing Perween's assassination case in the Supreme Court, were able to overcome the insecurity over a short period of time. Contacts with the government were reinitiated and links with partners reestablished. However, during this period of uncertainty, the Akhtar Hameed Forums were held and so were the CDN meetings, although with much less participation from groups and communities.

### **OPP-RTI—Post-Perween Rehman's Assassination**

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If one looks at the work of the OPP and as envisaged by Akhtar Hameed Khan, a number of principles emerge:

1. Populist bias: For Akhtar Hameed Khan, populist bias meant not only giving precedent to the needs of low-income communities but also granting their thinking more importance than that of government agencies and professionals. It also meant that project offices and the manner of documentation should reflect the culture of the low-income groups with whom one was working. This bias still exists in the function of all OPP institutions. It is deeply

ingrained and is also a part of the culture of OPP's partner organizations, even though some of them have emerged out of government and/or bilateral and multilateral development agencies such as the ADB-funded water and sanitation project, Pak-794, in Baldia and Orangi; the local government S-3 sanitation project for Karachi; the UNCHS Urban Basic Services programme for Sukkur; the World Bank-Swiss Development Cooperation Water and Sanitation programme in Hyderabad; the ADB-supported Southern Punjab Basic Urban Services Programme; and the UNDP Programme for the Improvement of Livelihoods in Urban Settlements (Punjab).

2. Informed public: The creation of an informed public was created through contacts with the media, academia, civil society contacts, and people and organizations who were interested in development work. They were requested to participate in OPP's various events and, similarly, OPP participated in their events. Based on the author's conversation with OCT Director Anwar Rashid, these linkages suffered after Perween's assassination but have been reestablished.

3. Affordable technology: This was developed in 1981 and is still used. No new research into this has been undertaken except for the development of innovative disposal systems for sewage in the last 10 years.

4. Linkages with policymakers and bureaucrats: These have been reduced considerably. The OPP-RTI staff and board members no longer lecture at the Staff College or the National Institute of Public Administration as they used to do previously, except for AH, who is officially no longer a part of the OPP-RTI. However, the Orangi model remains a part of the curriculum of these institutions, and the students have to visit the OPP during their course. The visits have become hurried and very short, and the OPP staff thinks that with the time given to them, they are not worth the effort. Linkages with government officials and policymakers have led to the inclusion of the OPP model in the government's five-year plans and short- and long-term vision for Pakistan. It has also led to the OPP model being made a part of the sanitation policy of the federal government. In addition, OPP-RTI's link with the Sindh *Katchi Abadi* Authority (SKAA) were also the result of linkages with an important bureaucrat and other politicians.

5. Being a part of the global debate on development: This was something that Akhtar Hameed Khan considered important, because without being a part of it, he felt that the OPP would suffocate with narcissism. Experts and academics from abroad continuously visited Orangi, sometimes with their students, because Orangi was discussed in academic journals through articles written by those researchers who had visited and also by Akhtar Hameed

Khan and AH. This link had become nonexistent. However, it has been revived by a film made by the OPP. This film, titled *The Rebel Optimist* (Omar, [2016](#)), is on the life and work of Perween Rahman and has been exhibited at various universities, workshops, and conferences in the West and also locally. In 2018, it was shown in workshops at three universities in Norway. The film has been a source of great inspiration to the younger generation both locally and abroad.

These problems are being tackled, and a vision for the future based very much on the aforementioned principles is being envisioned. Close working relationships have been established with academic institutions whose students not only visit but also intern with the OPP institutions. Their number is increasing. A sense of security has been restored, and except for three persons the entire staff of the OPP institutions has continued working with the OPP-RTI. Work on the revival of the Deh Development Programme has been initiated, and the Secure Housing Support Programme is continuing, although the state's interest in regularizing goths has declined, perhaps due to pressure from the real estate lobby. A large union council of 1,430 homes in Islamabad is partnering with OPP-RTI for building its sewage and water-supply system. This partnership began in March 2018. The new government wants the OPP-RTI to develop 18 Islamabad informal settlements on the OPP-RTI component-sharing model. If this works out, given its reputation of transparency and honesty, the knowledge and expertise that it possesses, and the partners that it has all over Pakistan (in spite of the pressures it faces after Perween's murder), the OPP-RTI's work will continue.

### **The OPP's Impact on Development Concepts and Practices**

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Given the OPP institution's reputation of transparency and honesty along with the tested knowledge and expertise that it possesses and the partners it has all over Pakistan, the OPP-RTI is on its way to recovery. The OPP-RTI has had a major impact on the theory and practice of development in Pakistan:

1. Public awareness: The OPP put the *katchi abadis* on the development map of Pakistan. Before that the *katchi abadis* were considered as problem areas of crime and violence. Today, they are looked upon as consisting of human beings who are indispensable to the city's economic and social life and who need better living conditions. The OPP-RTI's mapping of the settlements; development and analysis of statistics; and development of profiles of

activists, entrepreneurs, and schoolteachers have all fed into the electronic media as special programmes and have influenced the dramas on TV channels. As a result of the OPP work, a very strong anti-eviction lobby has also emerged, making evictions increasingly difficult.

2. On policy: In five-year plan documents, housing policy, sanitation policy, and *katchi abadi* policies (in the formation of which the OPP was involved), the OPP-RTI model of development has been proposed and is also being practiced through various government programmes such as Saaf Paani in the Punjab and by the *katchi abadi* directorate in the Punjab and the SKAA in Sindh. Many government officials who have associated with the OPP have gone on to develop and/or support programmes that use the OPP principles and methodology.

3. On academia: AH and Perween Rehman both have taught at Dawood University, NED University, and Karachi University; more recently, AH has taught at Sir Syed University. Dawood University students of the 1980s and 1990s are today important professionals and academics, and they promote the OPP model, its principles, and the culture that those principles promote. At NED University, almost the entire faculty of the department of architecture and planning and of the development studies department are the product of the Dawood University alumni of the 1980s and 1990s. Saleem Aleemuddin, director of the OPP's sanitation program, teaches at NED University and links his teaching with the OPP programmes. Similarly, Younus Baloch, director of the Urban Resource Center, which was created by Dawood University and OPP members, also teaches at NED University. So the culture and the development methodology of the OPP continues to be taught.

4. OPP partners: OPP-RTI has over 50 partners spread over Pakistan, and contacts with them have been maintained. Linkages had weakened because of security reasons, but they are in the process of being strengthened. Some organizations have evolved to a level where they have also become trainers for other organizations and government initiatives that follow the OPP-RTI model. Examples of these are the Hafeez Arain Motivational and Empowerment Trust, the Soan Valley Development Project, and the Uch Community Development Support Programme.

5. There are other organizations that have branched off into other work, which they are doing very successfully following the OPP culture of austerity and openness. They have helped develop their own partners whom they support with technical help and managerial guidance. Examples of these are the Akhtar Hameed Khan Memorial Trust, Rawalpindi, and the Anjuman-e-samaji-Behbood Faisalabad.

6. Foreign experts: The World Bank, ADB, and foreign experts have made a comeback with the return of security. Their demand is for all the mapping of *katchi abadis* that the OPP-RTI has carried out and desire for its participation in their work. The OPP-RTI has kept the old principle alive that they will support the work but as advisors and will not charge for it.

7. New institutions: The OPP has helped create a number of new institutions at the city level that have played a very important role in the development-related problems of Karachi.

Without the links created between professionals and communities, this very important work would never have been accomplished. This work included dealing with environmental issues related to development, equity, social justice, and the burden of foreign loans. At the same time, the OPP-RTI has also helped create Orangi-based organizations related to providing services for mapping, surveying, house improvement, house construction, and training to young people in computer related programmes on development. These organizations have become financially sustainable and have assisted the OPP in its work. A few of the prominent ones are the Urban Resource Center, Karachi (research and advocacy); the Water and Sanitation Network, Karachi (monitoring Karachi projects and their foreign loans); NGO-CBO Network, Karachi (meetings to exchange information and develop strategies to influence programmes and projects and strengthen negotiating power); the Citizens Forum on Mass Transit, Karachi (monitoring and proposing environmental alternatives).

8. OPP-RTI's clients: OPP-RTI's clients are the families in Orangi and in partner organizations the OPP-RTI works with. These are low-income families, and association of the OPP has meant an increase in their knowledge and skills (in surveying, documentation, OPP-RTI sanitation technology, and community mobilization), involvement of women in the development process, renewal of a confidence that with maps and statistics they can negotiate with government, and, above all, establishment of a vision of a future that they feel they can implement. These partner organizations are the Technical Training Resource Center (TTRC), Orangi, Karachi, and the People's Mapping Center, Orangi, Karachi. These organizations train young people in mapping, surveying, design, and supervision of buildings. Because of them, house construction and infrastructure has improved. The TTRC has also helped the OPP in surveying and supervision of its work outside of Karachi.

## The OPP's Impact on the Housing Sector of Orangi

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In 1982, the lanes that had constructed their underground sewage system requested the OPP to initiate a housing programme through which they could improve their homes. The OPP launched the programme in 1986. The OPP observed that over 70,000 housing units had been developed in Orangi without any assistance from the government. Most of these houses were of poor construction and design, but it was obvious that a process for their construction was in place.

The OPP felt that before developing any housing programme this process should be understood. The housing program followed a similar process of research and extension as the sanitation programme. In this case, research was done to better understand the major housing issues faced by residents, with the goal of being able to offer them a package of advice that would make construction cheaper yet improve the quality of their houses.

OPP's research identified that the manually manufactured cement blocks, the major construction element made at the local *thalla*, were substandard and could not carry an extra floor. Walls had cracks in them, roofs sagged, and rising dampness, and poor ventilation created health problems.

Through this research, it was also discovered that 93% of households turned to their local *thalla* for everything from supplies to design and construction services and credit. Given the key role the *thallas* played in the housing production process, it was decided that OPP's initial intervention would be to upgrade a *thalla*, mechanize its block manufacturing, introduce prefab roofing materials, and train masons in the manufacturing and use of the new technologies. This upgraded *thalla* became a demonstration for other *thallas* (Hasan, [2010](#)). Given the research findings on housing defects, the OPP team came up with new technologies that would not only result in better quality products but also achieve the overall goal of reducing cost. As part of the extension package, OPP-RTI invited *thallewalas* to visit the *thalla* who was working with the OPP. As a result, a number of *thallewalas* became acquainted with the OPP's housing program, its technology, and its methodology and within one year, 75 *thallas* had adopted the OPP model. As a result, Orangi is a major exporter of quality cement blocks to the rest of Karachi.

In addition, in 1990 OPP-RTI began to train young community members to serve as para-architects, to help fill the gap of professional advice available to the residents during construction (Hasan, [2010](#)). In 1999, two community members who were trained as para-

architects founded the Technical Training Resource Center, providing design advice, complete with drawings and estimates to Orangi residents. The Center also provides design advice for schools, clinics, and house improvements. Between 1987 and February 2008, four OPP-RTI-supported *thallas* had produced 39 million blocks worth Rs 179 million, 60% of which were sold outside of Orangi (Hasan, [2010](#)). In Orangi itself, about 2,500 houses benefited every year from the use of improved building components (OPP, [2018](#)). In order to empower the residents and improve their experience during the construction process, OPP also created extension posters and flyers, with the goal of improving the residents' knowledge about building techniques and what to expect from the *thallewalas*. Para-architects were also deployed, when necessary, to monitor the work of the *thallewalas* to see that blocks and building components were not substandard in quality. OPP's advice on ventilation and light has also been followed by a lot of house builders, improving environmental conditions within their homes.

## **Conclusion**

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The most important conclusion that emerges from the history of the OPP is that its success owes a lot to the stature and reputation of its founder, Akhtar Hameed Khan. For him, all doors in government and academic institutions were open. He could also dictate his terms and get his financiers to accept that the OPP would be an open-ended project. Orangi has changed since 1981 when OPP began. A new generation has emerged which is literate and in search of jobs. It has middle-class aspirations as a result of which young people are increasingly acquiring white-collar jobs. Single- and double-story homes are becoming four to five stories in height, and as such infrastructure requirements have changed considerably. The ethnic and political conflicts have also taken their toll and reduced government involvement in the provision of infrastructure and its management.

The OPP-RTI is fully aware of these changes and is adapting to them by expanding its training programme for young people and helping them to create local-level institutions (such as the TTRC), which could not only generate jobs but also help in designing a better physical environment.

The manner in which the leadership of the OPP is related to the Orangi staff and communities has varied depending on the person involved. However, throughout, the OPP has remained true to its founding culture of austerity and of looking at development from the eyes and

perceptions of the community. In the initial stages (between 1980 and 1987), the OPP reached out to government agencies and relevant bureaucrats and explained its model. However, today it is government and international agencies who reach out to the OPP-RTI. This is because the OPP-RTI has considerable material in the shape of maps and literature, not only about Orangi but the whole of Karachi. It also has links with local communities. Such maps, literature, and links are not available anywhere except the OPP-RTI. Whenever a change in government takes place, new plans are developed for Karachi and at that moment, the government approaches the OPP-RTI for advice and documents. This happened again after the formation of the new government in August 2018.

From the very beginning, Akhtar Hameed Khan was sure that the OPP would involve itself in other issues beyond sanitation. He had identified four concerns: sanitation, housing, health, and education. However, he waited for the right moment to introduce these programmes, which he identified intuitively.

The OPP has survived the onslaught it faced. One of the major reasons for its survival is that the staff did not abandon it because they had been taught to feel that the organization belonged to them. In addition, they had developed at the OPP from unskilled to skilled technicians, surveyors, and documenters, almost all of them belonging to Orangi. The survival also had a lot to do with Anwar Rashid, the OCT director, who was not willing to see his 30-year work and involvement be washed out in spite of a constant threat to his life. A major factor in the survival of the OPP was also the pursuing of the Perween Rehman assassination case, which was done by her sister Aquila. This kept the OPP alive in the press and kept the interest of the public in the media. What also kept it alive was its reputation, both internationally and nationally, and the support it received not only from the media but also from civil society organizations and prominent citizens of Karachi. The OPP's reputation was a result of the involvement of the media, academia, and civil society through visits to the project and the presentation of its work at various meetings, seminars, and conferences.

The concept of the component-sharing model is well established and has been adopted by the ADB for its Southern Punjab projects and the Changa Paani project in Lahore. In Karachi, the city government and the KWSB have also adopted the model of converting *nalas* into box trunks.

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## Appendix 1. List of Water Aid Partners

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1. Community Development Support Programme, Uch Sharif
2. Organization Plan Environment, Gujranwala
3. Hafeez Arain Memorial Empowerment Trust, Bahawalpur
4. Seher Development Organization, Gujranwala
5. Organization for Health and Development, Jampur
6. Nawan Sojhlani Foundation, Jampur
7. Sanghar Welfare Development Support Organization, Sanghar
8. Rural Area Welfare Development Organization, Sanghar
9. Watan Welfare Organization, Nawabshah
10. Sindh Rural Development Organization, Umerkot
11. Zehra Humanitarian Organization, Sanghar
12. Bhagwan Development Organization, Battagram
13. Technical Training Resource Center, Karachi
14. Tameer Technical Center, Karachi
15. Peoples Mapping Center, Karachi
16. Anjuman e Samaaji Behbood, Dhuddiwala
17. Akhtar Hameed Khan Memorial Trust, Rawalpindi
18. Environmental Protection Society, Swat
19. Organization for Participatory Development, Gujranwala

20. Lodhran Pilot Project, Lodhran
21. Research and Awareness for Community Empowerment, Lodhran/Kehror
22. Gender Unity for Integrated Development, Multan/Basti Malook
23. Society for Health and Environment Development, Yazman
24. Youth Commission for Human Rights, Lahore

## Notes

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- 1. Some of them are Dr. Noman Ahmed, dean of NED University, Karachi; Fazal Noor, head of the Department of Architecture and Planning, Sir Syed University, Karachi; Rabia Siddiqui, head of the Department of Architecture and Planning, Dawood University, Karachi; Iftikhar Kaimkhani, director of the Masterplan Group of Offices, Karachi Development Authority; Mohammed Younus, director of the Urban Resource Center, Karachi.
- 2. Some of these bureaucrats are Tasneem Siddiqui, father of the Incremental Housing Programme (Khuda Ki Basti) whose infrastructure development followed the OPP model, and Dr. Shujaat Ali, DC Faisalabad in 1994, who supported the OPP partner Anjuman-e-Falah-o-Behbood and later on the important NGO project, Changa Pani. Currently, he is the dean of the National Institute of Planning where mid-level and senior bureaucrats are trained. He has made the study and experience of the OPP model compulsory. Irfan Ali, DC West in Orangi, Karachi in 1992–1996, helped the OPP in working with the ADB and supporting the OPP model during that period.
- 3. Prominent among them are Professor John Pickford, professor emeritus, University of Loughborough; David Satterwaite and Diana Mitlin of the International Institute for Environment and Development, U.K.; Jorge Anzorina of Selavip; Kirtee Shah, director Ahmedabad Study Action Group; Somsook Boonyabancha, president of the Asian Coalition for Housing Rights.