4

Part Four:
Management Approaches

If the risk of in-migration and associated impacts is moderate to high, or in-migration has just been recognized as an existing problem, what are your options? This section outlines proactive and reactive management approaches to project-induced in-migration, answering questions such as:

- **What can my project do during design and planning to help manage in-migration?**
- **What construction and operations phase policies and procedures would help manage in-migration and/or its impacts?**
- **What kind of environmental and social programs will help manage in-migration and/or its impacts?**
- **How will in-migration affect the need to strengthen existing programs?**
- **What kind of additional programs may be needed to manage influx and its impacts?**
- **What have projects done to manage in-migration?**

4

Introduction

This section sets out general management approaches and sector- and program-specific interventions that are available for effective management of in-migration and its impacts, including:

• Management of project-induced in-migration into the project area, which includes minimizing in-migration, managing the inflow of in-migrants, and managing the physical and social footprint of in-migration within the project area;

• Improved stakeholder engagement and monitoring; and

• Mitigation of the adverse impacts associated with in-migration.

These approaches are presented in terms of a spatial/geographical continuum, starting at the boundaries of the project's overall area of influence and moving inwards – typically from the regional to the local. Within this framework, an in-migration strategy will inevitably utilize some combination of these three approaches, depending on key factors such as the existence and location of population centers, the presence of existing service/supply centers, and means of accessing the project site, and the status of influx.

> Most measures and interventions discussed here can be implemented at any time within the project cycle, although they may be more effective and more readily accepted if implemented early.

The approaches and their component interventions are linked, and the activities implemented to minimize in-migration at the boundary of the project area are reinforced by specific actions at the core. Part 5 of this document addresses development of a strategy, selective use of the three approaches to managing in-migration, selection of component interventions, and development of an influx management plan.

The three management approaches and the interventions supporting them are presented in terms of their objectives, rather than correlated to stages of the project cycle. With the exception of measures that must be addressed during the project design stage, most measures and interventions discussed here can be implemented at any time within the project cycle, although they may be more effective and more readily accepted if implemented early.

Management through project design and early planning and implementation is more likely to address the phenomenon early on, minimizing in-migration and managing its physical and social footprint, and reducing the need for later programs addressing the impacts associated with in-migration. Although later management actions are more likely to be concerned with management of the impacts associated with in-migration, they should not ignore mitigation of ongoing in-migration and its footprint.

Managing In-migration

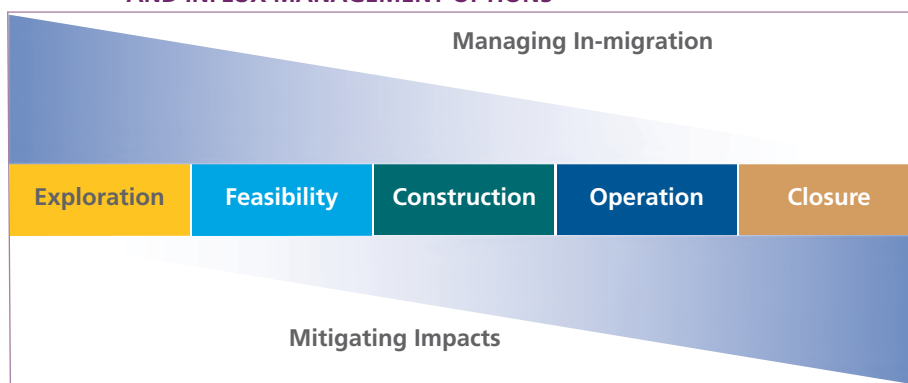| Exploration	Feasibility	Construction	Operation	Closure

Mitigating Impacts

Figure 8 illustrates the relative emphasis on project design and early planning and implementation or management of influx impacts based on when, within the project cycle, the issue is identified and addressed.

Annex 6 provides a summary of project approaches to management of in-migration from around the world.

MANAGING PROJECT-INDUCED IN-MIGRATION

Approach	Category of Intervention	Interventions
Management of project-induced in-migration	• Minimizing in-migration into the project area • Staging the inflow of migrants • Managing the migrant physical and social footprint	• Promoting regional growth • Planning access routes • Managing the initial project footprint (multi-local projects, initial project bases) • Use of buffer zones • Spatial planning, administration and resource allocation (including identification of appropriate settlement sites and creating "pull" factors) • Infrastructure, services and utilities • Planning workforce recruitment policy and management • Access control • Planning material transportation • Planning worker transportation • Planning worker housing • Planning procurement of goods and services and development of supply centers • Definition of project-affected people (PAPs), compensation, participation, and development • Building muli-stakeholder frame works and stakeholder capacity

Although managing project-induced in-migration should be an objective throughout the project life cycle, early recognition of the potential problem and a willingness to proactively manage the phenomenon has the greatest potential to minimize the phenomenon and development of induced impacts. The approach focuses on:

- Addressing the "pull" aspects of the project to deter, minimize and/or direct the flow of in-migrants, primarily by creating other economic centers or defining the location and scale of a project's economic impacts;
- Managing the inflow of in-migrants through use of staging posts and encouraging better distribution in the broader region in which the project is operating; and
- Managing the physical and social footprint of in-migrants who move into the project area.

As discussed in Part 1, all major projects have a feasibility stage during which key design decisions are made and budgets are fixed. This process often occurs ahead of the ESIA process, during which commitments to prevent, mitigate, or compensate the project's environmental and social impacts are identified. Many of the interventions described in this section are best addressed as "social design criteria" during the project feasibility phase, even if a full ESIA has not yet been completed.

PROMOTION OF REGIONAL DIVERSIFIED GROWTH STRATEGIES[1]

A project may support the development and implementation of regional growth strategies that create alternative economic opportunities distant from the project area of influence, thereby ensuring that the project does not become the sole locus of economic development and attraction. Development of such strategies requires the participation and support of many stakeholders, including national, regional, and local government, the private sector, civil society, and communities, and typically involves long lead times. Implementation of the strategy's initiatives and the time required for these initiatives to have the anticipated outcomes takes time, often lagging well behind the scheduled project construction phase. Nevertheless, investment in the development of strategic regional development plans offers the opportunity to coordinate the contributions of multiple private sector players and provide a framework for pre-empting the development of cumulative impacts.

Even if no regional growth strategy exists, direct contribution to the promotion and development of multiple regional economic poles should still be considered, because it may still reduce medium-to-long-term project costs. Contributions to the development of public infrastructure, services, and utilities outside of the project requirements may stimulate economic development, while innovative approaches to ensuring that a broader population is able to access and benefit from infrastructure, services, and utilities that are developed in support of the project may address the discrepancies between the project, the project area, and more distant locations.

---

1 Both public sector and private sector actors whose activities are significantly affected by project-induced in-migration are also referred to the World Bank *World Development Report 2009: Reshaping Economic Geography.* The WDR 2009 focuses on the development-induced concentration of economic activity and the substantial disparities in welfare that can emerge between rural and urban areas, between leading and lagging regions within countries, and between countries. With a focus on three spatial dimensions of economic activity and household welfare (i.e., rising density, falling distance, and persisting division) the WDR highlights the dimensions and significance of spatial forces that shape economic development and recommends policies to facilitate the spatial transformations necessary to sustain economic growth, reduce disparities in welfare, and reduce poverty.

PLANNING ACCESS ROUTES

Projects involving the development of major new access routes (primarily roads, but also railways, wharves/jetties, airstrips, and pipelines) should evaluate the potential role of such access routes in facilitating access and concentrating in-migrant populations both along the route and within the project area of influence. Improvements in land-based access routes that transit through areas characterized by low populations and abundant natural resources may facilitate in-migration. A particularly acute and common example is the development of roads and rails from urban centers to a project. The creation of such direct access to the project defines the means and the location of in-migration and is typically associated with development of major squatter settlements on the project door step.

Where development of new transport infrastructure is an integral aspect of project operations and viability, the project, together with government, should consider more strategic development of transport infrastructure, for example by developing multiple staging points, or creating and using a combination of public and private roads. Appropriate mitigation measures that address the management of spontaneous in-migration and settlement along the transport route will need to be developed at the outset, e.g. ensuring inclusion and enforcement of an adequate right of way to prevent the development of roadside dwellings, shops, etc.

USE OF BUFFER ZONES

A project may elect to include buffer zones in its design, spatially separating the project from existing and migrant populations. Such buffer zones may exist as exclusion zones into which entry is forbidden or as zones with designated (and restricted) occupation and land use rights. Use of buffer zones may pre-empt the development of fence-line settlements proximate to construction and operations and, together with appropriate workforce recruitment policies, may encourage settlement in the nearest villages and towns.

INITIAL PROJECT FOOTPRINT

The start-up phase of all projects involves the establishment of a project footprint. This footprint, which is typically associated with the development of a logistical base for the project, may be located on- or off-site, may be temporary or permanent, and may be relocated on several occasions during start-up and initial construction activities. Decisions such as whether to operate one or multiple offices, and whether to locate and operate a logistical base on the project site, in the nearest town with adequate infrastructure, or in the nearest center that can function as a service center for the project, will determine the target destination of potential in-migrants.

Where a project makes use of multiple temporary logistical bases, their opening and closure is analogous to generating small-scale boom/bust cycles of project development and closure. While present, the base provides a temporary economic boom through employment and procurement of goods and services, and investment in the development of infrastructure.

EXAMPLE: OFFSHORE INLAND APPROACH

The upstream section of the Camisea gas extraction project, operated by a consortium led by Pluspetrol S.A., is located in a biodiversity-rich region of the southeastern Peruvian Amazon known as the Lower Urubamba. The project is in close proximity to 22 indigenous communities and the Kugapakori-Nahua Territorial Reserve for voluntarily isolated indigenous peoples. Given its location, minimizing environmental and social impacts has been a priority for the project.

The Camisea Project has been designed based on a "minimal impact policy" that includes the adoption of an "offshore inland operations" approach in order to minimize the need to open access roads and discourage unplanned population influx to the Lower Urubamba region. Instead of opening access roads, air and river transportation of material, equipment, and personnel has been maximized using river barges and helicopters. In addition to a self-sufficient fractionation plant, the project includes various production wells that have been drilled as clusters using only two well pads and all equipment and personnel access the site via helicopter. When temporary access roads are required, the Project implements access control measures for those roads, and once they are no longer required they are re-vegetated.

Through these activities, the base becomes the target destination of potential in-migrants who, in turn, demand a range of goods and services. However, the economic boom disappears when the base is relocated. Such closure is not always understood, and generally does not meet with local support.

The characteristics of potential destinations, including their accessibility, their assimilative capacity, and the availability of infrastructure, services, and utilities, should be a factor in decisions regarding the purpose, number, and location of bases. Where projects elect to prioritize proximity to the project site, the analysis of the characteristics and assimilative capacity of these locations should inform the need for and nature of mitigation measures.

ACCESS CONTROL

To protect a project and a host community from speculative land acquisition, the project may elect to secure all required land up-front, even if land take is scheduled over several years. During this intervening period, the project may permit PAPs to use the land through the development of annual land-use agreements.

SPATIAL PLANNING, ADMINISTRATION, AND RESOURCE ALLOCATION

To avoid spontaneous and unplanned growth in housing, projects may work together with local government to develop and implement master urban/spatial plans for existing and new settlements within the project area of influence. These plans should allow for controlled development through zoning and regulation, such as by directing development and in-migration to defined nodes. In this way, they will promote better management in the development of infrastructure, services, and utilities. Appropriate "pull" factors, such as demarcated housing sites, roads, water supplies, schools, and clinics, should be included in the definition and preparation of sites.

The development of plans and their implementation and enforcement requires government capacity and resources. To this end, the project may need to work with local, regional, and national governments to build capacity and seek rapid delivery and allocation of project-derived revenue in support of development and delivery of infrastructure, services, and utilities, and/or tax offsets to allow the project to invest in the same. Such investment should take account of responsibility for ongoing management, operations, and maintenance.

EXAMPLE: THE SIMANDOU PROJECT SUPPORT OF SPATIAL PLANNING FOR MORIBADOU VILLAGE

The Simandou Influx Management Plan identified that Moribadou (the village closest to the Project main camp) experienced both high and relatively constant rates of in-migration, with the population increasing from approximately 800 inhabitants in 2005 to just over 4000 in 2008. It was recognized that the traditional village management structures were unable to cope with high influx rates, lacking both the experience and resources to direct village development, whilst also embarking on a land for cash strategy. Accordingly the Simandou Project supported a participatory, consultative process (involving villagers and local government) aimed at developing a spatial plan that would allow for the managed expansion of the village away from the main access roads and neighbouring villages. The resultant spatial plan involved: (i) definition and allocation of public spaces for markets, water pumps, education, sports fields, health, places of worship, bus stops; (ii) definition of areas for construction plots (two new areas sufficient respectively for 230 and 200 plots were opened up). This included the re-opening of an abandoned road which gives the village a triangular (rather than linear) shape. Overall, the exercise allows for the planned integration of up to 7000 more inhabitants.

Six months later, the village leaders used the plan for selecting the sites for new water wells and people have started building on plots situated in the new construction areas as the population continues to increase.

In addition, the relationship between granting of mineral rights and surface rights differs between countries. Local government and traditional authorities are not necessarily aware of the relationship between surface and mineral rights, or the laws and regulations that govern the allocation of rights and the implications of these. Projects need to work with local government and traditional authorities to ensure all parties are aware of and understand the legal bases of these changes and their respective roles in facilitating the process.

PLANNING INFRASTRUCTURE, SERVICES, AND UTILITIES

The availability of infrastructure, services, and utilities can affect settlement patterns. For example, project development of infrastructure, services, and utilities for its own use often requires development of these facilities outside of the project site. Both the infrastructure and the increased availability of services and utilities may lead to considerable social pressure being placed on the project to either share their own resources or meet the cost of providing resources to the public. Alternatively, project resources may also be tapped illegally or otherwise utilized.

An assessment of current capacity against predicted population increases will allow strategic planning and resource allocation decisions. Working together with government, the project may develop mechanisms to share responsibility for development of infrastructure and utilities. For example, the project could elect to support the local government to provide services to a sector of the company – the mine camp or management housing – and the company becomes a customer of the local authority utility and pays for most of the running costs of the utility. The marginal cost of providing additional energy/water to others is low, and company payments can cross-subsidize the fees for poorer users. The company can provide initial technical help and sit on the local authority utility board, helping to build management capacity. The project may also wish to promote alternative, simple, low-maintenance technologies that meet key needs.

EXAMPLE: PROVIDING SERVICES TO LOCAL POPULATIONS

When providing services to local communities, projects should be wary of creating unsustainable dependencies. At Sadiola Gold Mine, Mali, a separate water supply system (boreholes) was initially established for the local village. However, when this broke down, the village was temporarily connected to the mine's water supply system (a 70-km large pipeline bringing water from the Senegal River). Eight years later, the village is still "temporarily" connected to this major water pipeline. At mine closure, this is going to be a major problem, since the local economy is not large enough to maintain and operate the pipeline.

WORKFORCE RECRUITMENT POLICY AND MANAGEMENT

Workforce recruitment and management policies and their effective implementation can significantly affect migrant settlement patterns. Key workforce policy and management issues, including workforce targets, prioritization (e.g., a local-first recruitment policy), the use and location of local recruitment centers vs. recruitment centers distant from the project location, use of project transport (see page 80), hiring policy and practice for day/casual laborers, medium-to-long-term localization plans and worker mobilization and de-mobilization strategies, need to be defined at an early stage.

Decisions regarding workforce recruitment and management must be accompanied by determination of the practical bases and implications of applying these policies and management strategies. These may include:

- Definition of "local," the type of evidence required to demonstrate local status, and the establishment of accepted verifiable criteria to demonstrate local status (see case study, P. 79); the registration of locals;
- Management of contractors and labor suppliers or brokers;
- Establishment of migrant reception centers providing information on registration, accommodation (including appropriate technology for housing, water, and sanitation), health issues, and the project workforce recruitment policies and practices;
- Establishment of workforce recruitment centers; and
- Availability of transportation services that meet project safety criteria.

© Rob Gerrits

Image 16. People disembark and goods are unloaded from a regional ferry docked in Babo, the location of a logistical base and only 40 km (by boat) from the Tangguh LNG Project site. Weak institutional systems for registration and monitoring of migrants made it very difficult for the Project to distinguish between local people resident within the project area of influence and people coming from across Papua and beyond. The Project worked with local government to help ensure that local people were able to obtain identification cards.

Where government systems are weak, high levels of internal migration may impose high costs on project human resource management, and also require capacity building of the relevant government bodies.

Projects which may also experience and benefit from international (cross-border) migration should be aware of country policies and requirements for recruitment of migrant labor. In addition the project should be aware of the requirements of ILO Conventions 97 Migration for Employment (1949) and ILO Convention 143 Migrant Workers – Supplementary Provisions (1975). These conventions require that migrants be treated in the same manner as nationals (with regard to freedom of association, salaries, and social security). Particular concerns include: (i) rights to join or form a union and engage in union activities; (ii) avoiding the withholding of worker documents or financial deposits; (iii) the ability of migrants to transfer benefits from social security and pension schemes to their home country; and (iv) migrant workers' access to health services.

Finally, a project should also consider migrant worker accommodation.[2] Often internal and cross-border migrants reside in poor circumstances; yet where they are recruited as "locals" projects may not be obliged to consider their living conditions.

---

2 IFC/EBRD (2009) *Workers' Accommodation: Processes and Standards* http://www.ifc.org/ifcext/sustainability.nsf/ AttachmentsByTitle/p_WorkersAccommodation/$FILE/workers_accomodation.pdf

EXAMPLE: CROSS-BORDER EMPLOYMENT IN ANGOLA

Projects operating in Cabinda, Angola encounter the effects of international migration in their recruitment of "local" people. The long civil war that devastated Angola between 1975-2002 caused large numbers of Angolans to flee into neighboring Congo, where, given the length of the conflict, the people established new livelihoods, started or expanded their families, etc. With peace, the refugees returned to their place of origin. However, their ability to secure employment is constrained – in many cases the people do not have proof of citizenship; they may have been born in DRC, and as a result they are deemed to be cross-border economic migrants. Securing employment requires the issuance of an appropriate permit and identify card from the Angolan authorities.

EXAMPLE: WORKFORCE MANAGEMENT

Rio Tinto is developing the Simandou Project in Guinea. The project supported the development of an Influx Management Plan, which was informed by a review of four major projects operating in the region: Alumina Refinery Project (BHP-Billiton) Sangaredi/Kamsar; Friguia Project (Bauxite Mine and Alumina Refinery), FRIA; Ashanti Goldfields Corp Project A(AGC) Siguiri; and Soguipah Project (Palm Oil and Rubber Tree Plantation, Diecke). The review covered many aspects of the projects, including employment. The key lessons learned regarding employment were:

- Employment is the number-one problem in all large-scale projects;
- Clear, precise, and well-defined employment policy and transparent procedures are required to explain the situation, avoid conflict, and minimize expectations. In order for the policy to be known by the people, it should be widely distributed, particularly in areas with great concentration of migrant populations; and
- The employment issue cannot be permanently resolved. Even with the best policies and procedures in place and after years of operation, employment remains a sensitive issue prone to creating conflicts.

DEFINING THE LOCAL LABOR POOL, GHANA

During the construction of the Ahafo gold mine in Brong Ahafo, Ghana, Newmont established a labor pool system to maximize employment of unskilled labor from affected communities. In consultation with traditional authorities and political leaders, Newmont defined "local" as encompassing the two administrative regions potentially affected by the project (Asutifi and Tano North districts). The project asked all interested local applicants for the labor pool to obtain verification from their respective leaders that they were legitimately local. Newmont set a target of 100 percent of the project's unskilled labor needs to be recruited locally. A quota for each community was negotiated with community leaders based on population size, size of village landholding affected, and proximity to site. Bussing arrangements ensured that employees came from the entire concession area, instead of favoring those who lived close to site.

Newmont communicated its plan to employ as many local people as possible throughout the local area and solicited applications from interested locals. Street theater groups were used to disseminate the information. As a result of this communication effort, the company received 13,223 applications for work. Based on the estimated unskilled workforce requirements for the construction phase, more than 700 positions were available in the labor pool. Applicants were short-listed through meeting basic requirements and a village-based public lottery.

A Newmont training coordinator was on-site prior to the start of construction. Short-listed local applicants were enrolled in a three-week orientation training program. The induction program (and further vocational training) was provided through an existing vocational training center, rather than requiring construction of a new facility. Following successful graduation from the induction program, trainees became part of the unskilled local labor pool and were offered employment by the company and contractors on an as-needed basis. Contractors were contractually obliged to hire 100 percent of their non-skilled personnel through the labor pool and provide further on-the-job training. Employees that excelled at their job received training as semi-skilled laborers to become trade helpers. The best 24 of the semi-skilled employees received apprenticeships (at a recognized institute providing accreditation) and were subsequently employed as operators, warehouse staff, etc. during mine operations.

© Ted Pollett

Image 17. The Sadiola Gold Mine is located in a remote area in north-west Mali. The Project relies heavily on vehicular transport to supply the operations. One consequence of a regular trucking schedule reliant on an established access route, has been the proliferation of road-side shops, the majority of which have been established by and are operated by migrants. Besides obvious health and safety issues with unplanned roadside development, the migrant capture of such small business opportunities represents a missed opportunity for local people.

PLANNING MATERIAL TRANSPORTATION

Projects located in remote areas and that are reliant on the development and use of dedicated and/or public transportation (e.g., road, rail) for the supply of inputs and transport of ore to processing or export facilities should include an analysis of the route and potential in-migration effects. Good practice involves the definition of the route, driver codes-of conduct, established trucking stops and tracking systems to monitor trucks.

PLANNING WORKER TRANSPORTATION

The provision of project transportation services may affect the need for local and regional migration toward the project. Transportation services for a project workforce living within a 50-100-km radius of the project may reduce the need for migration toward the project site, reduce the demand for local housing, reduce the pressure on local infrastructure, services, and utilities, and thus preempt the development of larger population centers close to the site.

The number of in-migrants located near a project can be reduced by having a "fly-in, fly-out " policy for workers, which involves basing workers and their families in distant towns or cities and then flying them in for short-term shifts where they stay in dormitories at the project site. Such a policy is often used in remote and sensitive environments such as sub-arctic/arctic or rainforest sites, where there are few nearby indigenous settlements.

EXAMPLE: ORION PULP MILL PROJECT

Sponsors of the Orion Pulp Mill Project, Uruguay, anticipated that a large influx of construction labor force required by the project would have adverse social impacts on the project area. To avoid such impacts, much of the civil construction labor was recruited within a 50-km radius of the project and transported to the site from designated pick-up points via buses operated by the project sponsor. Highly skilled labor required for the electro-mechanical construction of the project was recruited internationally. A large number of these workers were housed in apartment blocks constructed by the sponsor near the project site but removed from the project area's main population center, while the balance were housed in modified 40-foot containers laid out adjacent to these blocks. When the project's construction was completed, the flats were turned over to the municipal government for use as low-income housing and the containers were removed and shipped back to their supplier.

PLANNING WORKER HOUSING

Decisions regarding the provision of worker housing have the potential to affect: (i) the local demand for housing; (ii) the pressure placed on existing infrastructure, services, and utilities; (iii) the development of local economies to support the workforce; and (iv) the development of local-level jealousies regarding standards of housing, utilities, and services, as well as post-project disposal of housing.

Projects in isolated and lowly populated areas that require a temporary, largely migrant construction-phase workforce should utilize on-site temporary housing.

Depending on the project context, construction and/or operational phase worker housing may be developed within or outside the project property boundaries, the latter as project housing suburbs or integrated housing. On-site housing minimizes workforce-host community interactions, reduces pressure on existing infrastructure, services, and utilities and reduces workforce absentee-ism. It can also preempt the development of various economic activities, including housing booms and the supply of goods and services such as cigarettes, alcohol, drugs, or prostitution. On the other hand, problems at the housing site have the potential to spill over to the project, and vice versa.

The decision to utilize or develop on-site or host-community construction-phase workforce housing should be based on proximity to larger, established population centers and the assimilative capacity of the environment. Larger, established population centers may have existing and surplus housing, and established systems for the supply of goods and services, making them able to readily assimilate the project workforce. However, projects in isolated and lowly populated areas that require a temporary, largely migrant construction-phase workforce should utilize on-site temporary housing.

Permanent housing for the operations-phase workforce may be developed on- or off-site. Development of integrated housing or housing suburbs should be approached with caution, to avoid creation of local-level resentment regarding standards of housing, utilities, and services, as well as avoid the need for post-project disposal of housing. If a project anticipates that the workforce is to be resident within the local community, providing financing options for locals to develop hostels and other housing options may provide local benefit while mitigating various environmental and social impacts.

Irrespective of where the staff housing is located, the company should develop a Code of Conduct to guide staff interaction with local "host" communities for both construction and operations phase activities.

PROCUREMENT OF GOODS AND SERVICES

Project decisions regarding construction and operations phase procurement of goods and services will determine the location of economic activity. Localization will create service towns entirely dependent upon the project for employment and the procurement of goods and services. For large-scale oil, gas, and mining projects in remote locations, the creation of service towns has also been typically associated with the provision of infrastructure, services, and utilities to the public. To mitigate dependency, the development and use of more distant and, perhaps, established supply centers that serve multiple sectors within the region should be considered, with full accounting of the medium-to-long-term economic, financial, and social costs and benefits.

At the same time, it should be recognized that local people often demand local development. This can be offset to some extent by creating vocational training and placement opportunities in the goods and services sector.

DEFINITION OF PROJECT AFFECTED PEOPLE (PAPS), COMPENSATION AND BENEFITS

Project ESIA and other documents (e.g., RAPs, IPDPs) define the basis for the recognition, compensation, participation, and development of project-affected people (PAPs). In many circumstances, the population within the broader project area of influence is either not aware of or does not understand the basis for identification of PAPs, and has a considerably different set of expectations with respect to entitlement to the benefits to be derived from the project. Hence while Project recognition and compensation of PAPs may initially

deemed to be a private matter between the PAPs and the project, when tangible benefits become visible, it very quickly becomes a public issue. The visibility and consequent public awareness of the benefits may lead to jealousy, increased competition for benefits between locals, and the return and/or in-migration of groups seeking to claim benefits.

Securing the support of the broader population for the project's approach to managing impacts and sharing project benefits is an important part of securing support for the project itself, and protecting local benefits from in-migration. Public and government awareness, understanding, acceptance, and support of the project's basis for defining PAPs and delivering benefits to them are necessary. The key points to be addressed include:
• Precise definition of the benefits and beneficiaries of the project's impact mitigation and development programs, including entitlement cut-off dates, the structure of the benefit package in terms of the nature, schedule, and distribution of compensation and other development benefits among PAPs (e.g. through compensation, resettlement, indigenous peoples development plans, social and economic development programs, etc.)
• Adequate consultation with government, key leaders and communities in the project area so as to ensure awareness, understanding, and support of project impacts and their relationship to mitigation and compensation;
• Dissemination of PAP eligibility criteria within the project area of influence using criteria that are readily understood, communicated and culturally appropriate
• Definition of mechanisms by which new claimants can put forward their claims and have them evaluated;
• PAP group conflict resolution approaches; and
• Dissemination of information regarding how people outside the project area of influence will receive benefits, in the context of regional development benefits derived from project.

At the outset, impact mitigation and compensation and development benefits should be placed in the context of the project's long-term strategic plan for community development. This should also take into account the role of government, the project's more general corporate social responsibility programs and the additional benefits that they may bring to project-affected people, and a managed exit strategy. Dissemination of such information prior to the delivery of tangible benefits becoming available is critical.

BUILDING MULTI-STAKEHOLDER FRAMEWORKS AND STAKEHOLDER CAPACITY

As described on page 68, stakeholders that may be involved in managing project-induced in-migration may include local, regional and national government; non-government organizations; community-based organizations; religious groups; and affected communities themselves.

Many of the possible approaches and component activities for managing in-migration involve the awareness, understanding, and support of many stakeholders, and their implementation requires ongoing coordination and collaboration with these stakeholders. This may include developing and communicating a consistent voice supporting agreed policies and programs, and direct participation in their implementation.

The project should conduct a thorough analysis of the potential (and real) roles and responsibilities of all stakeholders in delivering the intended outcomes of policy and program specific interventions. Where shared roles and responsibilities are identified, the project retains the lead role, and ensures that: (i) all stakeholders speak with one voice in support of the agreed policies and programs; (ii) all stakeholders contribute resources to implementation of recommended actions; (iii) where appropriate, management responsibilities are assumed by the relevant stakeholder; and (iv) systems promoting accountability and responsibility are adopted.

Where government will, capacity, and resources are limited, the project may be required to assume and/or support three key roles: advocacy, facilitation, and capacity building. These activities may need to be coordinated and implemented at the national, regional, and local levels.

> Where government will, capacity, and resources are limited, the project may be required to assume and/or support three key roles: advocacy, facilitation, and capacity building.

Advocacy seeks to promote awareness, understanding, and action. It is important to assess and recognize the motivation and willpower of key stakeholders and their role and capacity to manage influx. Some countries have legal frameworks that guarantee freedom of movement within the country. At the national level, stakeholders may not be aware or concerned about project-induced in-migration, and may provide considerable resistance to proactive management. Political will may not support strategic regional development if such development falls outside the jurisdiction of the project area. District or regional government may not support management of in-migration, as funding from the national government often hinges on indicators associated with increased population. Finally, it must not be assumed that the principles of representative government and "the common good" are held by all. At all levels of society, the economic (and other) opportunities offered by project-induced in-migration often undermine multi-stakeholder commitment to influx management.

Capacity building aims to define institutional roles and responsibilities and build capacity. It requires time and interest, and often does not match the urgency associated with the implicit rates of change seen at the start of a project. Capacity building interventions may therefore need to include: (i) secondment of experienced government personnel into local and regional government departments to ensure that adequate progress can be made from the outset; and (ii) partnership with MFIs and/or bilaterals and NGOs to provide technical assistance/capacity building to local and regional governments in governance and revenue management, infrastructure planning and delivery, and improved delivery of health and education services.

STAKEHOLDER ENGAGEMENT AND MONITORING OF THE MIGRANT POPULATION

Approach	Category of Intervention	Interventions
Stakeholder engagement and monitoring	Stakeholder engagement	Ensure influx issues are addressed in stakeholder engagment plan
	Monitoring and evaluation	Early and effective monitoring systems

STAKEHOLDER ENGAGEMENT

With regard to in-migration, the key objectives for a project's Stakeholder Engagement Plan[3] should be to challenge commonly held perceptions affecting potential in-migration, help manage expectations, and help promote widespread awareness, understanding, and support for defining the project-affected population (PAP) and delivering project benefits, including employment.

Typically, early in the project development cycle, the public knows a project only through feasibility stage activities, the ESIA consultation processes, and the tangible physical expression of the project presence. Yet expectations, often unrealistic, are formed at this time: locals develop expectations based on experience with previous projects and the general commitments outlined in the ESIA; a migrant travels to the logistical base on the presumption that this will be the point of recruitment; a business enterprise is established in the local town on the presumption that the project will procure goods and services locally; local government plans the development of infrastructure, services, and utilities on the presumption of project behavior. In the absence of project-specific information, rumors abound as the local political and economic elite jockey for position and influence. Early and improved communication about project development, the development of supply bases/centers, and labor needs, recruitment policies, and management plans is key to managing the expectations of politicians, the economic elite, and the public, and thus also managing the inflow of in-migrants.

Although the final destination of in-migrants is known, the processes by which they arrive within the immediate area of the project actually occur outside the project area. Efforts to manage project-induced in-migration therefore require project activity well outside the immediate project area. A key question is how to define the relevant area to be considered for mitigation of in-migration.

The stakeholder engagement plan needs to reach *all affected stakeholders*, including the project affected population, stakeholders within the project area of influence, and potential stakeholders beyond the area of influence, with clear, timely and accurate information. For project stakeholder engagement, information dissemination, and communication to be effective, the project needs to be aware of and understand the significance of local and

---

3 IFC Sustainability Policy and Performance Standards define requirements for project stakeholder engagement. Further, *IFC Stakeholder Engagement - A Good Practice Handbook for Companies Doing Business in Emerging Markets* provides guidance on best practice.

regional, formal and informal, communication networks and communication channels throughout the project development cycle, as well as the relative importance of the type and timing of information flows.

The engagement plan should include the following:
• Commitment to early and comprehensive development of a stakeholder engagement plan that reaches beyond the boundaries of the project area of operations;
• Establishment of project liaison offices outside the project area of operations to support stakeholder engagement, workforce recruitment, etc. (physical presence is an important indicator of project commitment);
• Identification of main potential sources of in-migrants;
• Identification and use of migrant networks to engage potential in-migrants;
• Use of recognized transit centers for stakeholder engagement;
• Development of migrant reception centers staffed by locals;
• Early dissemination of information addressing key rationale for in-migration;
• Early formulation and dissemination of key project policies and procedures regarding potential benefits, such as employment;
• Early engagement of key stakeholders building awareness and understanding on in-migration and its impacts and respective roles and responsibilities in management; and
• Establishment of Influx Management Committees at appropriate level/s.

MONITORING THE MIGRANT POPULATION

Effective management of the physical, social, and health footprint of in-migration requires reliable information on in-migration, including a baseline and periodic updates. While national or regional population data are usually available, the survey data are often out-of-date and inaccurate. While the project ESIA may draw on national population data, it is important to implement a population census of the project area to establish a verifiable "pre-project" baseline. The baseline information can be further supplemented through the use of remote sensing strategies.

Monitoring ongoing in-migration is difficult because most countries allow spontaneous internal migration, immediate local registration may not be required, and policing is often absent or weak.

Proactive management of in-migration and its impacts requires timely data regarding in-migration and key environmental, social, and health indicators, as well as a definition of change rates that would trigger action. These might include population growth rates greater than 5 percent, rate of increase of new abodes, or change in number of occupants per house. The development of an agreed monitoring and evaluation framework, with agreed indicators, frequency of measurements, and definition of critical change rates is critical.

Monitoring ongoing in-migration is difficult, because most countries allow spontaneous internal migration, immediate local registration may not be required, and policing is often absent or weak. In the absence of established registration systems, incentives for registration need to be developed and implemented, such as strengthening government capacity to provide registration cards, and requiring such cards for employment. Monitoring and surveys of arrivals at transit centers and identified "hotspots" can provide early indications of influx while the establishment of a regular demographic survey of identified hotspots and villages and towns within the project area of influence can provide updates of the evolving situation. An appropriate system involving local government, heads of villages, and village health services can be developed. Identifying and measuring early indicators of impact may serve as a proxy for population surveys. Aerial photography and remote sensing can contribute to ongoing monitoring. The box below describes the use of aerial photography and remote sensing. Finally, the box on page 88 discusses monitoring health indicators.

Establishing an Influx Management Committee or Forum bringing together stakeholders, including government, traditional authorities, and other relevant parties, will help to ensure awareness of monitoring and evaluation data and opens the door for further stakeholder engagement.

MONITORING THE MIGRANT POPULATION

Aerial photography and remote sensing techniques have the potential to revolutionize community studies, as significant amounts of data are acquired in a defined geographical area at a variety of spatial resolutions. The use of aerial photography and remote sensing strategies (i.e., high resolution satellite imagery) can play a critical role in establishing an objective pre-project baseline footprint and providing regular updates. Objective quantification of key environmental, ecological, social, and health features may result from detailed analysis of the imagery. Examples include type and number of buildings, location and housing density, location of agricultural lands and forests, key surface water bodies, etc. While it is essential to "ground truth" the satellite imagery, the accurate determination of many of the key community and area baseline features can be readily established. [Aerial imagery can inform the baseline at pre-feasibility and feasibility stages, when it is not possible nor practical to do ground-based studies.]

Sequential imagery (i.e., semi-annual or annual) can help establish the geographical extent of any influx that may be occurring. In terms of health impact assessment, remote sensing strategies can significantly add to the understanding of both disease ecology and certain key determinants of health (i.e., housing density, location of water sources, and transportation routes and access patterns). Therefore, remote sensing provides significant insight into both baseline conditions and the likelihood of external (project-related) impacts on underlying burdens of disease.

MONITORING HEALTH INDICATORS

With regard to health, the monitoring, evaluation and verification system should be based on appropriate, applicable, and relevant key performance indicators (KPIs).

In general, health KPIs can be divided into three types:
- **Structural indicators** include buildings, equipment, drugs, medical supplies, and vehicles; personnel; money; organizational arrangements;
- **Process indicators** include what is actually done to and for a patient in giving and receiving care. Process indicators try to capture availability, use, and quality of medical services. Efficiency and effectiveness are often considered to be process indicators. Process outcomes include functions, patient and provider compliance, numbers of individuals trained and to be trained, programs, and support tasks;
- **Outcome indicators** are the end results of the process of patient care and of the timely availability of the necessary inputs. Outcome is typically measured using indicators of mortality, morbidity, and functional impairment. The five D's: death, disease, disability, discomfort, and dissatisfaction are typically considered to be outcome measures. The morbidity and mortality outcome indicators are calculated as rates.

Within these three types of indicators, it is necessary to pick a suite of KPIs that can be realistically and cost-effectively measured and tied to the influx-related impacts identified within an Environmental Health Areas analysis (see p. 32 and Annex 1 for more on this). Fortunately, many of the most important health KPIs are cross-linked to environmental and social data sets, which is not surprising as critical environmental, social, and health outcomes, particularly in a developing country setting, are strongly tied to wealth quintiles. Standard demographic health surveys collect and analyze health data as a function of wealth quintile, because it is an extremely powerful predictor of health status. Households in the lowest (first) quintile are usually considered as extremely vulnerable and are almost always below the money metric poverty line. Some of the most important KPIs include:

Structural
- Household characteristics – household size, number of rooms;
- Pharmacy supplies of specific categories of drugs, e.g., anti-malarials;
- Numbers of latrines; and
- Number of stand pipes and boreholes.

MONITORING HEALTH INDICATORS CONTINUED

Process
- Changes in access times for secure water supplies;
- Access to maternal medical services such as trained birth attendants, and number of pre-delivery visits;
- In migration patterns – place of origin of household members, professional status of household members; and
- Knowledge, attitudes, practices, and beliefs surrounding prevailing diseases, including malaria, soil-transmitted helminths, HIV/AIDS, etc.

Outcome
- Disease-specific prevalence rates (e.g., malaria and STIs);
- Anemia prevalence in children and women of reproductive age;
- Anthropometric measurements (height and weight for age) of young children;
- Alcohol use, smoking rates, domestic violence, and accidents; and
- Appearance of new diseases.

These KPIs are extremely sensitive to community level influx. Some examples follow:

- Most public health studies indicate that in order to minimize diarrheal diseases, there should be approximately one latrine per 25 individuals at a community level. In many settings, local communities do not meet this target value even before the arrival of a significant industrial project. If the community population rapidly rises without a corresponding increase in functioning latrines, the risk of infectious diarrheal outcomes significantly rises. Similarly, if the quantity of water per household declines because of dramatic population influx pressure, the risk of diarrheal disease will also rise.
- If project-induced in-migration leads to decreases in the availability of food and the nutritional value of diets, e.g., through increased demand for food, increases in the cost of food or changes in agricultural production and seasonal distribution of food and food stores, there can be a decrease in nutritional status leading to an increase in childhood levels of anemia and a decrease in anthropometric indices.
- Influx-triggered changes in rates of specific diseases (e.g., malaria or HIV/AIDS) are a far more complex undertaking. Malaria rates tend to have marked seasonal variations, even in locations that have year-round parasite transmission. Therefore, the timing and frequency of community monitoring surveys are critical, so that valid data are obtained. Similarly, collecting community STI data, particularly HIV status, is a highly sensitive process that should be performed by or in conjunction with the relevant public health authorities. Although private companies are not advised to undertake unassisted community HIV prevalence surveys, HIV prevention efforts should be strongly encouraged and are an effort that many projects strongly participate in and support.

MITIGATING THE NEGATIVE IMPACTS OF PROJECT-INDUCED IN-MIGRATION

Approach	Category of Intervention	Interventions
Mitigating impacts	Effective delivery of project benefits to project-affected people (PAPs)	• PAP definition, compensation, and benefits • Workforce recruitment and training • Bank services and micro-finance • Enterprise development
	Strengthening project capacity	• Project security • Project stakeholder engagement and communication • Monitoring and evaluation
	Addressing negative social impacts	• Governance • Law and order • Managing social change • Retrieval of negative social dynamics • Spatial planning, housing, and water and sanitation • Health • Project closure

As discussed in Part 2 of this document, there can be a wide range of negative environmental, social, and health impacts of project-induced in-migration. There are three main categories of interventions that have been effective in addressing these impacts: (i) ensuring effective delivery of project benefits; (ii) strengthening project capacity to address in-migration and its impacts, and; (iii) addressing the potential negative social impacts of project-induced in-migration. These strategies are discussed in more detail below.

Effective management of the negative impacts of in-migration involves focused programs in various development sectors that are typically already part of the project's social and community development programs. Where such programs exist, it is not necessary to develop a parallel program. Rather, a review of the existing programs in the context of project-induced in-migration is required. This review may lead to the adaptation of existing programs to incorporate the further objective of managing in-migration or its impacts. This may require a change or addition of program approaches and components and consequent changes in the monitoring and evaluation (M&E) systems to ensure that indicators reflecting attainment of these objectives are also measured.

EFFECTIVE DELIVERY OF PROJECT BENEFITS

One of the key challenges in addressing the impacts of in-migration is the effective delivery of project benefits to the appropriate project-affected people (PAPs), so that the benefits are clear and can be delivered and the PAPs are in a position to sustain those benefits. The ability to sustain benefits will frequently require defining and enforcing eligibility criteria and capacity building among PAPs. A number of measures can assist in achieving effective and sustainable delivery of benefits.

PAP Definition, Compensation, and Benefits

The previous section described the need for and methods for ensuring that the Project adequately defined PAPs, compensation and benefits and shared this information with all stakeholders in the project area of influence and beyond. Where Projects have failed to adequately implement these measures, corrective action to mitigate this failure and any consequent social unrest may be necessary.

Vocational Training

Vocational training may be implemented by the project and its contractors. The objective of vocational training is generally expressed in term of increasing the competitiveness and participation rates of the local population through focused training in requisite skills. Where vocational training is considered, the proactive training and skills development of local inhabitants must take place prior to project construction and operation to ensure that relevant capacity is developed on a timely basis that allows local communities to take advantage of employment opportunities.

While this objective serves the project's ends and meets the requirement to be seen to be doing something to promote local participation, the fundamental premise and promise of vocational training is problematic. Key issues include: (i) the time, cost, and efficacy of in-situ project-owned vocational training; (ii) the potential for vocational training to deliver increased local participation in project construction and operations in a timely manner (particularly given the low levels of educational achievement often seen in the project area of influence); and (iii) the link of vocational training to regional sectoral and development needs. In light of these issues, consideration should be given to:
• Exploring on-the-job training opportunities that can then be built into contractor requirements;
• Focusing vocational training on supply chain linkages and business and employment opportunities therein; and
• Developing collaborative sector-level approaches to strengthen existing, or developing new, regional vocational training centers to address common needs.

Banking Services and Micro-finance

Providing local people with opportunities to save and invest construction-phase windfalls is an important aspect of sustaining project benefits. Developing a basis for savings and investment is the first step in creating opportunities to retain and invest benefits. In certain circumstances, creative solutions to the problems of limited access and communication may be needed, such as introducing mobile banking services or remote access systems.

Where communities have had limited experience with accumulating wealth through banking and investment, the project can create incentives to encourage saving, through the selected method of workforce payment or the creation of incentive schemes, such

as matching funds, for savings and investment. Similar consideration should be given to providing options for the investment, management, and use of royalty payments and compensation. Where appropriate, the project may also consider supporting the introduction of micro-finance schemes providing local people with access to finance to develop micro- and small-enterprises.

Enterprise Development

Retention, investment, and development of benefits can also occur through assessment of sectoral opportunities (by assessing project and local/regional demand for goods and services), assessment of project support of entrepreneurship and business development, and training and SME initiatives. Both the opportunities directly related to the project, and the opportunities that arise from induced impacts, such as the need for housing, should be evaluated. Some projects have also facilitated the establishment and management of large-scale enterprises, including transportation, catering, and supplies of goods and services. Such efforts have faced real challenges in addressing local capacity, ensuring delivery of goods and services, and ensuring sustainability.

© Ted Pollett

Image 18. Linkages Program, Ahafo, Newmont Ghana. The opening of the Ahafo mine created an opportunity for Patrick Boakye's small business (PKC) to supply Newmont with plastic sampling bags.

SADIOLA MINE, MALI: TAILORING ELIGIBILITY REQUIREMENTS TO AVOID EXACERBATING LOCAL SOCIAL DIVISIONS

With the creation of the Sadiola mine, an influx of work-seeking migrants arrived in the district (3000 migrants during construction). While many of these "new arrivals" left once the mine started production and the number of jobs decreased, a significant number remained (1,250 during operations). Compared to the "original inhabitants", these new arrivals demonstrated greater entrepreneurial initiative and skill in identifying and exploiting new business opportunities. This skill created tension with the "original inhabitants" who perceived the newcomers' success as detrimental to their own. To address this tension, special attention was given to helping "original inhabitants" take advantage of community investment activities such as micro-credit programs. Measures included actively seeking proposals from "original inhabitants" and weighing them higher than those from "new arrivals," while not excluding new arrivals entirely.

Source: AG MacKenzie & J. Pooley, "Sustainability Challenges: Community Development Initiatives at Sadiola & Yatela Gold Mines, Mali, West Africa."participate in and support.

© Ted Pollett

Image 19. Peanut Butter Producers Trained by Sadiola Foundation, Sadiola, Mali.

STRENGTHENING PROJECT CAPACITY

When in-migration is identified as a problem after the project is underway, the Project may need to strengthen its own capacity in a number of areas, including stakeholder engagement, monitoring and evaluation and project security. Stakeholder engagement and monitoring and evaluation were described in a previous section.

Strengthening Project Security

In addition to strengthening stakeholder engagement and monitoring capacity, a project can address the impacts of in-migration is through the strengthening of project security. A project's security program has a number of tools at its disposal to address security threats and mitigate their negative affects.

One of the most important public commitments a company can make is to abide by the Voluntary Principles for Security and Human Rights (VPSHR).[4] The VPSHR are gaining general acceptance as an internationally accepted standard for extractive industries operating in developing countries to maintain their security while protecting human rights and enhancing the professionalism of host nation public security forces. While the standard was developed in relation to extractive industries, its basic themes can be applied to any type of development project.

Human Resources and the Composition of the Security Force
Security guards are normally a relatively high percentage of a typical project's workforce, because security posts and responsibilities continue 24 hours a day. This is especially true during full production, when the construction workforce has demobilized and only the plant operating workforce remains. The training requirements for security guards, while extensive, can tap the semi-skilled labor pool. The local inhabitants are often keen to join the security guard force, seeing it as long-term employment requiring little hard physical labor. However, one concern with using local inhabitants is that they may have divided loyalties when maintaining protection for high-value, easily stolen property. Traditional social structures may dissuade them from deterring or reporting a family member involved in a crime against the project. This concern is manageable, however. Although bringing in all the security guards from outside the local area[5] is likely to be unacceptable to local leaders who see it as another example of the project marginalizing them, hiring a blend of local and non-local security men will often address this issue.

---

4 http://www.voluntaryprinciples.org/
5 Security guard companies normally favor this approach, because it reduces their liability and limits the possibility of guard collusion with local criminals. It also tends to reduce absenteeism as non-local guards live at the company accommodation area and are under control of their supervisors.

In some critical locations such as fuel storage areas, property warehouses, and sensitive access control points, two guards – one local and one non-local – will be the most effective security arrangement. When hiring "local" guards, security and human resources must collaborate to ensure those selected are actually indigenous and not newcomers who may have bribed an official for a local residency card.

Contracted Security Services

A project can exert direct pressure on a contracted security guard company to accept and adhere to the project's ethical standards, the VPSHR, and the project's hiring guidelines as part of the guard service contract. In addition, the security guard contractor can have a significant influence on local conditions by skillfully managing personnel recruiting and advancement.

It may be helpful to require the guard company to employ an equal number of local and non-local guards as required by the project, but to assign some of them outside the local area. This meets the expectation that security guard jobs are available to the local inhabitants. The private security guard force will require thorough, professional training in the use of force, in order to prevent an abuse of force when the guards confront disruptive behavior on or near the project's operations. All concerned must be transparent in this effort to prevent misunderstandings.

Security Interaction in the Community

In coordination with the community relations manager, the security manager has a role to play in communicating and forewarning the local community of the likely consequences of unrestricted in-migration. This phenomenon may be unexpected or underestimated by local traditional leaders. A Community Security Forum, meeting regularly, is a useful expedient to share information, manage expectations, defuse frustrations, and channel disputes toward resolution.

Physical Security, Encroachment, and Entrepreneurs

One of the most insidious phenomena of in-migration is the encroachment of newcomers onto project property, along perimeter fences, or on the access right of way. Squatters, artisanal miners, and small vendors spring up literally overnight. Even refuse dumps and discard areas will attract scavengers and opportunists. The spread of instant occupations, the conversion from hovels to tents, shacks, houses, and villages can be an almost unbelievably rapid transition. Once established, they are extremely resistant to being moved, while others see their success and emulate it. Once in-migrants have established themselves on land important to the project, the magnitude of the problem becomes apparent, so the greater the distance between the project's key facilities and the project perimeter the better.

The project must have a robust physical security envelope that protects all, or at the very least the most vulnerable and sensitive areas of the project's operations. Security managers are normally attuned to this danger and take prompt action, but they must communicate this adequately to the project, its workforce, and the local community.

MITIGATING ENVIRONMENTAL IMPACTS

Risks of landscape-level environmental impacts can be of particular concern when a large population influx is observed and environmentally sensitive areas are located at or near a project area. Environmental impacts can be avoided or minimized if these risks are recognized in a timely manner, and a degree of focused environmental and land use planning and management is implemented by the project in cooperation with the local or national authorities.

Where impacts affecting forests and biodiversity through logging and harvesting of timber and wildlife hunting are potentially significant, cooperation and coordination with competent authorities for natural resource management and environmental protection should be sought at the project's onset. If environmentally sensitive areas and resources are present in or near the project area and may be affected by impacts induced by an increased population pressure, an inventory of these sensitive areas should be available from the early stages of the project and should be maintained by the project throughout the construction phase and after, as needed. This inventory will provide both a baseline and a tool to monitor impacts during project implementation.

It is recommended that observations are shared with the local authorities. Land use mapping and other planning tools can also be designed to provide support in mitigating and managing impacts due to uncontrolled exploitation of borrow pits and soil resources for construction materials. Where appropriate, the project might consider supporting the newly settled communities, providing assistance for fuel wood and construction material from local suppliers, and designing community programs to promote sustainable use of forests and natural resources.

Point-specific impacts are associated with environmental degradation caused by improper disposal of solid waste and wastewater, and depletion of water resources. The project should work with the communities to identify water availability and management options, and promote sustainable management of water sources and infrastructure and safe management of waste. Mitigation measures include sanitization of settlements, with provision of run-off drainage infrastructure, properly designed latrines and septic tanks (taking into account seepage risks and impact on water resources), garbage collection, and provision of water supply systems (water wells, springhouses, and surface water intakes).

Establishing community committees for maintenance and management of water supply and sanitation is recommended, coupled with training in the operation and maintenance of water points, drainage networks, and garbage collection. Rehabilitation of land at waste dumps, latrines and sewage discharge drainage, and other potentially contaminated sites should also be implemented, as well as due diligence and clean up of spontaneous settlement sites, whenever they disappear when construction camps demobilize.

ADDRESSING NEGATIVE SOCIAL IMPACTS

The negative social impacts of project-induced in-migration can be addressed through the following activities:
1. Strengthening government capacity;
2. Building awareness and the capacity of civil society to be involved in managing the changing social dynamic; and
3. Addressing key potential impacts through improved spatial planning and improvements in housing, water and sanitation, and health.

Governance

Local government awareness, understanding, and capacity may often be limited, and the government may be unable to respond effectively to the rapidly evolving situation. In such cases, there is a need to strengthen government and departmental capacity in planning, management, and delivery of relevant and timely programs.

The strengthening of governance and sectoral capacity may be achieved through, for example, programs that deliver training in planning, budgeting, performance, and resourcing; focused interventions in sectors or on specific issues, such as revenue management, health and education; and the temporary secondment of senior and experienced government departmental staff to local and regional government.

Law and Order

The local police and possibly other state security elements have a legal and sovereign right and obligation to maintain order and the rule of law. The inevitable in-migration of outsiders will increase the workload of local police, often without bringing additional state resources to manage that workload. Beyond the question of resources, in many countries the local authorities will rarely have the management capacity and training to deal with the complex problems in-migration and rapid population growth will bring.

The project can take steps to press national level authorities to provide the resources, manpower, and equipment and training to address the new problems. If the project cannot persuade the government to provide this from tax and royalty revenues, then the project must assume responsibility for the task itself or face potentially serious consequences.

One effective program that serves the best interests of the project, community, and police is a Community-Oriented Police Program. This internationally recognized training and coaching program brings together the community and police with the aim of improving the community's confidence in the effectiveness of the police, and developing the capacity of police in communication and appropriate methods to maintain law and order without excessive force or human rights abuse. A respected and professional police force, operating in communities that feel they have a stake in their security and can voice their concerns with a high expectation they will be addressed, defuses a major cause of security incidents.

Managing Social Change

This intervention aims to improve the capacity of individuals, families, communities and civil society to manage the accelerated rates of changes that project development and an influx of migrants brings. The intervention is based upon building awareness and understanding of potential changes, identifying the basis for local ownership of change management programs, and supporting change management programs. Activities may include:

• A stakeholder engagement framework that leads to early recognition and engagement of new stakeholders as they appear;
• Establishment of representative migrant groups and community fora;
• Measures to strengthen cultural and social cohesion;
• The involvement of religious and cultural institutions and security elements in migrant and community group fora;
• Development and implementation of community events such as sports events, or participation in community events such as national day celebrations, to promote greater awareness and understanding and improved community relations; and
• Development and delivery of specific sectoral change management messages through mass media.

EXAMPLE: MANAGING CHANGE, THE FUTURE IS IN YOUR HANDS, TANGGUH PROJECT, PAPUA/INDONESIA

The Tangguh Project in Papua/Indonesia developed a video concerning the management of project-induced change that was used to promote awareness and understanding of the changes that the project might bring and encourage community level management. The video drew on documentary evidence from other OGM projects, including projects in Alaska, Ok Tedi in PNG, etc., to highlight potential impacts and provide local people with an opportunity to contextualize the changes they see occurring around them. The video concluded by identifying the need for all stakeholders to be involved in proactive management rather than remain passive observers of an ongoing phenomenon.

REVERSAL OF NEGATIVE SOCIAL DYNAMICS

Some existing projects may face a situation where the social environment has deteriorated to the extent that the pre-conditions for the interventions identified in this section no longer exist. These projects have achieved a steady-state negative equilibrium, allowing the project and the surrounding communities to co-exist with periodic conflict and to some extent periodic infusions of additional benefits. Such a state is not particularly developmental, and these projects face the challenge of reversing an adverse social dynamic. Various activities may contribute to the analysis of the situation and development of action plans, including:

- Disaggregating and analyzing the key issues;
- Analyzing stakeholders, including identification of powerbrokers, their relations and networks;
- Analyzing stakeholder objectives and identification of common objectives;
- Identifying commonalities and differences between stakeholders with a view to identifying deal breakers;
- Finding common understanding of roles, responsibilities, and what is achievable;
- Developing solutions that provide benefits to all stakeholders, develop clarity regarding trade-offs and their consequences, and provide incentives for behavior change; and
- Ensuring that agreed solutions include community-level checks and balances.

Spatial Planning, Housing, and Water and Sanitation

Unregulated, spontaneous growth of settlements is typically associated with high-density occupancy and poor living conditions, including inadequate housing, water, and sanitation. The development of spatial plans and investment in the delivery of better-planned settlements with improved housing and access to water and sanitation can be a significant contribution to alleviating poor living conditions associated with high levels of in-migration. Appropriate technology options for housing, electricity, water, and sanitation should also be promoted. Where appropriate, the project might consider the introduction and support of micro-finance options that support this.

© D'Appolonia S.p.A.

Image 20. After fires in 2002 and 2003, the local government and the oil consortium worked together to establish a buffer zone along the main road between the Komé Atan settlement and the oil consortium construction camp in Chad, near the Chad-Cameroon Oil Pipeline Project. The photograph shows the buffer zone separating the first row of houses from the road. Before the fires, this area was occupied by large numbers of randomly placed temporary thatch buildings stretching along the length of the road. Such development was associated with higher exposure to dust from passing traffic and higher risks of traffic accidents.

Image 21. Komé Atan settlement, Chad near Chad Cameroon Oil Pipeline Project. After the 2002 and 2003, fires an increasing number of houses were built using permanent materials allowing Komé Atan to evolve from an informal, albeit long-established settlement into a new village recognized by local government.

Image 22. A new street in Komé Atan settlement, Chad, near the Chad-Cameroon Oil Pipeline Project. After the 2002 and 2003 fires, the local government and the Oil Consortium worked together to develop an organized village layout with wider streets.

Image 23. Project-sponsored village water well, Komé Atan settlement, Chad, near the Chad-Cameroon Oil Pipeline Project. Water availability and management was recognized to be an important contributor to improving harsh living conditions in the informal settlements located around the project facilities. In Komé Atan, a Villagers' Water Committee for Water and Sanitation was established, and training in the operation and maintenance of water points and drainage network was provided. The establishment of a tariff for water promoted sustainable maintenance of water points.

Mitigation of Health Impacts

Based on the level of risk of potential influx-related health impacts in a project area, a project may need specific programs to mitigate health impacts. The Environmental Health Areas (EHAs) framework is a standard method for analyzing project-triggered health impacts. The EHA framework allows for a systematic evaluation of a project's potential health impacts by considering 12 areas of risk.

The overall mitigation of influx-related health impacts should be an integrated effort, since health is intertwined with environmental and social determinants. It is far more cost-effective and efficient to develop an integrated effort rather than multiple discrete plans. For example, increases in road traffic accidents can be a direct consequence of a project and significantly exacerbated by in-migration. The social and health burdens are significant, and local communities rarely have the required traffic management systems. An integrated approach to mitigating this type of impact is essential, as the health system alone will not be able to solve the problem.

In general, influx produces a series of impacts across the defined EHAs that can be reasonably anticipated, allowing for the development of a series of generic mitigation strategies. (See Annex 2 for general mitigation measures for each EHA.) However, each project and location has unique features and should adapt these strategies based on the site-specific characteristics.

Any overall health impact mitigation strategies should be organized around two fundamental public health concepts: health promotion and disease prevention. Health promotion and education strategies include any intervention that seeks to eliminate or reduce exposure to harmful factors by modifying human behaviors, or any combination of health education and related organizational, political, and economic interventions designed to facilitate behavioral and environmental adaptations that will improve or protect health.

> Any overall health impact mitigation strategies should be organized around two fundamental public health concepts: health promotion and disease prevention.

FIGURE 9. DISEASE PREVENTION PYRAMID
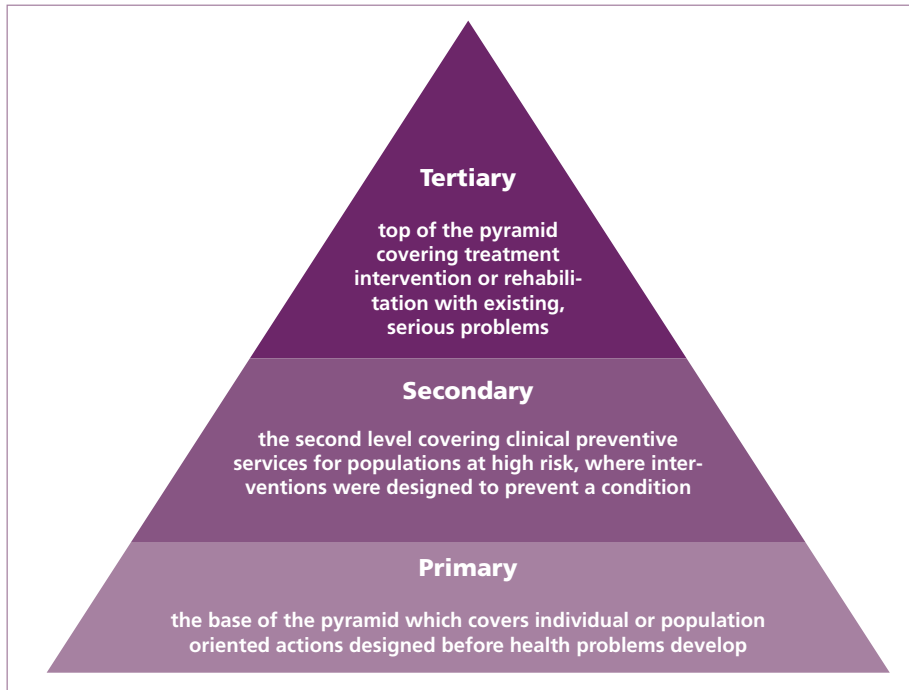
Disease prevention strategies include any intervention that seeks to reduce or eliminate diagnosable conditions. These strategies may be applied at the individual level, as in immunization, or at the community level, as in the chlorination of the water supply. Disease prevention is often illustrated by the prevention pyramid (Figure 9) which is composed of:

- **Primary interventions** (the base of the pyramid), which cover population-oriented actions designed to prevent health problems before they develop;
- **Secondary interventions** (the second level), which include clinical preventive services for populations at high risk, where interventions are designed to prevent a condition; and
- **Tertiary interventions** (the top of the pyramid), covering treatment intervention or rehabilitation with existing, serious problems.

The placement of population-oriented prevention at the base is significant in its focus on all of the people as recipients, its broad, long-lasting impact on health, and its role in defining and facilitating the entire system.

Project Closure

Legacy issues associated with in-migration are associated with economic decline and the concomitant threat of unemployment and poverty, the lack of sustainability of infrastructure, services, and utilities, and out-migration. The project should develop and disseminate project closure plans well in advance of closure that address these issues.