A Guide to Multiple-Use Water Services

Table of Contents

OVERVIEW

I. Impact of the Approach I

II. How it Works II

III. Overview of Benefits III

1 **INSPIRATIONAL EXAMPLES** 1

Example 1: Rural: Single Source for Multiple Uses 3

Example 2: Rural: Multiple Sources for Multiple Uses 5

Example 3: Urban: Multiple Sources for Multiple Uses 7

2 **PUTTING THE APPROACH INTO PRACTICE** 9

Planning 12

Implementation 19

Evaluation 21

3 **HOW TO START** 23

Call to Action 24

For Implementers 25

For Funders 26

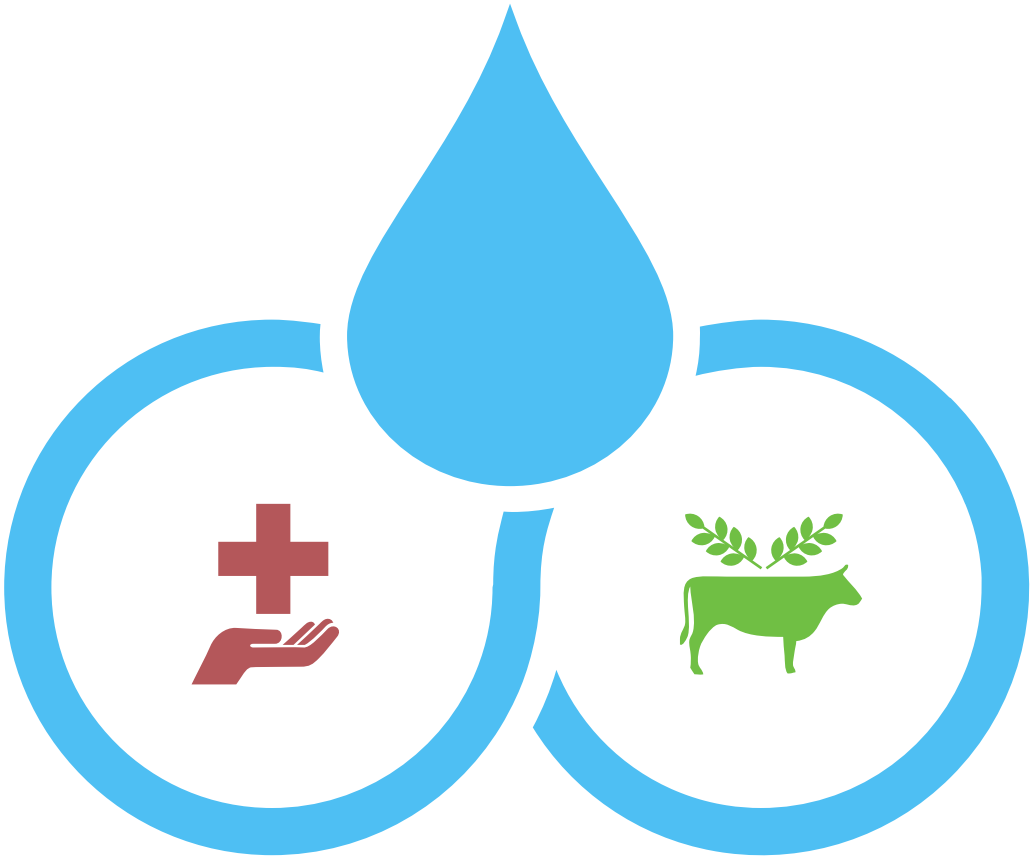
For Policy Makers 27

APPENDIX 28

Glossary 29

Acknowledgements 30

Multiple-use water services is a holistic approach to sustainable water services that improves health and livelihoods.

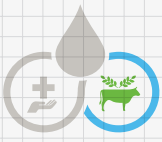


WATER

Create water services to meet people's drinking, hygiene and livelihood needs.

HEALTH

Add support programs for hygiene, sanitation or nutrition to deepen health impacts.



LIVELIHOODS

Enhance food security and income generation by adding support for crops, livestock and enterprises to expand livelihood impacts.

HOW IT WORKS.

LOOK AT PEOPLE'S NEEDS

What uses do people have for water?

Where do they use water?

What quality do they need for each use?

How much water is needed for each use?

LOOK AT WATER SOURCES

What sources are available?

Where is each source?

What is the quality of water from each source?

How much water can be sustainably used from each source?

CREATE WATER SERVICES TO IMPROVE HEALTH & LIVELIHOODS

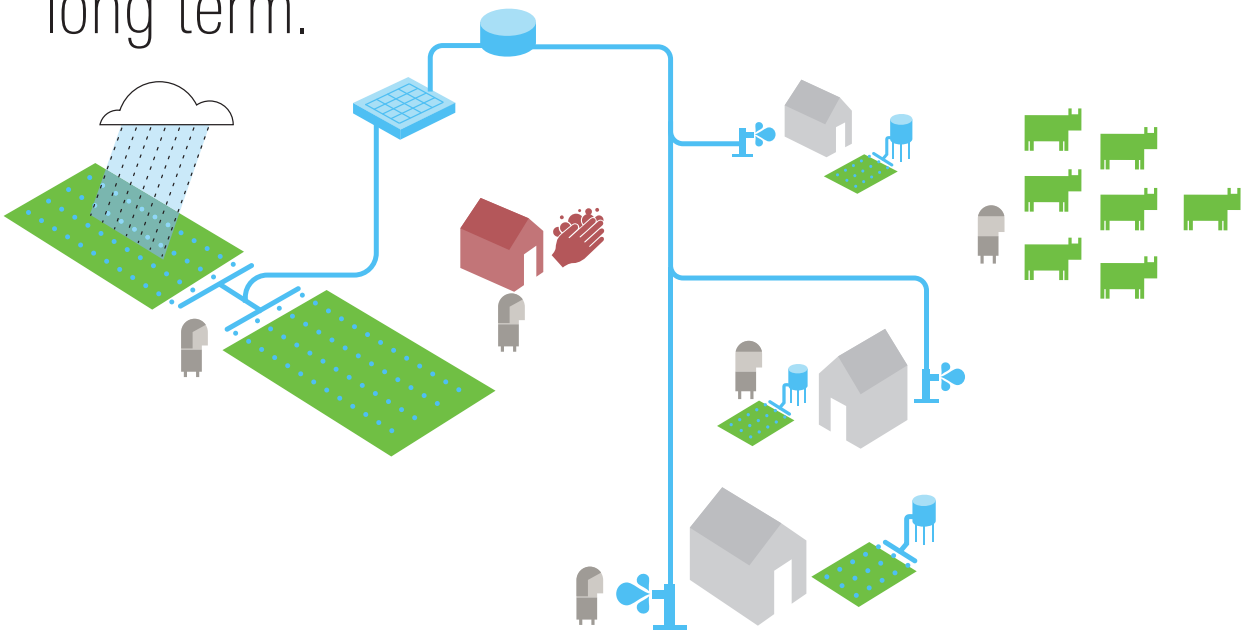
Can the sources be transformed to better meet water needs?

What types of training and management can support the water services?

How can the health benefits of water services be optimized by adding hygiene, sanitation or nutrition activities?

How can the livelihood benefits of water services be optimized by adding support for water-related livelihoods activities such as livestock, crops and enterprises?

This holistic, participatory approach to water improves livelihoods and health, increases sustainability, and ultimately improves people's lives overall. By investing a little more to address people's multiple needs, impact is maximized in the long term.



BETTER HEALTH

Safe drinking water improves people's health. Hygiene, sanitation and nutrition activities consolidate and expand health gains.

MORE INCOME

Most livelihood activities depend on water. Improving water availability and providing supporting services leads to sustainable increases in incomes and food security.

IMPROVED SUSTAINABILITY

Income generated from livelihoods activities gives users the resources and incentives to cover ongoing operation, maintenance, and repair costs, and because services better meet the needs of users, conflict over water and damage to infrastructure caused by "illegal" or unplanned uses is decreased and community investment is increased.

1

Inspirational Examples

1 Inspirational Examples

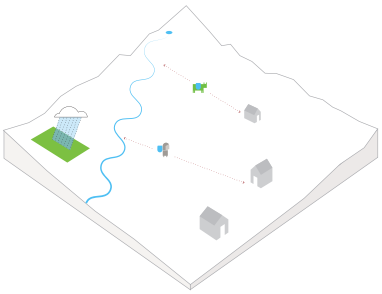
A multiple-use water services approach brings improved opportunities to a variety of contexts, from remote mountain villages to dense peri-urban environments.

The following examples showcase the multiple-use water services approach in three situations, demonstrating the tangible and intangible benefits to a community.*

1

RURAL

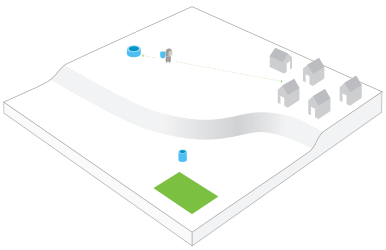
Single Source for Multiple Uses



2

RURAL

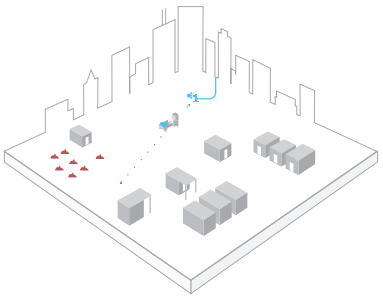
Multiple Sources for Multiple Uses



3

URBAN

Multiple Sources for Multiple Uses



* To learn more about how a multiple-use water services approach works for other conditions, visit the section “Putting the Approach into Practice.”

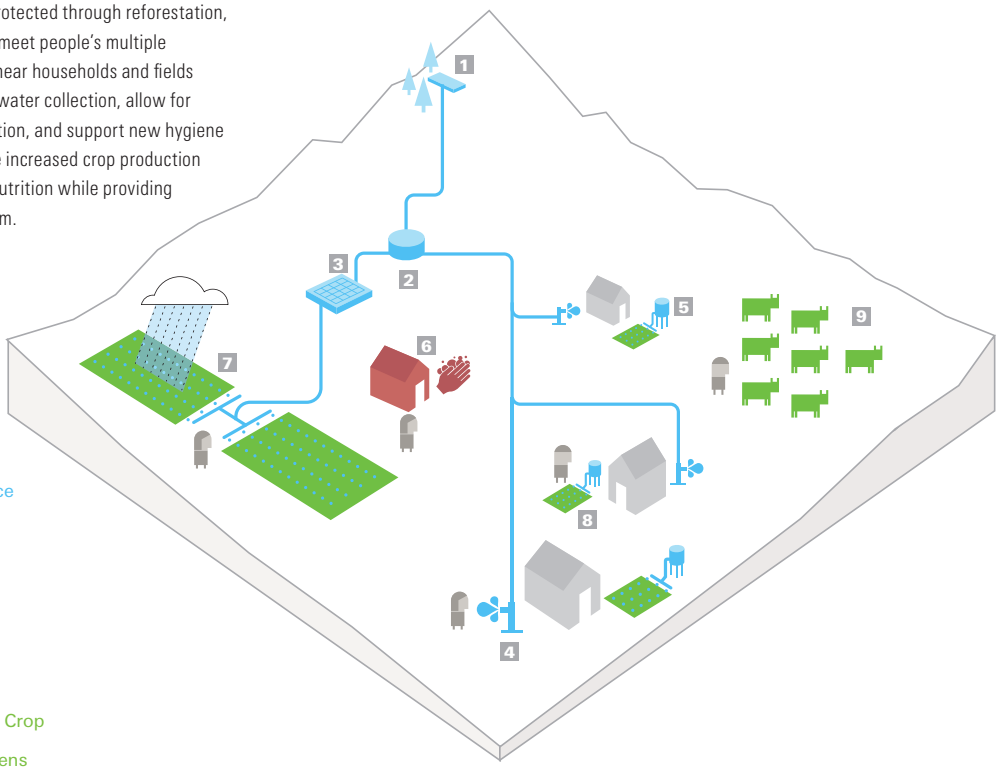
1 Example 1 Rural: Single Source for Multiple Uses

BEFORE

A distant and deteriorating unprotected spring is creating a variety of health problems in the community and limiting gardening opportunities. Hygiene and sanitation practices are poor. Deforestation is causing the source to dry up, and long travel times to fetch water are further impeding people's ability to produce food and earn a living.

AFTER

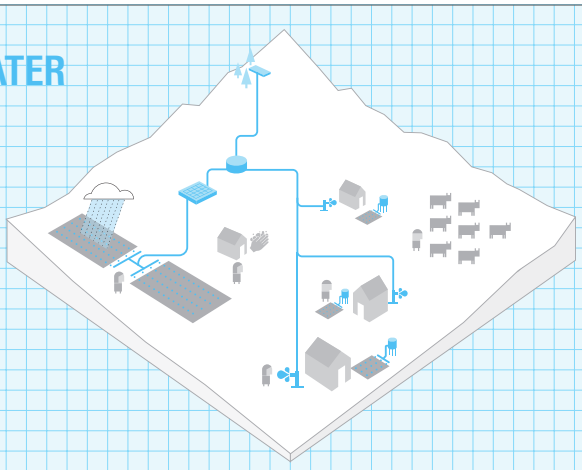
Now that the watershed is protected through reforestation, the source will more reliably meet people's multiple needs. Tap stands installed near households and fields reduce the time required for water collection, allow for off-season vegetable production, and support new hygiene and sanitation programs. The increased crop production improves food security and nutrition while providing income to maintain the system.



1 Protected Water Source
2 Village Water Tank
3 Agriculture Tank
4 Tap Stand
5 Drip Kits
6 Hygiene Promotion
7 Rain-fed + Off-Season Crop
8 More Household Gardens
9 Increased Livestock

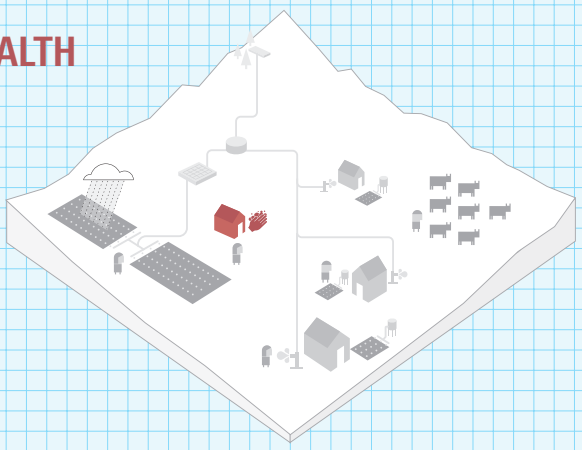
IN MORE DETAIL

WATER



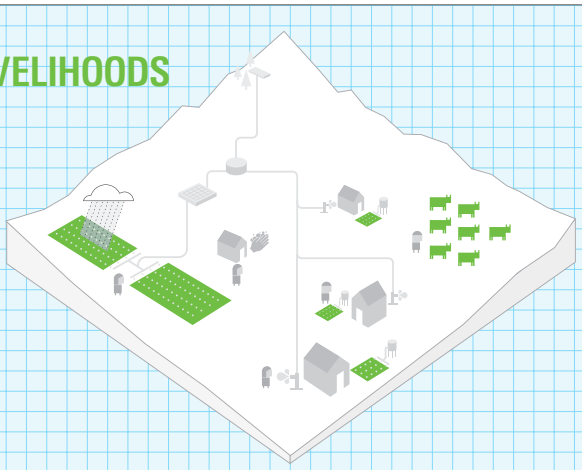
- Covered spring and closed reservoir protect drinking water from contamination.
- Watershed protection increases water supply, improves year-round reliability and ensures long-term sustainability.
- Tap stands near households greatly reduce time fetching water.
- Conflict is reduced by prioritizing household needs in water distribution.
- Increased income from gardening used to maintain system over time.
- Sustainability of water services enhanced by establishment and training of management committee.
- Support for supply chain of micro-irrigation technologies and gravity-system replacement parts.

HEALTH



- Safe water, hygiene awareness, and more handwashing reduce diarrheal disease.
- Increased adoption of latrines due to increased water availability and sanitation promotion.
- Nutrition improves from vegetable consumption.

LIVELIHOODS



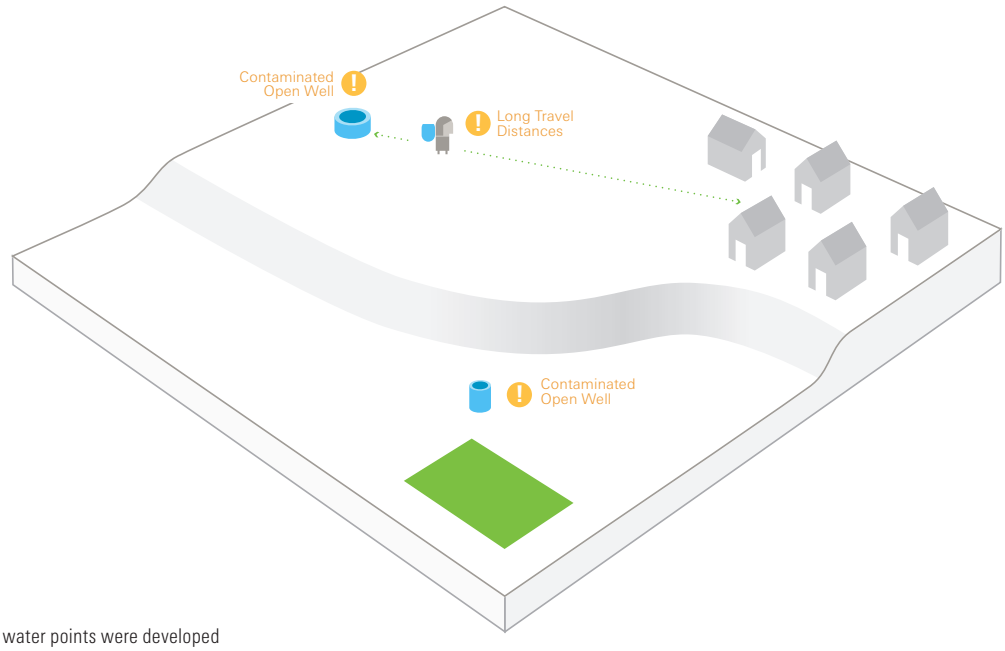
- Women's household gardens are converted to high-value crops due to increased access to water, drip irrigation kits, agricultural extension and marketing.
- Off-season water efficiency in fields is improved through micro-irrigation technologies.
- Income and food security are improved for households.
- Time saved from water collection can now be used for gardening.

1 Example 2 Rural: Multiple Sources for Multiple Uses

BEFORE

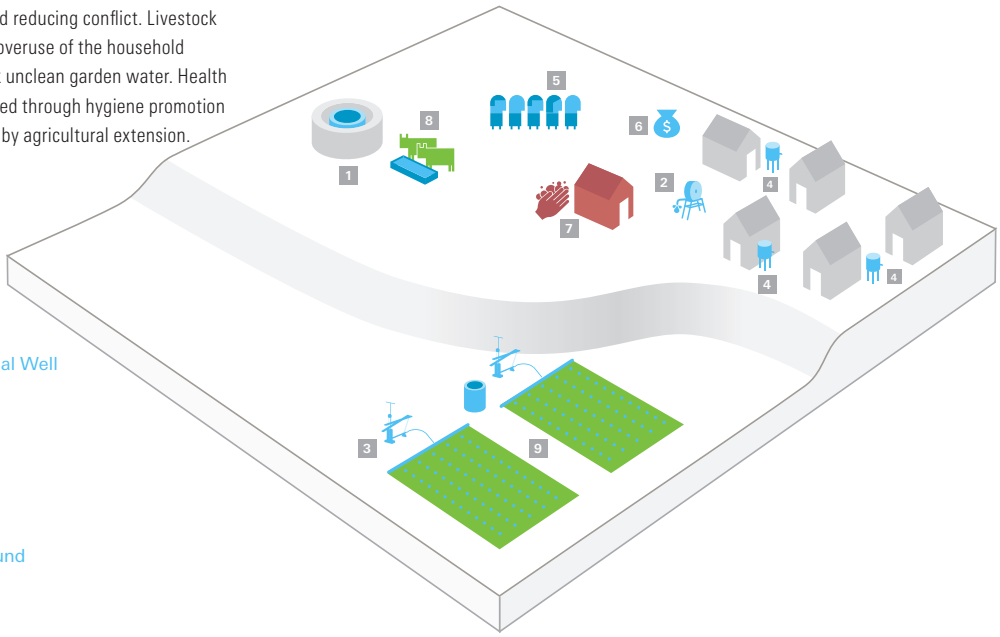
Inadequate and contaminated water is a major problem for rural communities like this one. Illnesses such as diarrhea are common because of poor hygiene practices and because livestock contaminate the open well used for drinking water. Water is a major constraint for livestock and off-season garden production.

Water
Health
Livelihood



AFTER

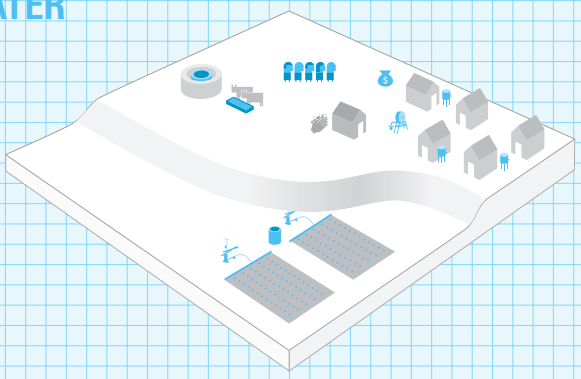
Three new and rehabilitated water points were developed for different uses: a new village pump provides safe water for household use and small livestock; a rehabilitated traditional well serves livestock; and a new garden borehole and pump are used for irrigation. Together, the three water points create the needed water services for the community, preventing contamination and reducing conflict. Livestock won't contaminate or cause overuse of the household pump, and people don't drink unclean garden water. Health improvements are consolidated through hygiene promotion and livelihoods are improved by agricultural extension.



1 Rehabilitated Traditional Well
2 Village Pump
3 Garden Pump
4 Handwashing Station
5 Water Committee
6 Water Maintenance Fund
7 Hygiene Education
8 Water for Livestock
9 Larger Irrigated Gardens

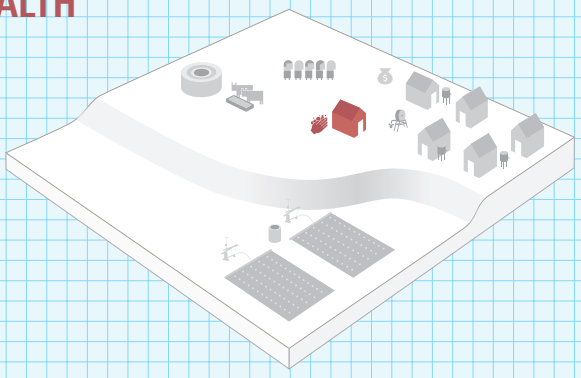
IN MORE DETAIL

WATER



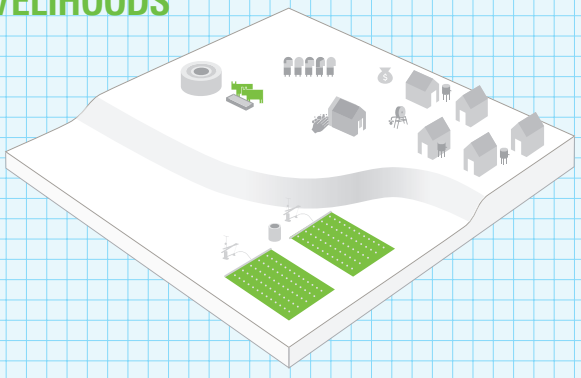
- Village pumps provide safe water for household use and for small livestock watered at the homestead.
- Rehabilitated traditional well provides water for large livestock.
- Small suction pumps provide water for irrigation.
- A committee forms to manage and maintain the infrastructure and services.
- A spare part supply chain for pumps is supported.

HEALTH



- Hygiene promotion teaches people how to keep water clean between the pump and consumption.
- Promotion of handwashing stations helps to further reduce diarrhea and other diseases.
- Nutrition improves from increased vegetable consumption.

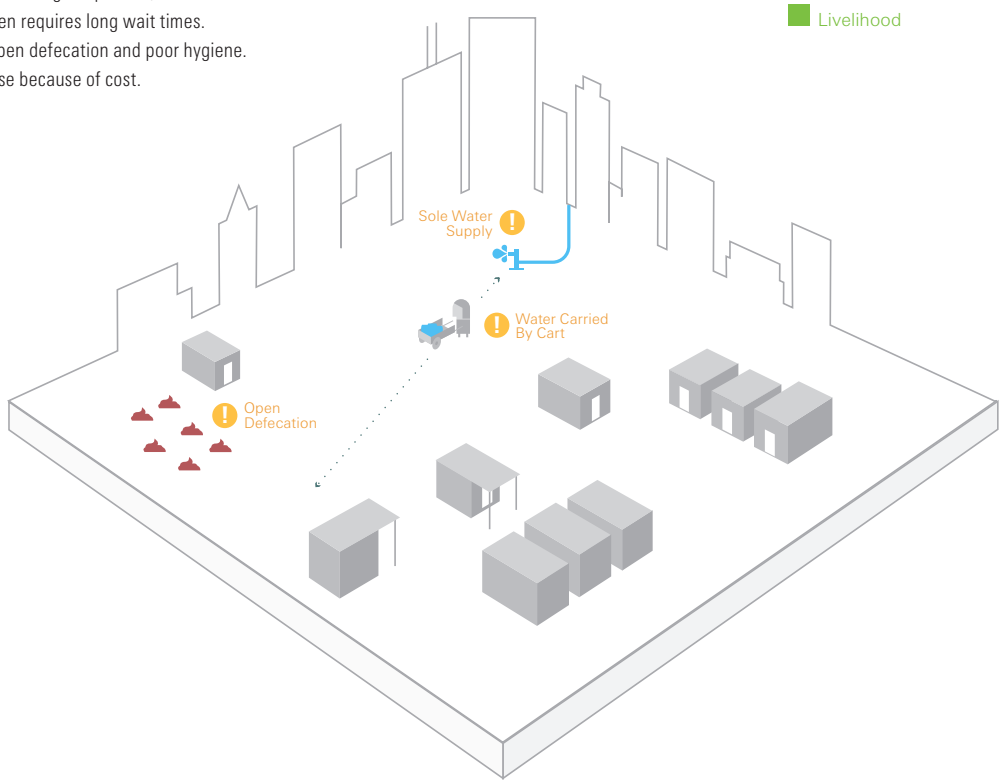
LIVELIHOODS



- Livestock productivity improves because of increased water access and veterinary extension.
- Garden size increases due to more efficient irrigation.
- Gardens produce more high-value crops due to agricultural extension, access to resources and marketing.
- Incomes increase due to improved garden production and livestock.

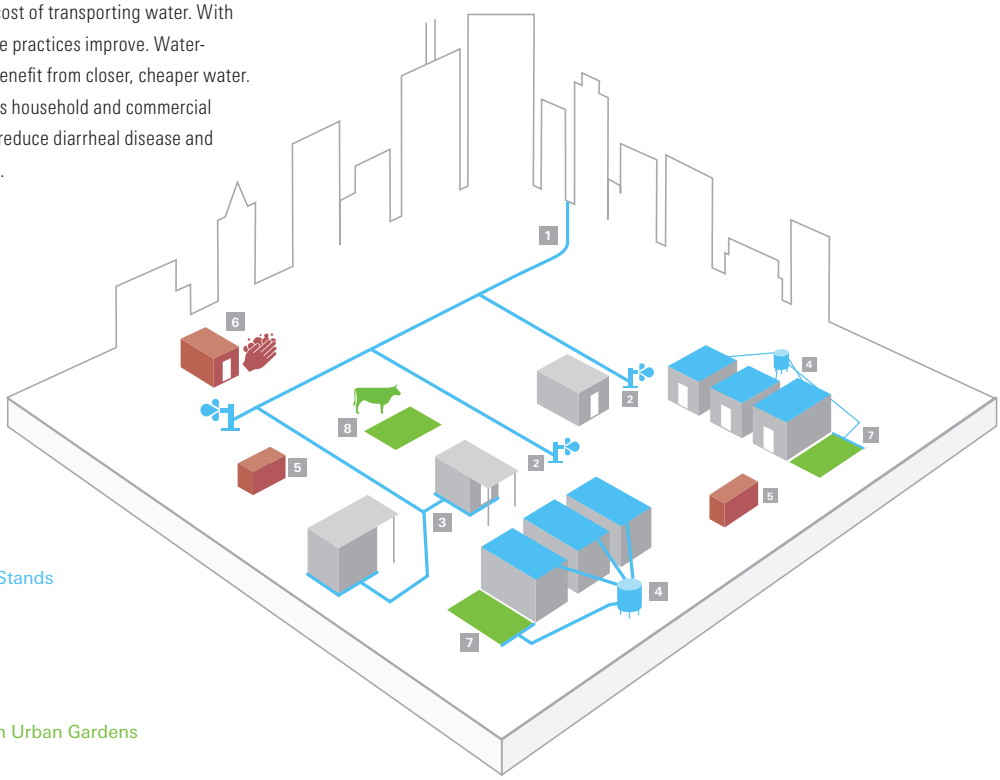
BEFORE

Potable water is available from a single tap stand, but it is distant, expensive, and often requires long wait times. Diarrhea is common due to open defecation and poor hygiene. Businesses minimize water use because of cost.



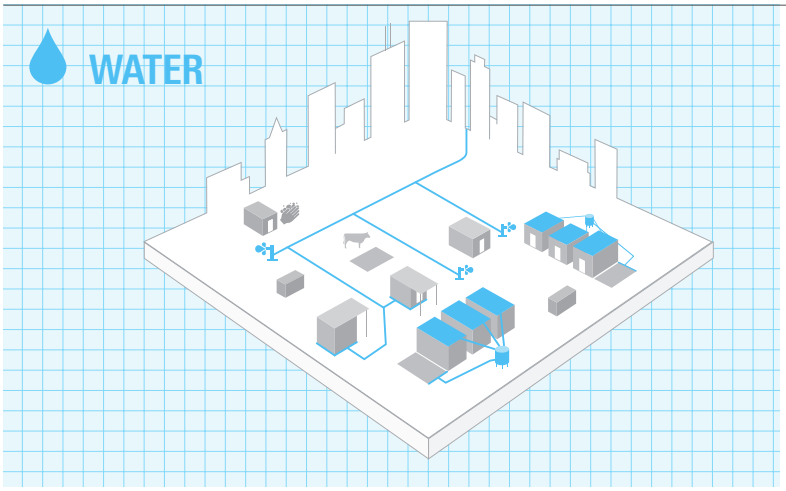
AFTER

Installing tap stands closer to households increases water availability and reduces the cost of transporting water. With more water available, hygiene practices improve. Water-dependent businesses also benefit from closer, cheaper water. Rainwater harvesting enables household and commercial gardens. Composting toilets reduce diarrheal disease and produce fertilizer for gardens.

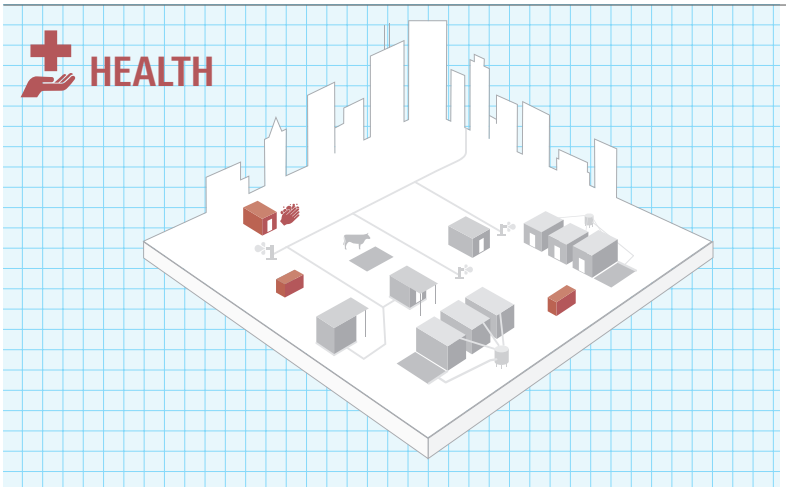


1 Urban Water Supply
2 Public Tap Stands
3 Business' Private Tap Stands
4 Rainwater Harvesting
5 Composting Toilets
6 Hygiene Education
7 Food Security Through Urban Gardens
8 Agricultural Extension

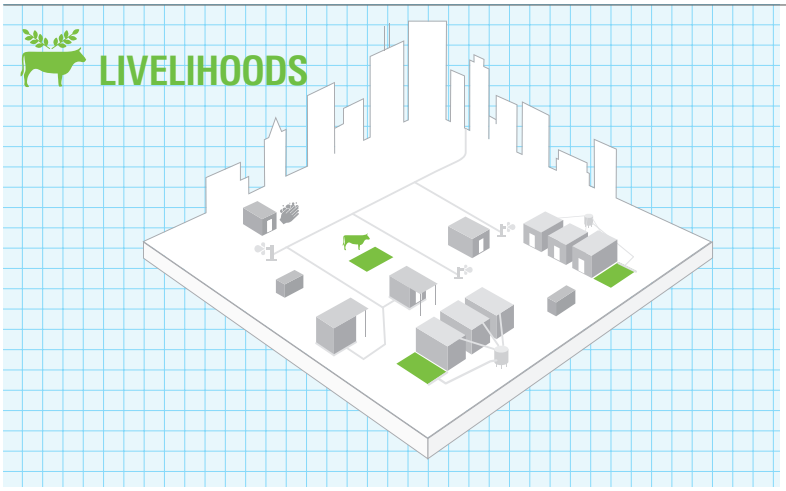
IN MORE DETAIL



- Installing more public tap stands close to households reduces time spent collecting and transporting water.
- Some businesses, such as restaurants and laundries, purchase private taps.
- Rainwater harvesting provides lower-cost water for household and commercial gardens.
- Income from gardens enables expansion of rainwater harvesting.



- Handwashing education reduces diarrheal and respiratory diseases.
- Sanitation promotion discourages open defecation and promotes latrine use.
- Increased gardening improves nutrition.



- Gardening increases due to use of rainwater and urban agricultural extension programs lead to income generation.
- Fertilizer from composting toilets makes gardens more productive.
- Water-dependent businesses benefit from closer, cheaper water.

2

Putting the Approach Into Practice

INTRODUCTION

Interested in implementing multiple-use water services? This section contains a general overview of the process for making multiple-use water services a reality. The approach is broken into three phases:

1 PLANNING

Begin with a general, participatory assessment. Assessment looks at both demand for water across all uses and the attributes of available water sources. It also considers health and livelihoods activities, government policies, and other organizations' programs.

Use the results of the assessment to design appropriate services and related activities.

2 IMPLEMENTATION

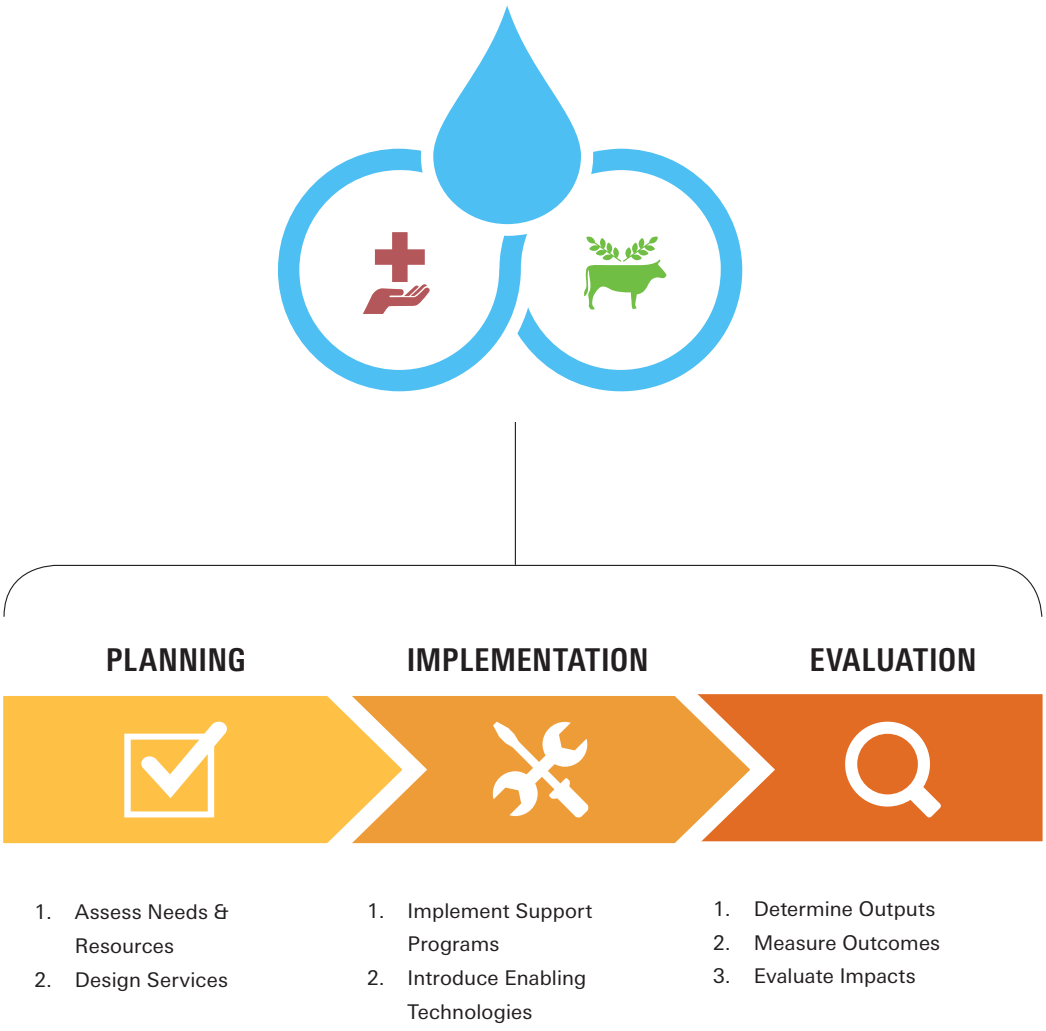
Put the integrated plan into action. Implementation involves installing or upgrading water technologies, training people to manage and maintain the water sources and technologies, supporting spare parts supply chains, and supporting health and livelihoods through additional activities.

3 EVALUATION

Measure the project's impact. After implementation, undertake a holistic evaluation to learn from the successes and the failures of the project. Engage the water users and other stakeholders in this process. Use the results of the evaluation to correct weaknesses and improve sustainability.

HOW IT WORKS

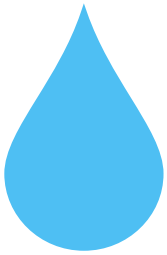
This is a visual overview of the different phases and the components involved in each phase.



PLANNING: ASSESSMENT

To figure out the appropriate service to match people's needs with the water supply and related services, undertake a general assessment process.

Here are some key considerations:



ASSESSING WATER

The process involves two key elements: assessing people's needs and desires, and assessing the water sources. Below is a sampling of the list of questions to be asked in this phase.

PEOPLE

- Who uses the water?
- What do they use the water for?
- How much water do they need?
- What quality of water do they need?
- Where do they use water?
- Are there any conflicts around water?
- Are the water uses going to change?
- Are they part of a cohesive community?
- Do they have social and financial resources to maintain water systems?

SOURCES

- What types of sources are available?
- How far away is each source?
- What quality of water is produced by each source?
- How much water can be used sustainably throughout the year?
- Can environmental protections improve the source?
- Who controls the water and land rights around the source?

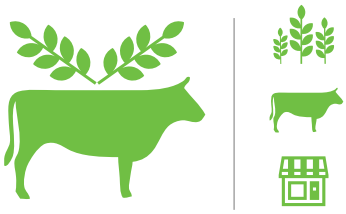
ASSESSING HEALTH & LIVELIHOODS

In addition to the water service, you can use this approach to make a deeper impact by adding health and livelihood activities. How far you go depends on the context, including the amount of time and resources available

To understand what activities are needed and desired, assess the current conditions and future potential in these areas. Below is a sampling of the list of questions to be asked in this phase.

HEALTH

- What are current hygiene practices?
- What are current sanitation behaviors?
- What are current nutrition practices?
- What resources are available for hygiene, sanitation, and nutrition?
- What prevents people from improving their hygiene, sanitation, and nutrition?

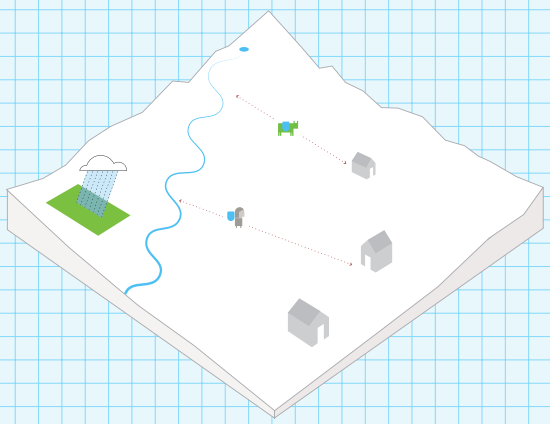


LIVELIHOODS

- What are the main crops produced?
- What are the primary livestock products?
- What are the most common water-dependent businesses?
- What resources are available for livelihoods activities?
- What prevents the various livelihoods activities from expanding?

EXAMPLE

Here are some results from the Assessment process in Example 1



WATER

PEOPLE

- Water is used for drinking, cooking, bathing, cleaning, gardening, and maintaining livestock.
- People need more water in order to do off-season gardens.
- Community is cohesive and capable of managing shared infrastructure.

SOURCE

- The only source is an unprotected spring.
- The spring is 2 hours away from the village.
- Watershed protection could increase the amount of water in the spring.

HEALTH

- Community lacks basic knowledge about how diseases spread.
- There is limited use of existing latrines.
- There is poor nutrition.

LIVELIHOODS

- Crops aren't grown during dry season because of inadequate irrigation, market links, and skills.
- Every household has a goat, but people want additional livestock for income.
- There are no water-dependent businesses.

PLANNING: DESIGN

What does a multiple-use water service look like?

Once you understand the people, their needs and desires, and the sources, you can design an integrated water service with supporting health and livelihood components. How do you decide on the right combination of technologies and supporting programs?

AS YOU DESIGN, IT'S HELPFUL TO KEEP THE FOLLOWING CONCEPTS IN MIND:

- **Desirability** – what people want
- **Feasibility** – what is technically, environmentally, and organizationally realistic to implement
- **Viability** – what is financially sustainable for people and for your organization

With this approach, you get a unique framework for developing these services. The following pages show some key components of that framework:*

DESIGN WATER SERVICES

DESIGN HEALTH ACTIVITIES

DESIGN LIVELIHOODS ACTIVITES

* Multiple-use water services isn't an all or nothing approach. You can decide how far you can go and at what pace. All services and activities don't have to be implemented at once. Prioritize based on needs, resources and capacity. Develop a timeline for implementation as part of the design process.

DESIGN WATER SERVICES

How do you choose the right combination of technologies and supporting programs?

Multiple-use water services are not about just repeating the same technology throughout a community. Choosing the right technology can be an important part of creating a successful and sustainable service by enabling a community to use the right technology for the right uses. Equally important is choosing the right supporting programs (governance, management, and training), that will enable long-term sustainability of the water services.

Use the results of the Assessment process for insights on how to create a more effective project. Understand what people want, what the water sources can provide, and what people are able to support.

Here is a basic overview of some of the most important considerations that factor into designing water services:

WATER SERVICES OVERVIEW

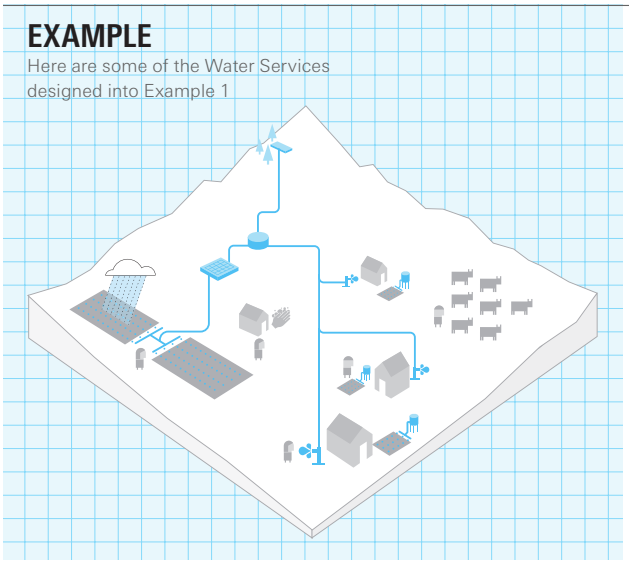
	ENABLING TECHNOLOGY	SUPPORT PROGRAMS
Watershed Protection	Micro-catchments Gully plugs Well recharge	
Source	Well Spring River Rainwater	
Storage	Catchment pond Trough Tank Reservoir	Support creation of management structures Implement management training program Provide technical training for installation, watershed protection, operation, and repair Ensure connection to spare parts suppliers
Distribution	Pipes Canals Ditches	
Lifting	Hand pump Treadle pump Motorized pump Windmill	
Treatment	Filter UV Chemical	

DESIGN WATER SERVICES (CONT.)

A key element of support programs is management. Work with water users to design a management structure that takes into account their resources and constraints. Some options for a management structure are community (management by committee or delegation to an entrepreneur or enterprise) or private (management by individual, household, or small group).

EXAMPLE

Here are some of the Water Services designed into Example 1



WATERSHED PROTECTION

- The community can be trained to protect and improve the source by restricting upstream activities and to increase infiltration and retention by planting trees and building mini-check dams.

SOURCE

- The original source can be protected by capturing the water underground to reduce contamination and increase supply.

STORAGE

- A covered tank can store water downstream to increase quantity and reliability. This helps keep it free from contamination for activities such as drinking, bathing, and watering small animals and gardens. An uncovered tank could capture overflow water for use in fields during the dry season.

DISTRIBUTION

- Separate pipes can deliver water from the storage tanks to the tap stands near people's homes and to the fields helping to reduce conflict between uses.

LIFTING

- No lifting required in this example.

TREATMENT

- With protection, the water from the spring is potable so no additional treatment is needed.

SUPPORT PROGRAMS

- The community prefers to create a management committee to oversee the system.
- Local retailers can be connected to spare parts wholesale suppliers to ensure availability of parts, and to make maintenance and repairs cost-effective.

DESIGN HEALTH ACTIVITIES

How do you improve people's health?

By only providing potable water, you can make a health impact. To the extent that project resources permit, designing additional Health Activities (hygiene, sanitation, and nutrition) can maximize the overall health impacts of the new water service. Information learned in the Assessment process along with the results from the Design of Water Services can inform which Health Activities to include in the project.

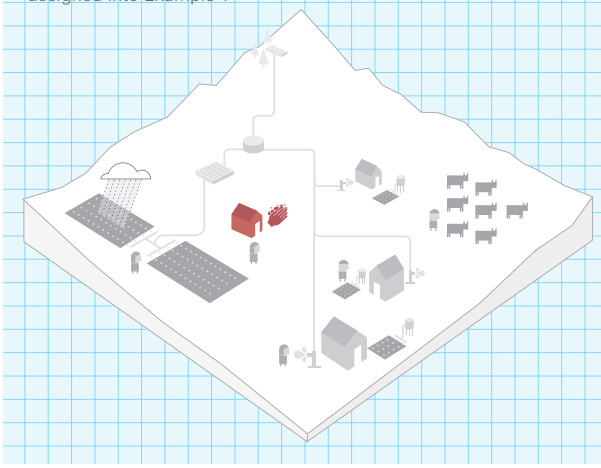
Here is an overview of some of the support programs and their enabling technologies to consider when designing Health Activities:

HEALTH ACTIVITIES OVERVIEW

	SUPPORT PROGRAMS	ENABLING TECHNOLOGY
Hygiene	Safe water handling Hygiene education Hygiene promotion	Handwashing station Laundry station
Sanitation	Sanitation education Sanitation promotion	Latrines Composting toilets
Nutrition	Nutrition education Support for growing nutritious food	Drip kits Greenhouses

EXAMPLE

Here are some of the Health Activites designed into Example 1



HYGIENE

- A hygiene education program can reduce illnesses.

SANITATION

- Latrine installation can be increased through a sanitation promotion program.

NUTRITION

- Nutrition education programs can improve impact of new household gardens.

DESIGN LIVELIHOODS ACTIVITIES

How do you increase people's incomes?

Simply by providing holistic water services, livelihoods will be improved. To the extent that project resources permit, designing additional Livelihoods Activities (agriculture, livestock, trade) can broaden the impact of your project by increasing incomes and enabling access to opportunities like education.

Information learned in the Assessment process along with the results from the Design of Water Services can inform which livelihoods activities to include in the project.

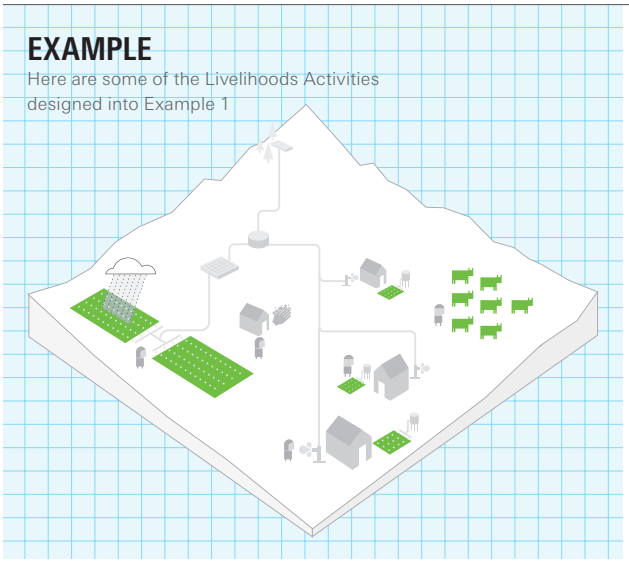
Here is an overview of some of the support programs and their enabling technologies to consider when designing Livelihoods Activities:

LIVELIHOODS ACTIVITIES OVERVIEW

	SUPPORT PROGRAMS	ENABLING TECHNOLOGY
Crops	Agricultural extension Market linkages Inputs supply chain	Drip kits Sprinklers Greenhouses
Livestock	Livestock extension Market linkages Inputs supply chain	Veterinary equipment Storage facilities Transport devices Production facilities
Enterprise	Entrepreneurship training Market linkages Skills training	Food processing equipment Brick-making equipment Laundry station

EXAMPLE

Here are some of the Livelihoods Activities designed into Example 1



CROPS

- Agriculture extension can help improve the production of high value crops.
- Promotion of sprinklers, drip kits and protective greenhouses can help farmers use water and fertilizer more efficiently.
- Collection centers can help producers from rural communities bring their produce to market.

LIVESTOCK

- Training in forage production can help increase goat production.
- Livestock extension improves effciency through better feeding, shelter and disease prevention.

IMPLEMENTATION

Any good multiple-use water services approach involves implementation of infrastructure and supporting programs that are specific to the needs assessed and services designed in the planning phase. Multiple-use projects also face constraints, such as organizational capacity, technical expertise and funds that are limited or earmarked. These constraints can make it difficult to implement all aspects of the project at once. Projects should prioritize and implement interventions based on needs, resources and capacity.

While implementation methods can vary widely depending on organization, some best practices are listed on the following page.

BEST PRACTICES FOR IMPLEMENTATION

SUPPORT PROGRAMS

- **Establish clear roles and responsibilities among stakeholders.** Consider a formal written or oral agreement in the presence of all stakeholders.
- **Require people to contribute before construction.** Discuss trade-offs, such as amounts, for different technical options so that people can evaluate and feel ownership about their choices.
- **Reinforce the local supply chain.** Develop existing business relationships and social networks to strengthen the local supply chain for parts and repair services.
- **Enable maintenance to happen locally so projects are sustainable over time.** Provide follow-up training for technicians and entrepreneurs a few months after implementation.
- **Provide substantial follow-up support.** Deliver at least 1 year of intensive follow-up and 2 years of less-intensive follow-up that guides, but doesn't finance, water users as they work through maintenance, repairs and management issues.

ENABLING TECHNOLOGY

- **Invest in watershed protection.** Develop a watershed protection management plan to improve quantity, reliability, and the long-term sustainability of the source.
- **Let the community help select technical options.** Show a range of technical options to people so they can choose and feel ownership over the infrastructure.
- **Identify opportunities to improve the service.** Talk with the people about ways in which they can upgrade or expand the service over time.

- **Start small.** Prioritize easily implementable health promotion activities such as handwashing with soap at critical moments, safe handling of water and food, and latrine use.
- **Know your target audience.** Develop training and promotional activities that are audience specific in order to maximize their impact.
- **Use positive messaging.** Keep people entertained and focused through positive training and promotion.

- **Promote rather than subsidize.** Encourage the development of a local supply chain so that technologies, services and replacement parts are readily available.
- **Give people choices.** Show a range of different hand washing stations, latrines, etc. so that people can chose what technology works best for them and encourage stepwise adoption.

- **Showcase existing projects.** Expose people to the benefits of livelihood-related activities by organizing field trips to where such activities are already in place.
- **Build local extension capacity.** Provide extension training to businesses and entrepreneurs, enabling them to provide goods and services to the local community.

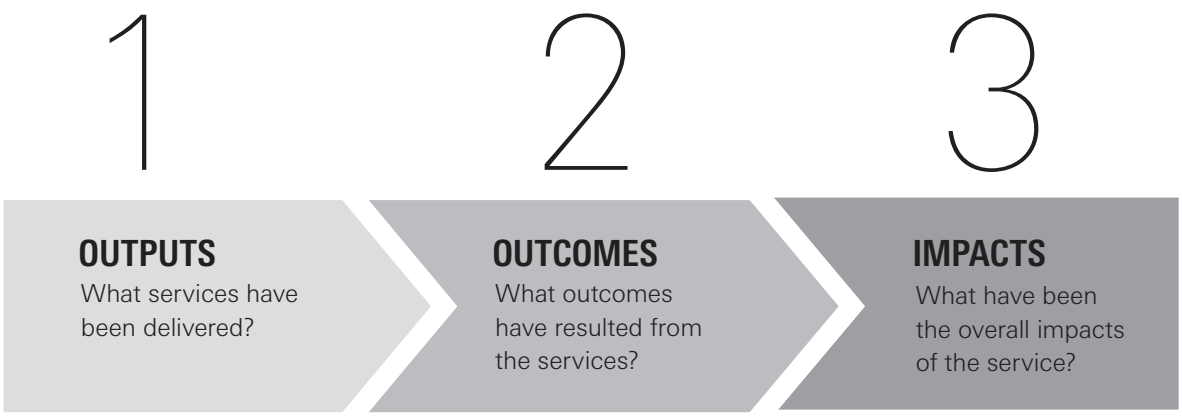
- **Promote rather than subsidize.** Encourage the development of a local supply chain so that technologies, services and replacement parts are readily available.

EVALUATION

How do you measure impact?

A comprehensive yet practical framework for monitoring and evaluation can show the impact of the project and identify opportunities for continuing to improve the service over time. Develop an evaluation framework that is specific to your organization's resources.

A monitoring and evaluation framework typically consists of three core components:



KEY CONSIDERATIONS FOR EVALUATION

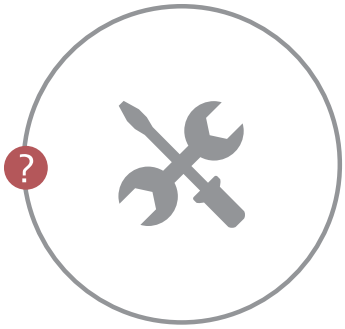
	OUTPUTS	OUTCOMES	IMPACTS
	• What water infrastructure has been installed? • What training and management components have been implemented?	• Are people using the technology appropriately? • Is the management committee working well?	• Have conflicts decreased? • Is the source more reliable?
	• What are the health-related services implemented?	• How have hygiene practices changed? • Are there any differences in sanitation practices?	• Have people's quality of health improved? • Have the rates of water-related disease decreased?
	• What livelihood related services were implemented?	• Are more people using resources to support livelihood activities? • Have people gained skills that improve livelihoods?	• Have people's overall standard of living improved? • Have people's incomes increased?

3

How To Start

WHAT A MULTIPLE-USE WATER SERVICES APPROACH MEANS FOR YOU.

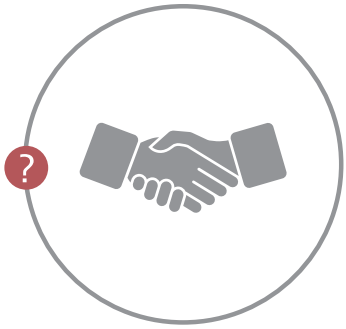
Whether you are an implementer, funder, or policy maker, there are benefits for adopting the multiple-use water services approach. The next few pages give an overview of how to start. Remember that multiple-use water services isn't an all or nothing approach. You can decide how far you want to go and at your pace, and don't have to do everything all at once.



ARE YOU AN IMPLEMENTER?

Deepen your impact.

Think holistically to see how water can increase impacts across health and livelihoods.



ARE YOU A FUNDER?

Get more impact with each dollar spent.

Support an integrated approach to water services and see a greater and enduring impact on poverty.

ARE YOU A POLICY MAKER?

Address poverty across sectors.

Champion policies that make it easier to implement projects addressing health and livelihoods simultaneously.

IMPLEMENTER

Potential Benefits

- Increasing income through water-related livelihoods motivates people to maintain water infrastructure.
- Addressing all needs for water reduces conflict.
- Integrated monitoring of the project across sectors increases efficiency.
- Working across sectors can increase stability of funding.

Potential Challenges & Solutions

- Maintaining quality programming across sectors can be challenging.
  - Partner with complementary organizations.
  - Expand your services gradually based on available resources.
- Designing and implementing integrated programs may require more investment.
  - Partner with organizations who have complementary funding in the same location to leverage existing funding.
  - Integrate financing from multiple donors.

How to start

- Understand how water is being used for different uses and identify challenges and opportunities.
- Consider how to mitigate negative impacts of unplanned water uses and build upon positive impacts through more holistic planning.
- Provide a sufficient quantity of water for livelihoods activities.
- Ensure water is of adequate quality and reliability to meet household needs.
- Participate in learning forums with organizations already implementing multiple-use water services projects.

FUNDER

Potential Benefits

- Implementing a multiple-use water services approach better addresses many poverty reduction strategies at once (e.g. safe water, food security, climate resiliency).

Potential Challenges & Solutions

- Funds are allocated by sector.
  - Break down silos for funding.
- Funding new approaches is challenging.
  - Consult with other funders and sector experts to understand costs, timeframes, and expected results.
  - Consider pilot activities for learning, replication, and scale-up.
  - Use indicators that focus on sustainability of impact rather than on number of people served.

How to start

- Start discussions across sectors within your organization or between grant recipients.
- Create incentives for integrated programming, such as opportunities to combine Agricultural Extension with a Nutrition program.
- Help implementers find complementary partners across sectors.
- Fund pilot initiatives for learning and replication.

POLICY MAKER

Potential Benefits

- Implementing a multiple-use water services approach addresses multiple poverty reduction targets at once (e.g. multiple Millennium Development Goals).
- Provides a more streamlined approach for measuring impacts.

Potential Challenges & Solutions

- Working across sectors can be difficult since many technical government agencies are sector-based.
  - Work at the local level where departments are not as siloed.
  - Find common points of interest where sectors can work together.
  - Create incentives for integrated approaches.

How to start

- Allocate specific funds for multiple-use water services.
- Support the development and financing of integrated programs between sectors.
- Develop water quantity guidelines that account for water needs for health and for livelihoods.
- Use indicators that prioritize sustainability.
- Account for benefits that may fall outside of a given sector.

Appendix

GLOSSARY

Multiple-use water services is a holistic, participatory approach to water that improves livelihoods and health, increases sustainability, and ultimately improves people's lives overall. *

People are the users of water services. They are not a homogeneous group. The different groups in a community may have different social, cultural, and economic backgrounds. Issues of equity and inclusivity should also be addressed.

Water services refer to the water people actually receive. These services can be delivered with differing levels of quantity, quality, reliability, and distance.

Water sources are either undeveloped natural sources like springs, lakes, and aquifers, or they are developed man-made sources like wells, piped systems or reservoirs.

Health refers to water related activities that contribute to people's overall health such as safe drinking water, improved hygiene, sanitation and nutrition. Medical care, while important to development, is not usually a component within the multiple-use water services context.

Livelihoods refers to water related activities that contribute to people's livelihoods such as farming, livestock, or other trades, like brick-making.

Technology refers to the hardware part of implementation, in which new infrastructure is installed, or existing infrastructure is rehabilitated or upgraded.

Support programs refer to the software involved in implementing a project, consisting of education, management, training and/or promotion.

Livestock extension refers to the transfer of knowledge and skills from experts to farmers in order to increase the productivity of their animals.

Agricultural extension refers to the transfer of knowledge and skills from experts to farmers in order to increase the productivity of their crops and gardens.

* Within the water sector, multiple-use water services is defined as an integrated, participatory water service delivery approach that takes people's multiple water needs as a starting point and involves planning, finance, provision and management of sustainable water services for domestic and productive uses

4 Resources

Resources on Multiple-Use Water Services

Animated MUS Video, Winrock International. http://www.youtube.com/user/WinrockIntl

IWMI, IRC, GWP Technical Advisory Group. Water Policy Briefing 18: Taking a multiple-use approach to meeting the water needs of the poor brings multiple benefits. http://www.iwmi.cgiar.org/Publications/Water_Policy_Briefs/PDF/wpb18.pdf

MUS Group hosted by IRC Water and Sanitation Centre www.musgroup.net

Renwick, M. et al., 2007. Multiple Use Water Services for the Poor: Assessing the State of Knowledge. Winrock International, Arlington, VA, USA. http://www.winrockwater.org/

Van Koppen, B.; Smits, S.; Moriarty, P.; Penning de Vries, F.; Mikhail, M. and Boelee, E. 2009. Climbing the water ladder: Multiple-use water services for poverty reduction. Technical Paper Series 52. The Hague, The Netherlands, IRC Water and Sanitation Centre and International Water Management Institute http://www.waterandfood.org/publications/program-publications/joint-publications.html.

Other Useful Resources

Brikké, F. and Bredero, M., 2003. Linking technology choice with operation and maintenance in the context of community water supply and sanitation. Geneva, Switzerland: World Health Organization and IRC International Water and Sanitation Centre. http://www.who.int/water_sanitation_health/hygiene/om/wsh9241562153/en/

Sustainable Sanitation and Water Management Toolbox, 2012. www.sswm.info

USAID, 2010. Sanitation Marketing for Managers. Guidance and Tools. http://www.hip.watsan.net/page/3395

WHO, 2005. Sanitation and Hygiene Promotion: Programming Guidance. http://www.who.int/water_sanitation_health/hygiene/sanitpromotionguide/en/

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- International Livestock Research Institute, Ethiopia
- Meki Catholic Secretariat, Ethiopia
- Ministry of Irrigation, Nepal
- Nepal Economic Agriculture and Trade Activity, Nepal
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- Practical Action, Nepal Country Office
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