

# NATURAL RESOURCE MANAGEMENT

## PERI URBAN INTERFACE

### *An Executive Summary*

#### Why is the peri-urban important?

- According to current estimates, in the next 25 years the world's population will increase by **1.7 billion**. Almost all of this growth will be in less developed countries, like India.
- An estimated 98% of this new population growth will be urban, about one-third of which will be due to migration from rural areas to the fringes of existing cities, namely the **peri-urban interface (PUI)**.
- Peri-urban institutions such as industrial estates, poultry farms, IT parks, and airports, to name a few, will never be in the inner city. They will always be outside the city, but catering to urban needs. The peri-urban will always exist around cities, and, with its distinctive urban and rural features, it *must* exist.
- Urban areas exert an environmental burden on peri-urban areas, such as pollution from traffic, municipal waste and sewage, and extraction of resources such as bricks, stones, fuel wood and timber.
- If peri-urban growth goes unplanned it will be enormously expensive to rectify in the future. Therefore, urban authorities should take on the responsibility of initiating the recommendations contained in this brief



#### Natural resource management

The peri-urban is characterized by rapid degradation of natural resources because it caters to urban demand and must deal with the waste generated by the city. The results of the disregard for peri-urban natural resources can be seen in today's headlines. The massive flooding that Mumbai, Bangalore, and Chennai experienced is largely the result of unplanned, indiscriminate peri-urban development on catchments so tanks can no longer absorb as much water. In Delhi, illegal, unregulated industries in peri-urban areas have experienced explosions, endangering the residential populations that surround them. Peri-urban farmers continue to depend upon natural resources for their livelihoods until they can gain a living from the urban area, but this is a gradual process. A few simple measures can be taken for effective natural resource management in the peri-urban interface.



- **Provide assistance to peri-urban farmers**  
Productive land prevents erosion, so they can better feed urban populations.
- **Promote Tree-based farming**  
Improves the natural resource base and provides farmers crops, fodder and fuel wood.
- **Preservation of common lands**  
The natural-resource-based livelihoods of the poor depend on common lands.
- **Preserve Tanks and Drainage Lines**  
Construction should be planned so tanks remain viable.
- **Increase ratio of developed to vacant land**  
If land in the city is utilized productively, there is less need to encroach into the surrounding areas.
- **Brick Kilns must be regulated**  
Valuable topsoil must be preserved.



## A Rapidly Changing World

The world as we know it will be completely transformed in our lifetime. It has been projected that by 2050 the earth's population will increase by an additional 200 to 300 crores (2-3 billion). The overwhelming proportion of this dramatic growth will be in developing countries, and two thirds of the new population will be in and around existing urban centres. Therefore these massive changes in global population will occur in localized spaces where the urban meets the rural. This means that unprecedented stresses will be placed on the lands and the people caught at the site of these rapid and dynamic changes. However, rural and urban authorities and communities have the opportunity to effectively manage these changes by focusing their efforts on the peri-urban interface.

## The Peri-Urban Interface

The peri-urban interface (PUI) is the space where the urban meets the rural. In a series of projects aiming to understand how to best manage natural resources in the peri-urban interface, funded by the UK Department for International Development (DFID), it was found that the peri-urban interface cannot be defined as a geographical location with fixed physical features such as distance from the city or housing density. Rather, it refers to a gradient between the urban and rural that can only be comprehended by an understanding of the dynamics of rural-urban interaction, which are multi-dimensional and diverse.

## Peri-Urban Features

- Former agricultural labourers work in the city.
- Sewage and other pollutants from the city affect the surrounding land and water bodies.
- Timber, crops, and other natural resources are used to satisfy urban demand.

These are only a few of the effects caused by changing rural-urban links.

## Challenges for the PUI

The PUI is where many of the changes in urban-rural flows materialize, leading to **problems** and **opportunities** not only for peri-urban communities but also for the sustainable development of adjacent rural and urban systems.

The poor of the PUI are the most vulnerable to these problems and the least able to capitalise on these opportunities. The livelihoods of the PUI poor depend heavily on natural resources, and their ability to cope is directly related to their ability to access and control natural resources and the extent to which urban and rural authorities address their concerns.

The following pages outline some of the unique challenges of the peri-urban interface and possible solutions.





## CHALLENGE 1

### DEGRADATION OF NATURAL RESOURCES

The lives of those living in the PUI are intertwined with the land. But as the city encroaches on their space, this relationship is thrown off balance. The environment suffers because of unplanned, indiscriminate, and rampant development, which leaves water tanks dry, lands fallow, and nutrient-rich-topsoil baked into bricks for the construction of buildings. Urban opportunities attract people away from agriculture and from other land-based activities. Consequent neglect of natural resources together with the generation of urban waste leads to the deterioration of the natural resource base.



## SOLUTION 1

### POLICIES FOR SUSTAINABLE NATURAL RESOURCE MANAGEMENT

The growth of cities can be accomplished without permanently damaging the lands and the water resources if a few simple policies are implemented:

#### **Provide assistance to farmers**

In the PUI, agricultural labour is always scarce because people commute to the city for higher wages. The result is that farmers find it difficult to maintain a living from their land and many simply decide to give up, thus leaving the land fallow. Barren lands can be devastating as topsoil gets eroded during heavy rains and silts water tanks. Government should partner with agricultural institutions to develop new and innovative ways for farmers to both maintain their lands and reap higher yields. Integrated pest management (IPM), vermicomposting, and other initiatives have proven to be effective and these and similar initiatives should be introduced. The majority of land in the PUI is in private hands, so concerted efforts must be made with the landed to promote responsible farming.

#### **Preservation of common lands**

Common lands are vitally important for the livelihoods of the landless. Common lands must be preserved because the landless poor use these lands for fodder for their livestock, fuel, and other purposes. Rather than restricting access to the common lands, the government should hand over the management of the land to the poor. The government should also support tree-planting initiatives.



## Box 1: The BAIF Model Tree Based Farming System

The synergy between different crops, animals and trees makes farming systems sustainable. Trees are an important link in the energy cycle of the system because they yield fodder, fuel, fruit, timber and biomass for manure.

Tree based farming, or “wadi”, developed by more than fifty thousand small and marginal farmers associated with BAIF Development Research Foundation, integrates agriculture, horticulture and forestry. Farmers develop a single acre of land along the following lines:

- Live hedge fence around the farm
- Soil and water conservation by physical and live bunding across the slope
- Harvesting of runoff water in farm ponds
- Planting horticulture plants (40 plants per acre) for diversification
- Planting of 500 forestry plants of about 15 species per acre

Entire communities work together on common lands and on each other’s lands to achieve this.

Within three to four years the following impacts can be seen:

- Availability of fodder makes farmers confident enough to take care of more and better livestock
- Availability of biomass and dung results in more and better manure
- Better manuring results in better crops and decreased import of inputs.

Source: BAIF Development Research Foundation



### Promote tree-based farming

“Wadi” is a revolutionary new method of tree-based farming that creates a sustainable system of cultivation of diverse crops within as little as one acre of land (*see box 1*). Trees improve the quality of the air and the land, water retention of the soil, and provide fodder for animals. Horticulture within the fields also provides even the smallest farmers with an incentive to continue to earn their living from the land.

### Preserve tanks and drainage lines

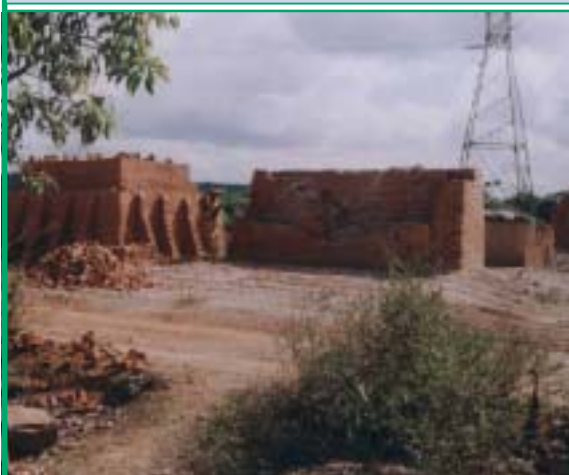
There are several villages with viable water tanks, which are part of the city. However, these tanks dry up when construction develops on the surrounding catchments. Water tanks should be studied and drainage lines identified before any construction is permitted. Indiscriminate construction must be curtailed if the life of water bodies is to remain intact.

### Increase ratio of developed to vacant land

Speculators target peri-urban land because they recognize that when it becomes part of the city, its value will increase. One negative effect of speculation is that productive lands are left fallow. Currently a law, which exists in many cities, requires that land must be used for the purpose for which it was purchased within a certain timeframe, or else it must be developed for natural resources, for example, by planting trees. This law must be enacted and enforced everywhere so land can be used for productive purposes.

### Brick kilns must be regulated

Brick kilns use valuable topsoil, which is essential for growing crops. When the topsoil has been baked into bricks, the land loses nutrients and agricultural productivity decreases dramatically. Many farmers are lured into using their lands for the short-term gains that brick production can provide and are unaware of the long-term effects. Awareness should be built on the risks and consequences of brick making so farmers can make informed decisions. Additionally, brick kilns should be allowed only on non-cultivable land.







## CHALLENGE 2 DIVERSIFIED OR VANISHING LIVELIHOODS?

Most people living in rural villages have had the same livelihoods for their entire lives. In fact, many people carry on the same livelihoods over several generations. But those living in the PUI undergo dramatic alterations in their way of life remarkably quickly due to the rapid growth of cities. Typically the poorest suffer disproportionately from these changes because they have the least resources and the fewest connections.

## SOLUTION 2 CITY-SPONSORED LIVELIHOOD TRAINING

With such deeply rooted occupations, it is clear that new skills cannot simply be imparted in a day. Rather, continuous livelihood training is required to give people the tools to cope with the effects of urbanization as well as with the wider changes affecting farming activities.

Every community will be different, and therefore each requires different and creative solutions. Given the speed of change and the variety of driving forces that affect livelihood strategies, the peri-urban poor should be assisted in developing the necessary skills to react flexibly and proactively to such changes. As cities grow, municipal corporations should shoulder this responsibility.

In many peri-urban villages, livestock has become an increasingly significant livelihood option because cities look to peri-urban areas to supply their dairy needs. Thus vaccination camps, basic veterinary training, fodder planting, technical skills, and better access to urban markets are needed for livestock owners. Livestock owners should be

supported to produce and market related products, such as curd, butter, or ghee that have higher prices and better profit margins.

This is only one example. Uniform livelihood policies are not appropriate to handle the immense diversity of the PUI. Thus government initiatives should be defined and driven by peri-urban communities.



## CHALLENGE 3

### THE INSTITUTIONAL DIVIDE

#### RURAL REPRESENTATION

A village that falls under rural jurisdiction has access to the Panchayat system of representation. People have ready access to their Gram Panchayat representative, who is most likely a peer living close by. Gram Panchayat representatives can in turn raise the concerns of their constituents in the Taluk Panchayat and the Zilla Panchayat. Through this system, individuals have a more direct voice in how funds are used locally. Furthermore, governments provide a range of rural development schemes. Funding is tailored to the needs and livelihoods of village life. However, these schemes are often designed to reach the rural poor and might fail to provide the kind of support required by the peri-urban poor, who often rely on more diversified livelihoods. In addition rural political representation can also be dominated by a strong patron-client relationship. This might affect the capacity of those traditionally marginalized to reach government institutions

#### URBAN REPRESENTATION

In contrast, when a village becomes part of a city, representation is more remote and less accessible. Those living in the outlying areas of cities have limited mobility to physically access the political institutions of the city. They certainly do not have the savvy and personal connections necessary to get the municipal corporation to address their concerns. Those living within the city limits must now pay higher taxes and are no longer eligible for rural development schemes. Furthermore, the agenda of a city often fails to include actions that can help peri-urban dwellers to enhance natural resource management. On the positive side, peri-urban villagers might have greater exposure and understanding of the political processes being shaped by agents outside the bounded location of the village. They also realize the need to pursue change through channels other than those exclusively managed and influenced by local structures.



## SOLUTION 3

### COMMUNITY EMPOWERMENT AND RURAL-URBAN COLLABORATION

The above table shows that often peri-urban dwellers find themselves under a political jurisdiction that fails to be responsive to their reality and changing circumstances. The solution to this lies in the development of formal and informal channels of collaboration between rural and urban authorities. In addition, peri-urban women and men need to have forums to define their concerns and develop ways to address them.

However, peri-urban villages are heterogeneous places with people with a wide range of incomes and abilities. In this context, the better off tend to dominate while the poor are left behind. True participation must first start with capacity building for the poor, the landless, and women (and of course those that fall under more than one of these categories). The government must focus first on the most marginalized sections of society so when the forum for participation arises, they will actually have the ability to participate on an equal footing with the other stakeholders. The peri-urban research project found that self-help group (SHG) formation is necessary to achieve this level of participation and it is the cornerstone of good governance. Local NGOs have vast experience mobilizing communities into sanghas, and the government should partner with them to bring in their expertise.





## PEOPLE SET THE AGENDA

There is no one-size-fits-all approach for dealing with the PUI, so policies and plans must be formulated with the participation of the people because they know their needs better than anyone else. If the SHGs of the peri-urban villages are strong, interventions regarding livelihoods and natural resources will take root. The people will be able to implement programs themselves, take ownership of the outcomes, and continue on the path toward sustainable change.

## Specific Guidelines for the PUI

- Villages newly absorbed within city limits should not be forced initially to pay higher urban taxes because they have no access to the advantages of infrastructure that urban citizens have. But taxes should be phased in as infrastructure develops.
- The city must recognize the existence of agriculture within its administrative boundaries. Therefore the city administration should provide development schemes for villages that are no longer eligible for rural development funds.
- Municipal bodies could establish an office of the peri-urban, where representatives from absorbed villages of a distinctly rural character are given special consideration. This office would also be responsible for the implementation of the participatory plans developed by the self-help groups in the PUI.
- Formal and informal mechanisms for collaboration between rural and urban authorities should be developed to ensure that peri-urban dwellers are not trapped within arbitrary jurisdictions. Formal mechanisms for integrated planning like the District Planning Committee (DPC) already exist, at least on paper. The DPC was conceived as a forum that would widen participation in planning beyond just the Urban Development Authorities (UDAs) to now include elected representatives, both rural and urban, as well as the line departments.

Thus, peri-urban communities can be more effectively integrated into the decision-making process through collaboration between rural and urban authorities, integrated planning, community mobilization, and separate offices and funds for the peri-urban.



# The Way Forward

The peri-urban interface is a complex set of dynamic processes, which makes it extremely challenging to manage. Organisation, planning, a focus on the poor, and a commitment to preserve and enhance natural resources are the keys to successfully adapting to the massive changes that are occurring on the fringes of our cities. By facing the challenges of the peri-urban interface with the solutions outlined above, we can ensure that people live better lives and our lands continue to survive.



This policy brief is based on nearly a decade of research on the peri-urban conducted by a multi-disciplinary team. The contact details of the team are given below. This policy brief has been published by Best Practices Foundation.



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