

ENVIRONMENTAL HEALTH SECTOR FRAMEWORK



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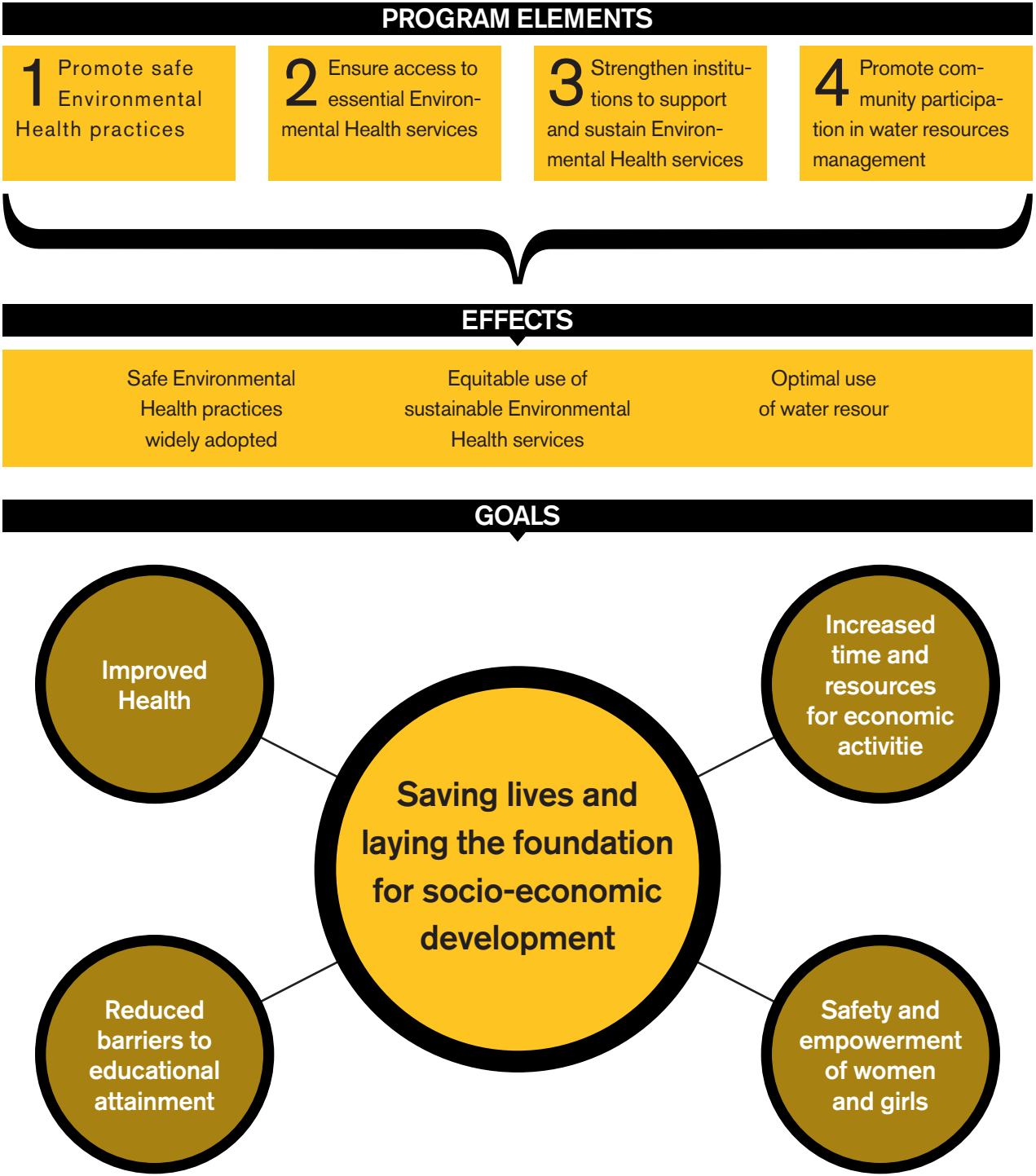
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PURPOSE

The **Environmental Health Sector Framework** outlines what the International Rescue Committee (IRC) does in this sector and the impact these actions will have on the people IRC serves. It is an aid to help IRC country programs design effective Environmental Health programs with clear goals and clear links to other IRC sectors. This document is not a prescriptive 'how to' document that sets out a standardized Environmental Health strategy, but rather it provides a generalized structure for projects and programs. The specific components of the Sector Framework that are included will vary across projects and programs, in accordance with the context, scope and scale of the needs.

BACKGROUND

Environmental Health concerns the realization of people's right to a living environment and standard of living that supports good health, well-being and dignity. The Universal Declaration of Human Rights (1948) recognizes, in article 25, that "Everyone has the right to a standard of living adequate for the health and well-being of himself and his family". In July 2010, the UN General Assembly recognized "the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights". States have primary responsibility for ensuring that these rights are realized but their ability and will to meet this responsibility may be eroded by poor governance, limited resources, conflict, environmental degradation, natural disasters and expanding populations. In such scenarios, IRC programs work with local institutions to bridge the Environmental Health gap for marginalized, disaster-affected and displaced people.

GOALS

The goals of the Sector Framework demonstrate the important and wide-ranging impacts of Environmental Health. IRC activities in this sector save lives by

preventing potentially fatal diseases and ensuring that people (notably women and girls) can safely access essential Environmental Health services. These activities also lay a foundation for further socio-economic development, by supporting good health and well-being, enhanced economic productivity, educational attainment and women and girl's empowerment.

The Sector Framework goals can be used to inform various aspects of Environmental Health project / program strategies, including their goals or wider objectives, issues that need to be mainstreamed, and potential contributions to the goals of other programs (hence facilitating integrated programming). The safety and empowerment of women and girls should be mainstreamed into any project where this is not the main goal, given the high prevalence of violence and oppression of women and girls in many of the areas where IRC works.

The goals of IRC Environmental Health Programs are achieved through the actions of the communities served, that is to say, the *effects*, as described below.

IMPROVED HEALTH

Widely adopted safe practices such as safe excreta disposal, hand washing with soap, consumption of safe water, and the use of insecticide treated bed nets result in reduced disease. Increased household income, more educated caregivers and empowered women and girls, facilitate safe practices by giving people more control over their lives.

INCREASED TIME AND RESOURCES FOR ECONOMIC ACTIVITIES

Access to water and a safe and private place to defecate prevents needless hours being wasted seeking these facilities; fuel-efficient stoves can reduce the time or money used to obtain firewood. If water resources are optimally used, with appropriate amounts allocated to different activities and without degradation of the quality or quantity of water available, eco-



conomic gains can be further enhanced. Improved health means more time and energy for productive activities such as agriculture, livestock rearing and employment.

**REDUCED BARRIERS TO
EDUCATIONAL ACHIEVEMENT**

Access to safe water at home and school prevents children (especially girls) from losing valuable learning time or dropping out of school completely to fetch water. The availability of toilets with facilities for washing and drying sanitary cloths at schools, encourages adolescent girls to continue their education. Children that are healthy enough to attend school and concentrate have a better chance of achieving their potential in education.

**SAFETY AND EMPOWERMENT
OF WOMEN AND GIRLS**

Women and girls bear the brunt of the burden of water fetching, face greater risk of assault when fetching water or seeking a place for their toilet needs, and are the most exposed to the smoke from cooking fires. Providing safe access to improved Environmental Health services, such as nearby water supplies, household toilets and improved cooking stoves therefore reduces the risks and burdens they face, providing for improved health and more time for productive, educational, and social activities. Women's and girls' inclusion in decision making around Environmental Health activities also provides the opportunity for an increased influence on decisions that have a profound impact on their quality of life.

EFFECTS

The effects will generally be the specific objectives or purpose of an individual project. Therefore, they are at the heart of whether a project is successful or not. The goal/s being served should be the guide as to which effect/s is/are emphasized. Project strategies do not need to contain verbatim copies of these effects, but rather should be guided by them.

The effects of the Environmental Health Sector Framework are achieved through the program *elements*, as described below:

**SAFE ENVIRONMENTAL HEALTH
PRACTICES WIDELY ADOPTED**

Ready access to the essential services, goods and facilities required, combined with continued and effective promotion, leads to widespread adoption of targeted safe practices. Strong institutions support continued access to well functioning services and continued promotion, ensuring that safe practices are sustained.

**EQUITABLE USE OF SUSTAINABLE
ENVIRONMENTAL HEALTH SERVICES**

The context determines which Environmental Health services are essential to save lives and support future development. Services are located so that all community members can access them without putting themselves in danger, are designed so that all can use them without undue strain or injury, and are affordable to all. Suitable promotion encourages appropriate use. Strong institutions ensure that services continue to function and are accessible and affordable to all.

OPTIMAL USE OF WATER RESOURCES

When communities are engaged in assessing their water resources situation and designing solutions such as catchment management activities and rules for sharing of common water resources, these solutions will be locally understood and supported. Community water resources management practices can be codified in local institutions (byelaws) and enforced by locally appropriate community mechanisms. The strengthening and linking of relevant community and local government organizations and initiatives helps to ensure that local and large-scale catchment management initiatives follow a coherent strategy and that communities understand and contribute to the wider strategy.



THE PROGRAM ELEMENTS

For communities to carry out the practices described in the *effects* a number of elements are needed. They need to have the knowledge and motivation (through promotion activities) to carry out such practices and access to the services required to do so. These services must be sustained throughout, and beyond, the life of IRC interventions, through strong institutions. In the special case of water, an environmental resource, the community needs to be empowered to act to protect, conserve and appropriately share the resource to ensure that it is available with the required quality and in the required quantity for present and future generations. The *elements* of the Sector Framework are described below.

**PROMOTING SAFE ENVIRONMENTAL
HEALTH PRACTICES**

When individuals and communities adopt safe Environmental Health practices they will reduce their exposure to infectious diseases and enjoy additional

benefits such as increased convenience and safety. Some of the most important life-saving practices promoted in IRC Environmental Health programs are:

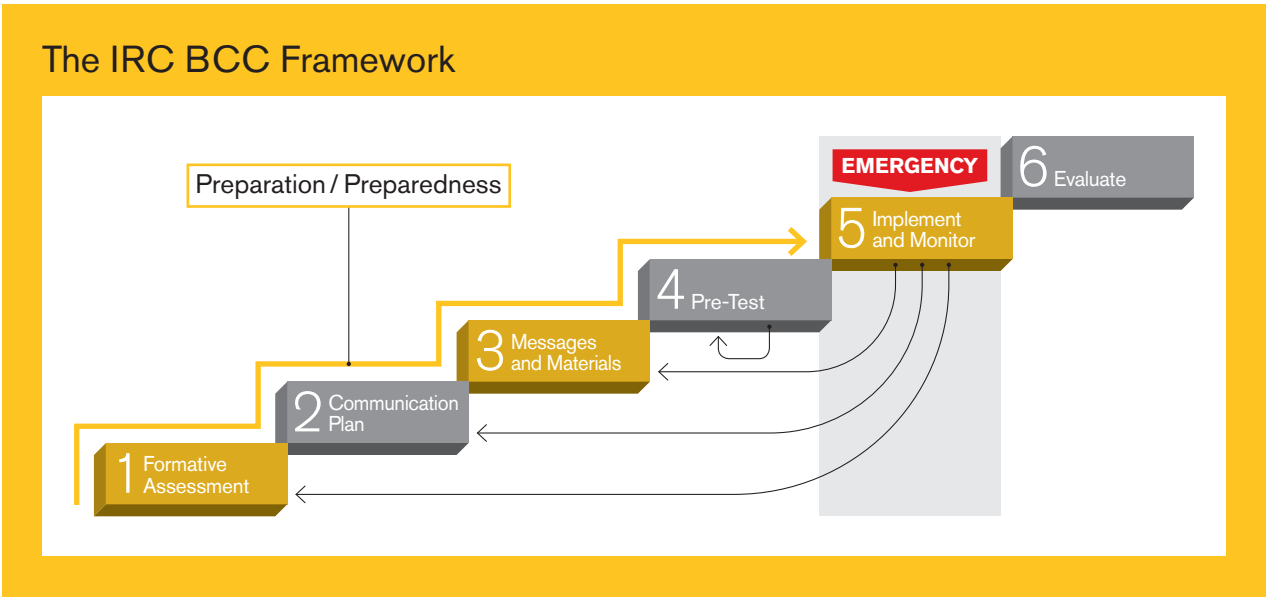
- 1 Safe disposal of (adult's and children's) feces;
- 2 Ensuring that all water that is consumed is safe by selecting an appropriate source, and transporting, storing, drawing and treating it appropriately;
- 3 Washing hands with detergent at critical times: after defecation or handling children's feces and before preparing food, eating or feeding a young child;
- 4 Ensuring that all consumed food is safe by preparing in a safe manner, cooking thoroughly and storing leftovers in a safe manner;
- 5 Avoiding smoke accumulation in homes by using 'clean' stoves and ensuring adequate ventilation;
- 6 Preventing vector-borne diseases, such as malaria, by preventing contact (e.g. using insecticide-treated bed nets) or controlling vectors (e.g. eliminating stagnant water from areas frequented by people).

It is important that good practices are adopted by the majority of the community to achieve a positive health impact. Safe practices are often neither automatic nor particularly practical. The process of determining and acting on the best means of engendering improved behavior is called Behavior Change Communication (BCC). IRC takes a systematic approach to Behavior Change Communication involving six key components of BCC, which comprise its BCC framework (see below).

IRC's BCC process begins with formative assessment (step 1), using qualitative and quantitative methods to identify the key risky practices and collect information that will help determine which behaviors to target and which messages and communication methods to use. A communication plan is developed (step 2) that incorporates approaches that prevailing evidence suggests are effective and that formative research suggests are appropriate to the context. Once the communication plan is ready, appropriate messages and materials are developed

(step 3), field tested and revised (step 4) before implementation of the plan begins (step 5). Behavior change is evaluated (step 6) using indicators that have demonstrated validity and methods that are accurate and reliable. As behavioral change is highly context specific, monitoring at regular intervals during implementation is required to assess whether progress is being made against benchmarks in the BCC strategy.

In the acute phase of a rapid onset emergency, it will often be necessary to take immediate action to mitigate key health risks, stepping straight into implementation and monitoring (step 5). Priority messages, based on a rapid appraisal of the situation, are rolled out with the resources immediately available. When the situation stabilizes a more comprehensive formative assessment can be conducted and a more structured communication plan can be developed, followed by well-conceived messages. In areas where emergencies are common or anticipated, steps 1 through 4 can be undertaken as an emergency preparedness



activity. Regardless of how much formative assessment has been undertaken, it is necessary to carefully monitor the effectiveness of the messages and methods used. The formative assessment, communication plan, messages and materials will then need to be revised accordingly.

IRC may work in partnership with academic or private sector organizations to conduct formative assessments and design BCC programs. To achieve behavioral change on a large scale, IRC partners with state, civil society and private sector organizations, leveraging the authority and reach of the state, specific skills of the private sector and civil society's relationship with, and understanding of, communities.

ENSURING ACCESS TO ESSENTIAL ENVIRONMENTAL HEALTH SERVICES

Essential Environmental Health services are facilities, activities and goods that will save lives, prevent suffering or marginalization, and preserve dignity in the given context. EH services may save lives directly or indirectly, by preventing disease, increasing personal safety, improving food security or providing minimum conditions for human development.

IRC ensures access directly by providing services, through construction of infrastructure or distribution of goods, or indirectly by stimulating and equipping individuals and organizations to provide services. Examples of direct service provision include the construction of water points and latrines, and the distribution of household water filters. Examples of indirect service provision include behavioral change communication efforts that focus on motivating individuals to construct latrines whilst facilitating new social norms that make open defecation unacceptable, and programs that train local artisans to construct water storage vessels to facilitate safe storage and small-scale rainwater

harvesting to increase availability.

IRC provides Environmental Health services that are accessible to the whole population. This means that they must be designed in consultation with the users, ensuring that vulnerable groups (such as women, children, marginalized groups, the disabled and people living with HIV/AIDS) are consulted and their needs incorporated into intervention designs. No users are inhibited from benefitting through overcrowding, inappropriate design, prohibitive user fees, unsafe access or excessive distance. Strong institutions (see next program element) support and sustain services and the ongoing community engagement required to ensure services are managed in such a way that they're accessible to all.

Selecting the right service level or technology is crucial in ensuring that the services provided are used and for the duration that they are designed. IRC ensures that all segments of the community are consulted and that the advantages and disadvantages of the technology options available are clearly explained to the community. These actions ensure that selected solutions are suitable for, and acceptable to, the whole community.

STRENGTHENING INSTITUTIONS TO SUPPORT AND SUSTAIN ENVIRONMENTAL HEALTH SERVICES

The continued functioning and use of Environmental Health services is dependent upon the institutions that sustain them. In this framework, the term institution covers organizations, and the practices and rules (both formal and informal) that govern behavior. IRC works to ensure that organizations have the members and resources required, and that they are accountable and responsive to the people they serve. At the same time, IRC strengthens the customs, byelaws and regulations that facilitate continued and equitable use of Environmental Health services.



IRC cultivates the following attributes in Environmental Health-related organizations:

- An appropriate and clear organizational structure;
- An appropriate and clear set of policies;
- Management capacity (decision-making, oversight of staff and activities, appropriate information flows);
- A transparent and effective process for recruiting new staff/members;
- A membership with adequate technical skills;
- Financial management capacity;
- A rapport with the public and its clients through responsiveness and non-discriminatory operations;
- Resources required for its function;
- Relevant relationships with other organizations;
- Effective conflict resolution mechanisms.

IRC strengthens the capacity of state, private sector and local non-governmental organizations that support communities' Environmental Health services.

Strategies to build capacity include facilitation of membership recruitment, assistance with putting procedures in place, transfer of resources, training, and strengthening links and working relationships with other organizations. IRC also seeks to ensure that the members and staff of state and civil society organizations are suitably incentivized to be responsive and accountable to the people they serve. Strengthening local private sector organizations includes facilitating access to technical and business training, finance, and a viable market for the goods and services they produce which contribute to sustained Environmental Health services.

IRC cultivates practices and rules that support effective, equitable and sustainable service delivery. Regulations and enforcement mechanisms are fair and will not marginalize vulnerable members of society. The responsibilities and decision-making processes of relevant organizations are publically disseminated to facilitate transparency and accountability.

For example, water supply management organizations should publicize the process by which water supply tariffs are set. IRC ensures that Environmental Health service providers and facilitators establish channels for all community members to express their needs in an effort to hold their service providers accountable. For example, these channels might include request and complaint procedures or regular public meetings.

IRC fosters an inclusive approach to service provision, ensuring that all those affected have an input into the decisions made. IRC ensures women's participation in decision making by promoting their inclusion in key decision making positions whilst providing training and

mentoring to support them in their roles. Where necessary, IRC may use separate mechanisms for women's representation and will offer support to community based organizations that help women voice their needs.

PROMOTING COMMUNITY PARTICIPATION IN WATER RESOURCES MANAGEMENT

Water is a vital resource that interacts with other agents that affect Environmental Health. It is needed for drinking, cooking and good hygiene. Water can be contaminated by excreta, wastewater, medical waste, agrochemical products, industrial waste, run-off water, garbage and carcasses, leading to disease





FIELD EXAMPLES

PROMOTING SAFE PRACTICES IN ETHIOPIA

When IRC began working in Hadiya zone in November 2009, barely a fifth of the population owned a latrine and very few washed their hands with soap at critical times. Many of the communities are remote and the local district Health Office struggled to increase latrine coverage and promote hygiene. Seasonal diarrhea outbreaks affected many people.

IRC assessed the local context, practices and communication channels and concluded that strengthening the local Health Service Extension Program was the most effective way to promote and sustain improved behavior. IRC organized meetings in which local Health Office staff and community members developed a strategy. Existing Community Hygiene Promoters were trained and used various promotional tools provided by IRC to increase awareness of the importance of latrine use and hand washing with soap, trigger disgust towards defecation in the open,

and stimulate community action. Elected Sanitation and Hygiene Committee members provided follow up messaging and support to five households each, whilst two Health Extension Workers provided guidance and advice for efforts in each community.

The results of the strategy demonstrate what can be achieved by supporting local government workers and programs that are trusted by communities. Nine months after the project began, almost 90% of households had their own latrine, and the number of people regularly practicing hand washing had increased six times. Community members and health office staff expressed great pride in their achievements and vowed to continue until all communities were free from open defecation, key hygiene practices were adopted by all and diarrhea in children is all but eliminated. In Soro district, which is frequently affected by diarrhea outbreaks, communities in which IRC worked were free from diarrhea outbreaks in the year after the project.



ACCESS TO SAFE WATER IN MYANMAR

In October 2010, Cyclone Giri struck Myanmar causing flooding that destroyed some water sources and left others contaminated with seawater. IRC responded in Rakhine State, providing chlorinated water for 72 villages. Before the cyclone, water from traditional community ponds would run out in the dry season. People wasted time making multiple trips to collect unsafe water and lacked appropriate and affordable means of transporting, storing and treating the water. IRC helped solve these problems by achieving year round, convenient access to safe water.

IRC constructed or rehabilitated traditional community ponds and trained people to estimate water reserves and community water demand. They now reserve water for drinking during periods of low rainfall. IRC distributed aluminum water collection jars, which are easy to keep clean, and trained over 500 people to make low-cost 200 liter cement

water storage jars. Costing only \$7, these jars are an affordable substitute for the popular traditional clay jars, which, at \$30, many cannot afford. Within six months, the local people produced more than 8,000 jars. IRC provided locally manufactured ceramic filters to over 7,000 families, and conducted demonstrations and follow-up visits to ensure their correct use to produce safe drinking water.

Multiple benefits of fuel-efficient stoves in Pakistan
In 2009, IRC introduced fuel-efficient stoves to families living in Jalozi Camp in the northwest of Pakistan. The families had fled their homes and abandoned their possessions, due to fighting between the Pakistani army and the Taliban. Having realized that wood fuel was a major expense for these families, IRC provided improved stoves and insulated cooking sets, and trained people to cook in an energy-efficient way.

The stoves proved very popular and reduced the use of fuel wood by almost a half. There were other benefits. Families explained that women and children now spent less time collecting wood, allowing them to take part in other activities. They also no longer had to cook in a cloud of smoke and felt healthier as a result. Many families built covered kitchen areas, providing a sheltered and clean area for cooking, rather than cooking outdoors in all types of weather.

Building on this success, IRC provided stoves to families affected by the severe floods of 2010. After getting feedback from users, IRC adapted the stove design to include a water boiler, providing safe drinking water 'on tap' for families whose water supplies had been contaminated by the flood waters.

To date, IRC has provided stoves to over 10,000 families who now enjoy the multiple benefits of fuel-efficient cooking.

**MULTIPLE BENEFITS OF
FUEL-EFFICIENT STOVES IN PAKISTAN**

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**STRENGTHENING COMMUNITY BASED
MAINTENANCE OF WATER SOURCES IN UGANDA**

In September 2008, IRC handed over 49 boreholes equipped with hand pumps to local communities in northern Uganda. The hand pumps were previously managed by IRC to serve Sudanese refugees living in Ikafe and Kiryandongo. The communities and local government feared that the hand pumps would eventually fail because the nearest spare parts depots were located over 180km away, making the cost of transport prohibitive for frequent purchase of small volumes of fast-wearing pump parts.

With local government support, IRC established two local spare parts depots. Water User Groups operated at sub-county level to ensure the maintenance of water systems, but tended to only be

active in areas with larger piped water systems. IRC engaged with previously inactive Water User Groups, providing them with seed stocks of spare parts and training on leadership and business development so that they could provide a profitable repair service at an affordable price.

The initial stock provided by IRC enabled the Water User Groups to respond promptly to the communities' spare parts needs, whilst only needing to replenish periodically from regional depots, reducing the cost of transport. The ability to be responsive to communities' spare parts and maintenance needs led to increased demand from communities and generated sufficient revenue. As a result, the Water User Groups were transformed into viable businesses. These communities continue to access water from their hand pumps.

if consumed untreated. It can also provide a habitat for certain disease vectors and has an important bearing on site selection and planning - for refugee camps, for instance. Water is also an important component of the environment, essential to sustaining habitats and preventing irreversible changes that will ultimately limit livelihood and water supply options available to future generations.

Global population growth is driving increased water consumption and increased production of domestic, industrial and agricultural waste products that contaminate bodies of water. As a result, water sources are being depleted and polluted. Environmental degradation and climate change exacerbate these two water problems. In a competition for increasingly limited and poorer quality water resources, it is the poor and marginalized that suffer most. This is because they tend to live in the areas most vulnerable to reductions in the quality and quantity of water available, yet have little or no influence over the decisions that affect water resources.

Community participation in water resources management is important for several reasons. Firstly, it increases a community's influence over water resources management decisions that often affect them the most. Secondly, communities are best placed to identify the course of action that best meets their priority needs and have the best chance of success. Finally, improving water resources management will usually require new activities or changes in practices by community members. Therefore, their involvement in decision-making is needed to increase their buy-in and cooperation.

IRC promotes community participation in various aspects and activities of water resources management. The goal is to help communities understand the water resources available, participate in decision making and planning for water resources management activities, and participate in the implementation of those activities. The scope of IRC's efforts will de-

pend upon the level of water stress and the complexity of the problem and its physical, social, economic and administrative dimensions.

When designing a water supply intervention, IRC makes an inventory of the existing local water sources. IRC shares the inventory with the community (e.g. as a map) and discusses key characteristics of existing water sources, such as their seasonal reliability, water quality and potential yield. Using this information, IRC helps the community to identify water supply improvement options and to understand the pros, cons, costs and benefits of each. The focus is on maximizing the benefits for the community with the resources available, while protecting the water resources from overexploitation and pollution, and keeping the operational costs to a level the community can afford. In the case of groundwater investigations for borehole drilling, the data gathering involves complex scientific techniques and decisions are largely driven by the predicted probabilities of successful drilling at the various potential borehole locations. Nevertheless, IRC ensures that the community understands the various options and is satisfied with the decisions made regarding where to drill.

In certain situations, large populations abstracting large volumes of water, arid climate, intense or recurrent drought, and high levels of pollution place stress on water resources. In such cases, IRC promotes a more comprehensive and coordinated approach to water resources management through the following measures:

- Advocating with the state, donors, communities and other actors for a coordinated approach, including the collaboration of the state, communities and other key stakeholders in the development of a community water resources management plan;
- Facilitating or conducting a comprehensive assessment of the water resources, ensuring that communities are engaged;

- Advocating for community based water resources monitoring (in particular, groundwater monitoring where relevant), and providing training, equipment and technical support to communities and state agencies for the recording and interpretation of data;
- Advocating and supporting community participation in the development, implementation and oversight of rules and regulations for water use;
- Training communities and other key stakeholders in water resources management, including the planning, negotiation, and specific strategies such as the concurrent use of surface and groundwater sources, multiple use water systems;
- Facilitating the development of conflict resolution mechanisms around water resources issues by communities.

Community participation in water resources management planning will ensure that plans involve clear and immediate benefits that will promote sustained action. Examples of water resources management activities that IRC supports communities to implement include:

- Development and implementation of water safety plans;
- Advising communities on the proper siting of latrines, soakaways and wastewater disposal facilities;
- Rainwater harvesting;
- The introduction of water saving technologies such as drip irrigation;
- Protection of water sources from flood damage through appropriate siting or structural measures;
- Construction of sand dams or subsurface dams to improve water retention in and around stream beds;
- Catchment management approaches, such as afforestation and soil conservation, ensuring that they will have immediate benefits of increased productivity in addition to longer term enhancement of recharge to water sources.

PROGRAMMING CONTEXTS

The purpose of this section is to provide an illustration of the range of contexts that IRC works in and the types of activities it typically implements in different contexts. In reality situations evolve, and there will be periods of transition between one type of context and another. More than one of the programming contexts described here may exist at a time in a particular country or even in a particular locality of one country. For example, an acute emergency might occur in a pre-existing post-conflict context, in the form of a natural disaster or a local flare up of conflict. In this case the need to ensure an at scale, prompt response needs to be balanced with the opportunity to support community mechanisms for service delivery that may have been cultivated during IRC's post-conflict programming. When an emergency, post-conflict or reconstruction context is found in an urban setting, the program strategy will need to deal with the lower social cohesion, higher population densities, higher technology levels, higher specified standards for services and higher population expectations.

The tables that follow the narrative give a brief summary of each type of programming context, with typical Environmental Health priorities and activities for each. The urban setting is not included in the tables as programming will be highly variable and will depend on which, if any, of the other programming contexts are occurring.

ACUTE / RAPID ONSET EMERGENCY

IRC responds to acute emergencies by providing facilities and services that are essential for life, personal safety and dignity, such as clean water, safe, easily accessible defecation areas and toilets and key hygiene products. Whenever large populations are crowded into areas with poor hygiene and sanitation, aggressive hygiene promotion, rapid organization of safe defecation options and careful attention to water

quality would be instigated as soon as possible to minimize the risk of diarrhea outbreaks.

Other Environmental Health issues are assessed at the same time and actions taken to minimize risks. For example, when a population with little previous exposure to malaria has been displaced to a malarial area, key Environmental Health measures to consider would be bed net provision, residual spraying, and promotion of protective practices such as correct bed net use, elimination of stagnant water, and covering bare skin during the times the mosquito vector is active.

IRC also responds to natural disasters in countries or regions where it has operations supporting conflict affected populations or where the sheer scale of the disaster overwhelms national disaster response capacity. Rapid onset natural disasters present an acute emergency. Slower onset disasters, such as drought, may result in acute emergencies, but improved warning, preparedness and disaster risk reduction provide opportunities to reduce the intensity and duration of the acute emergency phase or, in some cases, to eliminate it altogether. For example, USAID's Famine Early Warning System Network (FEWSNET) provides early warning of food security crises as well as communication and decision support products to help decision makers avert looming famines.

PROTRACTED / SLOW ONSET EMERGENCY

A protracted emergency is when the situation stabilizes following an acute emergency and the immediate threat to life is reduced or when a response to a slow onset crisis, such as a drought, famine or low-level conflict sufficiently addresses the population's evolving needs and prevents large-scale loss of life. Because displacement, insecurity and/or rights abuses continue, affected people require ongoing support to prevent suffering and heightened morbidity and mortality. Repeated natural disasters may result in chronically impoverished communities. For Envi-





technical support/oversight will be necessary. Ideally, water supply improvements can be linked to other Environmental Health activities such as sanitation, hygiene promotion, vector control, etc. leading to more comprehensive community health improvement.

ENVIRONMENTAL HEALTH IN URBAN SETTINGS

Today worldwide urbanization is an unstoppable characteristic of global societal change. The world's urban population now exceeds the world's rural population and according to predictions, by the year 2025 at least two thirds of the world's population will live in cities. Most of this urban growth is taking place in the developing world, where two billion people already live in cities – the majority residing in informal urban settlements and slums¹. The UN estimates that 2 billion people will be living in slums by 2030.

Rapid urbanization in developing countries is outpacing governments' capacities to provide the necessary Environmental Health infrastructure and services. This leads to extremely unhealthy living conditions especially in informal urban settlements and slums. Lack of adequate, affordable and safe water; few functional toilets and inadequate ventilation cause high child mortality rates, widespread epi-

demic, illness and chronic diseases. Health indicators in urban slums are often worse than those of rural villages in the same country.

Environmental Health programming in urban environments requires a different approach than rural and displaced camp environments. Social cohesion is limited in many urban communities so that community mobilization requires working in partnership with local organizations. IRC works in partnership with local NGOs that have strong relationships with Community-Based Organizations (CBOs); the latter are crucial for implementing an Environmental Health program that requires an in depth understanding of local challenges and power-relations.

Effective solutions in slums are market-oriented, ensuring that key stakeholders, such as facility operators and landowners, are adequately compensated. The role of municipal institutions is critical in providing clean water especially in cases where they are the only local actors with the capacity to ensure ongoing service provision. In urban slums preventing water theft and illegal cartels from gaining control of the water supply involves reorienting clean water provision around small-scale public-private partnerships that operate legally and have a suitable cost recovery system in place.

1. A slum is a run-down area of a city characterized by substandard housing and squalor and lacking in tenure security (UN-HABITAT), whereas an informal settlement is a slum settlement (sometimes illegal or unauthorized) of impoverished people who live in improvised dwellings made from scrap materials.

CONTEXT	DESCRIPTION	ENVIRONMENTAL HEALTH PRIORITIES	EXAMPLE APPROACHES AND ACTIVITIES
Acute / rapid onset emergency	Natural disaster or conflict cause mass destruction and/or displacement. Affected population living in camps, insecure conditions or destroyed communities, resulting in lack of access to essential Environmental Health facilities and services and loss of traditional survival mechanisms. Population will likely suffer from disease, heightened mortality, food insecurity, impoverishment and physical abuse/attack without external support.	<ul style="list-style-type: none">■ Provision of 5-7.5 l/p/d safe water immediately and at least 15 l/p/d as soon as possible■ Designation of safe defecation areas followed by provision of emergency latrines and handwashing points as soon as possible■ Provision of soap and other essential hygiene items■ Hygiene campaigns focused on the key risks■ Vector control where necessary	<ul style="list-style-type: none">■ Emergency water treatment, storage and pumping equipment mobilized and installed■ Water trucking■ Distribution of water storage containers■ Flat pack latrines and designation of defecation areas and fencing off with tarpaulin privacy screens, followed by timber and plastic sheeting structures■ Hygiene promotion focused on existing knowledge / experience of affected population, or on promoting the health benefits if population unknown. Formative research to follow once coverage achieved■ Residual spraying and destruction of vector habitats

Flooding	Flooding over a large geographic area such that the affected population may be stranded or forced to flee to high ground. Water sources suffer microbiological and - where the floods are of marine origin - saline contamination. Toilets are also flooded and many are rendered unusable. Population may be suffering from exposure and lack access to sufficient nutrition in the immediate aftermath, increasing their susceptibility to disease.	<ul style="list-style-type: none">■ Provision of chlorinated water to whole affected population■ Disinfection (& desalination if flooded by saline water) and rehabilitation of flooded water sources■ Hygiene promotion with focus on safe water management and safe excreta disposal■ Vector control■ Temporary solutions for excreta disposal that are 'as safe as practicable'	<ul style="list-style-type: none">■ Coagulation, chlorination, storage and distribution using emergency equipment■ Bucket chlorination■ Superchlorination and repair of wells, boreholes, springs■ Hygiene promotion focused on disease risks■ ITN's, drainage or larvicide application (where flooding localized)■ Temporary latrines on high ground or over fast flowing flood waters if risk to downstream users is minimal■ Disposable defecation bags■ Portable chemical toilets■ Raised / watertight latrines■ Emergency sewerage and sewage treatment (occasionally appropriate for urban contexts)
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CONTEXT	DESCRIPTION	ENVIRONMENTAL HEALTH PRIORITIES	EXAMPLE APPROACHES AND ACTIVITIES
Outbreak	Epidemic of disease to which the affected population has little or no immunity, leading to rapid spread. Existing health services overwhelmed and unable to treat all the affected promptly.	<ul style="list-style-type: none">■ Liaise with health actors to understand epidemiology■ Provision of chlorinated water to whole affected population■ Vector control (if vector borne outbreak)■ Hygiene promotion with focus on relevant preventive measures■ Monitor spread of disease and uptake of protective measures■ Safe disposal of the dead where cadavers can be infective (e.g. cholera)■ Support to medical response	<ul style="list-style-type: none">■ Emergency water treatment, storage and pumping equipment mobilized and installed■ Bucket chlorination■ Identification, disinfection and protection of contaminated or at risk water sources■ Hygiene promotion focused on specific outbreak transmission routes■ ITNs, residual spraying, drainage of stagnant water■ Maximize access to safe excreta disposal via emergency latrines, latrine rehabilitation, excreta disposal bags,etc.■ Provision of chlorinated water & emergency sanitation to health facilities■ Roll out of oral rehydration salts (ORS)

CONTEXT	DESCRIPTION	ENVIRONMENTAL HEALTH PRIORITIES	EXAMPLE APPROACHES AND ACTIVITIES
Protracted / slow onset emergency	Acute emergency stabilizes and immediate threat to life is reduced or an emergency situation slowly unfolds and continues for an extended period. In some cases repeated emergencies or variations in intensity of the emergency may allow preparation for future events or future increases in intensity. Population displaced and/or lacking access to essential Environmental Health services and/or to normal survival mechanisms for an extended period of months, years or decades.	<ul style="list-style-type: none">■ Ensure that Environmental Health activities meet sphere standards (continually)■ Shift to more permanent infrastructure to replace emergency equipment■ Where possible shift from public to family latrines■ Hygiene promotion based on an in depth understanding of the population■ Affected population takes increased responsibility for the management of water and sanitation infrastructure■ Environmental protection strengthened	<ul style="list-style-type: none">■ Replacement of non-functional or dilapidated infrastructure to ensure adequate coverage is maintained■ Shift to permanent water storage and treatment tanks, replacement of hose with pipe, construction of permanent tapstands■ Upgrade public latrines to corrugated sheet, adobe, stone mortar, brick structures according to local preferences and feasibility■ Detailed assessment of hygiene practices and their motivations, leading to adjustment of behavior change communication plans and messages■ Water and sanitation infrastructure operated and maintained by the beneficiary community■ Environmental hazards and appropriate mitigation measures identified, in consultation with the affected community, and appropriate action taken■ Groundwater / surface water monitoring initiated where large populations rely on limited or unassessed water bodies■ Use of contingency boreholes in drought-affected pastoralist areas; subsidized fuel and fast-moving spares for a temporary period

CONTEXT	DESCRIPTION	ENVIRONMENTAL HEALTH PRIORITIES	EXAMPLE APPROACHES AND ACTIVITIES
Post-conflict / Reconstruction	Conflict or a natural disaster has led to extensive damage to homes and/or critical infrastructure, and has disrupted institutions. Conditions are improving and displaced people are returning home. The reconstruction needs, however, exceed the capacity of the affected state/s and large scale assistance is required. The scale of the damage may be such that transitional solutions are required to stabilize the situation before communities can return to the standard of living they enjoyed before the disaster. By definition follows a phase of acute or protracted emergency.	<ul style="list-style-type: none"> ■ Essential services (such as community water supplies, and water and sanitation for schools and health facilities) are restored as quickly as possible ■ Emphasis on the rebuilding and strengthening of institutions and promotion of social cohesion ■ Leverage of available capacity through partnerships and contractual arrangements with the private sector and non-governmental organizations (especially local ones) ■ Agreement, close monitoring and enforcement of appropriate standards and standardized designs and approaches, to ensure consistency with state and major humanitarian/development assistance actors 	<ul style="list-style-type: none"> ■ Reconstruction of water and sanitation infrastructure to locally approved specifications designed to resist future floods, earthquakes, droughts, etc. ■ Construction of new water points to replace those damaged, flooded or dried up ■ Construction of infrastructure in new areas of development, where decongestion is required ■ Reconstruction of Environmental Health infrastructure for health facilities, schools, etc. ■ Project implementation and/or capacity building partnerships with public sector institutions with a governance improvement component ■ Capacity building and/or strategic partnership with local NGOs and CBOs in order to support civil society's ability to fill gaps and advocate for high quality and responsive Environmental Health services-Community Driven Reconstruction, with support on construction quality standards, sustainability and complementary sanitation and hygiene promotion programs

