Final Draft

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One Development Opportunity Leads to Another

Productive Uses of Water

Submitted to:
PRODWAT Group
The Netherlands

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List of Acronyms

ADB	Asian Development Bank
CBOs	Community Based Organisations
CBS	Central Bureau of Statistics
CHV	Community Health Volunteer
DDCs	District Development Committees
DFID	Department for International Development, UK
DTO	District Technical Office
DWSS	Department of Water Supply and Sanitation
FEDWASUN	Federation of Water and Sanitation Users Nepal
GAP	Gender and Poverty Approach
GDP	Gross Domestic Product
GNP	Gross National Product
GWS	Gorkha Welfare Scheme
HHs	Households
JTA	Junior Technical Assistant
LHM	Local Health Motivator
LTSS	Longer Term Sustainability Study
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
NEWAH	Nepal Water for Health
NLSS	Nepal Living Standard Survey
NRCS	Nepal Red Cross Society
PRDC	Panchawati Rural Development Centre
RRN	Rural Reconstruction Nepal
RWSSP	Rural Water Supply and Sanitation Project
SAs	Support Agencies
SOs	Support Organisations
UNICEF	United Nations Children's Fund
VDCs	Village Development Committees
WARM-P	Water Resources Management Programme
WHS	Water Health and Sanitation
WRMCs	Water Resources Management Committees
WSUCs	Water and Sanitation Users Committees
WUSCs	Water Users' and Sanitation Committees
WOREC	Women Rehabilitation Centre

Executive Summary

Nepal is a landlocked country in South Asia with India and China as its neighbours. The country is divided into three geographic regions the *Tarai* (plains), hills and mountains and has five development regions. The population of the country is estimated at 25.3 million and 31 percent of the people live below the poverty line. The country's economy is largely agriculture based.

According to the Nepal Living Standard Survey Report 2004 the status of water and sanitation stands at 82% and 39% respectively. Nepal is signatory to the MDG target of halving the proportion of people without water and sanitation by 2015. According to the tenth plan objective it aims to serve 85% and 50% of the population with water supply and sanitation respectively by 2007 and the national target of meeting universal coverage by 2017. The targets are all very challenging and a lot of resources are required to meet these goals and targets, because the country is characterised by very diverse geographical terrain, difficult and inaccessible areas and the poor pocket areas requiring the water and sanitation services.

There are several organisation specialising in the rural drinking water supply and sanitation sector like the DWSS (lead government organisation), Fund Development Board, GWS, Helvetas Nepal, Finnida, NEWAH etc. with major funding from World Bank, DFID, WaterAid Nepal, ADB etc.

The organisations involved in the sector do not implement programmes directly but work through partnership with recognised locally based organisations in the districts. Community Management Systems are promoted in most of these programmes, with communities empowered and capacitated to be managers and owners of their own projects. Gender, caste, ethnicity, disadvantaged and poverty status are given due consideration to ensure inclusion of these groups in the projects. Users committee are formed to take over the responsibility of the management of the projects. The nature of the terrain is the deciding factor for the technology to be used to provide water supply (Gravity flow in the hills and tube wells in the *Tarai).* Operation and maintenance fund are also created and mobilised locally to keep the systems in place and the users contribute to it. Various linkage activities are also introduced during projects to promote income-generating opportunities for the poor people. The objective of promoting kitchen gardening is to maximise the benefits of water supply schemes through the use of wastewater.

The stakeholders in the sector believe that community management systems are an important component in the drinking water and sanitation sector projects and if properly implemented support projects in being sustainable and long lasting. They also express that community managed systems are slowing setting into place in the drinking water and sanitation projects in the country. They also express that O&M funds play a great role in effective operation of the systems and improving community management system as a whole.

The kitchen gardening promotion activity begun at NEWAH since 2000 as NEWAH believes that through the access of improved water services, the time saved from collecting water (especially that of women) can be focused on income generating opportunities. The main objective of promoting kitchen gardening is to make optimum utilisation of available supply through the management of wastewater, thereby improving the living standards of the people (in terms of access to nutritious diet, improved health status and income generation) and ultimately to support to poverty reduction. Thus NEWAH implements kitchen gardening as an integral part of the drinking water, health/hygiene education and sanitation projects through the use of wastewater where feasible. It provides training and education to the people with regard to the benefits of kitchen gardening and how it can be initiated. Several studies at NEWAH have also revealed that this activity helps to support livelihood of the people and are likely to practiced more when women have access to water and are freed from the burden of water collection. NEWAH has adopted a Gender and Poverty (GAP) approach to ensure inclusion of women, poor and disadvantaged in all aspects of the projects and the GAP strategy also is based on the principle that benefits obtained through access to water are sustainable and provide women with opportunities to improve their social status, self confidence, role in decision making and access to economic resources.

The project communities Jagretar, Sanodhappar and Sandane fall under the Eastern Development region of Nepal, Udayapur district, Panchawati VDC, Ward No. 4 and inside the Nepaltar valley. The region largely depends on agriculture and livestock for its income. Various kinds of cereal crops, cash

crops and major crops are grown in the district. Three hours of a rough bus ride will take you to these communities from the district headquarters Gaighat. The Nepaltar market is the main business centre in the valley. Jagretar has more fertile land than the other two communities. Prior to the implementation of projects, women and children especially had to walk for an hour to an hour an half to collect water from unsafe sources, and open defecation was widespread in the community leading to contamination of water and spread of water borne diseases. Starting from 1999 NEWAH started implementing integrated drinking water, health/hygiene education and sanitation projects in these communities in different phases.

NEWAH promoted the use of wastewater for kitchen gardening programme only in Sandane project that was implemented in 2000 as prior to that no strategy, policy or guidelines existed while implementing the other two projects. It was only in 2000 that kitchen gardening was introduced in a pilot project of NEWAH and since then have been promoted in other projects as well. The main purpose of this has been to improve the living standards of people mainly women using their time saved from collecting water in income generating activities like kitchen gardening by making maximum use of water available to them. The community people were trained about kitchen gardening in the Sandane project and once water was available it was well adopted through the use of wastewater flowing out of the taps. Since then this kind of practice also started growing rapidly in Jagretar and Sanodhappar and now has had positive impact in all these communities.

The positive impact of the projects has been improvement in the hygiene behaviour, latrine usage, household and environmental sanitation, proper disposal of garbage, use of dish drying racks, use of covered water etc. The notable impact has been proper management of kitchen garden using wastewater-allowing people to consume nutritious diet, improving their health status as well as contributing to increase their income. While earlier people had to eat vegetables brought from the neighbouring communities but now they have enough vegetables from their own garden for their daily meals and to sell the excess in the market. People's knowledge and skills have also increased with respect to kitchen gardening. There is no problem of the market for the farmers. The people consider kitchen gardening practice as a matter of pride. Most importantly seeing kitchen gardening prosper and succeed in these communities the neighbouring communities are now inspired to follow their footsteps. The stakeholders also believe that kitchen gardening introduced as linkage to water and sanitation programmes can help people have access to nutritious diet, create income opportunities and improve the living standards and thereby support in reducing poverty and they believe that this activity needs to be promoted in other sector projects as well.

Though there are positive impacts associated to kitchen gardening practices in the project communities, there are several challenges such as problems of plant diseases and insects that have troubled the local people and they all do not have skills and knowledge to deal with them. The two days training is not adequate to impart all the knowledge and skills related to this practice and the Junior Technical Assistants (JTAs) appointed by the government are not effectively mobilised to support the people in communities and neither separate programmes on kitchen gardening have not been initiated in these areas to provide them the expertise in this area. Yet the farmers have gathered a lot of experiences and acquired skills of kitchen gardening based on their practice. According to them some locally produced seeds are also reliable and there is the need to share about good experiences in one community in other communities so as to learn from each other. This practice has also allowed to raise the economic status of the people in these communities supporting them in their daily household expenses.

Thus, kitchen gardening needs to be promoted and replicated by other organisations. It assists to serve a large proportion of the population and reduce poverty. The government also should emphasise on the promotion of kitchen gardening specifically through inclusion of the provision in the water and sanitation national policy. Options should be sought for households with no access to land or the wastewater from taps so that they also can reap the socio-economic and health benefits from this activity. Provisions for proper linkage to the market for communities practicing kitchen gardening through the water and sanitation projects need to be established and the government should ensure the technical support required by people with regard to kitchen gardening through proper and effective mobilisation of their staff.

One Development Opportunity Leads to Another: Productive Uses of Water (PRODWAT)

1. Country Background

Nepal is a landlocked country in South Asia nested between the world's two most populous countries China in the North and India in South, East, and West. It is divided into three distinct geographical regions: the fertile plains of *Tarai* in the South, the middle hills and the mountains in the North. Administratively, the country is divided into five development regions (Eastern, Central, Western, Mid Western and Far Western), 14 zones and 75 districts. District Development Committees (DDCs), Village Development Committees (VDCs) and Municipalities are the lower administrative units in the districts.

The current population of the country is estimated at 25.3 million with an annual growth rate of 2.2 percent. Rural population is currently at about 86 percent, though urban and peri urban areas are quickly growing, giving rise to slums and urban poor population. Thirty-one percent of the population live below the absolute poverty line (CBS 2005).

Nepal's Annual per capita Gross Domestic Product (GDP) and Gross National Product (GNP) for the year 2004/05 has been estimated at US $ 294 and 300 respectively (CBS 2005). Though the government has projected the corresponding growth rate in per capita output to go up, it has remained very low (about 2%). The poor economic growth and set back to development can be largely accounted to the conflict and political instability in the country for the past several years.

The country is largely based on an agrarian economy with 78 percent of the total households owning agricultural land and about two percent are without any land. There is a huge gap between the agricultural holdings in the rural and urban areas with 93 percent and 7 percent respectively. A major proportion of households are involved in cultivating main paddy followed by wheat and summer maize. Other crops and vegetables mainly grown are soybean, lentil, winter-potato, mustard, onions, garlic, winter-vegetables and summer-vegetables. It has been found that in the period between 1995/96 to 2003/04 the percentage of households growing summer vegetables sharply increased (NLSS Vol 2., 2004).

The literacy rate for female and male population aged 6 years and above stands at 42.5 percent and 65.1 percent respectively (UNDP 2004). According to Nepal Living Standard Survey (NLSS) Report 2004, only 62 percent of total households and 57 percent of rural households have access to health facilities within a walking distance of half an hour. Infant mortality rate as estimated by the government in 2005 is 64.4 and child mortality 91.2 per 1000 live birth (CBS 2005). Similarly maternal mortality Rate / 00000 is 539 and is reported the highest in the world by the Nepal Human Development Report 2004.

2. Water and Sanitation Services in Nepal

Present water and sanitation scenario in the country

In Nepal 82 percent of the population have access to drinking water. Improved services such as piped water and covered wells make up for almost 93 percent water coverage in urban areas and 79 percent in rural areas (6.7 percent have water piped to the house, 32.5 outside the house & 39.6 percent use covered wells rurally). The

rest of the population depend on sources such as open well and other sources. (NLSS Vol 1., 2004).

The NLSS report 2004 reports the portion of households with proper toilet facility at 39 percent in the country. This data varies from report to report and whichever data used, sanitation coverage lags far behind drinking water coverage. Hygiene behaviour, particularly that related to defecation and hand washing is generally poor everywhere. The fact that sanitation and hygiene promotion have fallen far behind water supply coverage figures has limited the full health benefits that can be gained from access to improved drinking water.

MDGs and national targets on water and sanitation

The Tenth Plan (2003-2007) in Nepal aims to serve 85 percent of the population with basic access to water supply and 50 percent with sanitation services by 2007. Nepal is also a signatory to the Millennium Development Goal (MDG) targets of halving the proportion of people without water and sanitation by 2015. The target spelled out by the Rural Water Supply and Sanitation National Policy 2004 to achieve universal coverage on water supply and sanitation by 2017 is yet even more challenging.

It has been estimated that 63% and 56% of the rural population need to be provided with water and sanitation respectively if Nepal is to meet the MDG targets. The available resources in the sector based on commitments by government and donors is US $ 170 million, of which donor's disbursement is only 60 percent of the actual commitment. Annually there is a resource gap of 23 million for water and sanitation combined and the resource gap for the rural areas is far greater than the urban areas. (WaterAid Nepal 2004).

Existing challenges in the country

There are many areas in Nepal, especially in the Mid and Far Western parts which still do not have any access to drinking water. Namely areas that are not accessible by road or communication, far off from the district headquarters and geographically difficult terrain such as the Sivalik range and its vicinity, regions located in the U valley, the higher hilly regions, scattered communities and communities that lie above the water source. Reaching such areas is technically challenging and costly. Further, there are conflict hit areas and settlements belonging to the poor backward *Dalit* (so called lower caste groups) and ethnic groups that are in dire need of water. Expectations of greater outputs in terms of the investments, problem of monitoring, minimal presence of support organisations further add to these difficulties.

Arsenic, iron, lime incrustation and presence of coliform in the water are the main contaminants that compromise water quality. Numerous efforts have been made to mitigate the negative impact and improve the water quality standard. However, the poorest groups usually are the last to be served.

Still today, in many rural areas, people (primarily women and children are water collectors for the family) and they spend 2 to 4 hours a day to collect the required quantity for the family, household consumption and for watering the livestock, that too water from sources that are frequently unsafe. The number of trips depends on the household size, proximity of the water source and livestock reared in the household.

Annually approximately 15,000 deaths occur due to diarrhoea among children under five (UNICEF 2004). Poor understanding of the dangers of open defecation, solid waste disposal and other practices has an inevitable impact on the health of the

population, especially children. Loss of productive capacity and money spent on medicines significantly depletes household resources. Therefore, access to safe drinking water and sanitation is a prerequisite to improve health status and provide income-generating opportunities for poverty reduction.

3. Rural Water Supply and Sanitation Sector Stakeholders and Programmes

Major sector stakeholders

The Department of Water Supply and Sewerage (DWSS) is the lead government agency in the sector. The other agencies involved in the rural water supply and sanitation sectors from late 1990s till date are: Community Based Water Supply and Sanitation Project of DWSS supported by the Asian Development Bank (ADB), Rural Water Supply and Sanitation Project (RWSSP) of the Fund Development Board, Water Resources Management Programme (WARM-P) of the Helvetas Nepal, Rural Water Supply and Sanitation Support Programme and Rural Village Water Resources Management Project in Nepal of the Government of Finland (first phase completed), Nepal Water for Health (NEWAH) and Gurkha Welfare Scheme (GWS). There are various other NGOs like Rural Reconstruction Nepal (RRN), Nepal Red Cross Society (NRCS) that provide water supply and sanitation services in rural areas but as their non-core activities. The major donors supporting the water supply and sanitation sector projects in Nepal are mainly World Bank, DFID, WaterAid Nepal and ADB while UNICEF supports sanitation programmes in the country.

Implementation process of programmes

The agencies in the sector implement the rural drinking water, health/hygiene education and sanitation schemes in line with the national policies, guidelines and strategies and in contributing to the PRSP initiatives. The selections of project areas mainly depend on the coverage of drinking water and sanitation in various districts of the five development regions in the country and their poverty status. While the water and sanitation programmes of various sector organisations spread all across Nepal some of them are focused in only certain regions of the country (e.g. DWSS, Fund Development Board, NEWAH – through out selected districts in five development regions, Helvetas Nepal – selected districts of Far Western, Mid Western, Western regions, GWS – selected districts in the Eastern and Western regions etc.) Prior to the implementation of the projects coordination is done with the local government units. There are differences in the process of implementation and the project cycle may vary from organisation to organisation, however, each organisation promotes community based management systems while providing communities access to basic water supply and sanitation services. Gender, caste, ethnicity, disadvantaged and poor groups are prioritised while providing the drinking water and sanitation services. The projects implemented are also monitored and evaluated.

In the past DWSS played a direct implementing role in projects but according to the Rural Water Supply and Sanitation National Strategy 2004 the department gradually plans to shift the role from direct implementation, handing over ownership and responsibility for operation and maintenance of all the rural water supply and sanitation schemes to local bodies DDCs, VDCs & Municipalities and/or to the Water Users and Sanitation Committees (WUSCs).

The strategy further stresses that DWSS will be involved in implementing projects in communities larger than 1,000 people through its line agencies while the District

Technical Office (DTO) located within the DDC will implement projects with smaller community size. The implementation arrangements of the strategy entrusts the DDCs to be responsible to implement, coordinate and monitor the rural water supply and sanitation plans in the districts through a district periodic plan and provision of technical assistance, while they provide implementation and technical assistance to VDCs only upon their request. The VDCs will lead the WUSCs in the construction of rural water supply and sanitation facilities, including mobilisations of communities to contribute in cash or kind.

The Rural Water Supply and Sanitation Fund Development Board has been designated the role of a regular facilitating organisation for provisions of rural water supply and sanitation services with specific tasks such as providing financial and technical assistance to local implementing organisations, evaluating and sharing lessons learned, enhancing the capacity and efficiency of local bodies in adopting community based formats and supporting in the reform process of sectoral policy (National Strategy 2004).

Community managed systems

Community managed systems are integral part of the rural water supply and sanitation programmes in Nepal. Thus the organisations involved in the sector do not implement the programmes directly in the communities but they work through local partners who go by different names such as support organisations/service agencies (SOs/SAs), NGOs, Community Based Organisations (CBOs) etc. but their functions are more or less the same, such as implementing, capacity building, social mobilisation etc. Further more, WUSCs are formed during implementation of the projects. The sector national policy 2004 specifies that the WUSCs need to be compulsorily registered according to the Water Resources Act 1992 and Water Supply Regulations 1998 and all the sectoral organisations emphasise on this aspect in the districts where they work. The WUSCs are committees that represent the users and are established in each project to see to the overall management of the project (operation and maintenance (O&M) and regulations), local resource mobilisation, users participation etc. These committees are called different names by the different organisations in their projects (Water Users and Sanitation Committe (WUSCs), Water Resources Management Committees (WRMCs), Water and Sanitation Users Committee (WSUCs) etc. but principally their work is somewhat the same.

This kind of committee generally comprises of 9-13 members who are elected by the users themselves. Capacity building, providing skill-based trainings, health/hygiene and sanitation awareness of local NGOs, users' committee members and community people is ensured through the projects so that the users become more active, responsible and take ownership for the management, operation and maintenance of their projects. The sector organisations only play the role of support and facilitation. The 2004 national policy also mentions about the enhancement of capacities of the local bodies, users committees and non-governmental organisations to reduce government's direct involvement in the implementation of water supply and sanitation projects.

Types of technological systems used

Nature of the geographical terrain determines the types of sources and technological options to be used to provide the drinking water systems in the communities. These programmes use spring, stream and rainwater sources among the various types of water sources in the hills and ground water in the *Tarai* (plain area). Gravity flow piped water systems, spring protection, rain water harvesting and fog water harvesting in the

hills and shallow tube wells, deep tube wells and hand dug well in the *Tarai* are the various technological options used to supply drinking water at community and household level.

The WaterAid Nepal 2004 report makes an estimation of the proportion of population in 2015 by water technology zone based on the Hill, *Tarai* and rural/urban census information, which are as follows:

Area	**Water Technology zone**	**% of Population**
Rural	Shallow Tube Well	36
	Deep Tube Well	11
Rural and Sub Urban	Gravity Flow	54
Rural and Sub Urban Total		**100**

WaterAid Nepal 2004

Creation of operation and maintenance (O & M) fund

Sustainability is an important aspect of the rural water supply and sanitation projects, thus a long-term vision is required to make the projects functional long into the future. Sharing the cost for operation and maintenance allows for greater participation and decision making of the users and empowers them to take ownership of projects. At the same time financial transparency is one of the important aspects of community management.

The national strategy 2004 indicates the creation of O&M funds for community based water supply and sanitation schemes at the WUSC level and rehabilitation funds at the DDC and VDC level, training of Technical Assistants at VDC level on O&M to support the WUSC to build their internal technical capacities, delivery of performance monitoring and evaluation and special post-project support to WUSCs to strengthen their management skills and accountability.

Each organisation also has provisions of creating O&M fund from the initial stage of the project while communities decide on the amount to be collected as regular funds. For instance a 3% (gravity flow) or 4% (ground water system) of total water supply and sanitation system construction cost is raised upfront in the development phase to set up the O&M fund for the Fund Development Board programmes (Annual Report 2005 of Fund Development Board), NEWAH also has the practice of raising O&M fund in the beginning of the project NRs. 1000 (approx. US$ 13) (hill water point) and NRs. 700 (approx US$ 9)(*Tarai* water point) per water point.

Use of wastewater for kitchen gardening

Among their various activities designed to promote income-generating opportunities in project communities, the different organisations working in the drinking water and sanitation sector encourage kitchen gardening through the use of wastewater in their programmes so that maximum benefits can be obtained from their water supply systems. The main objective is to promote best utilization of wastewater to improve the nutrition status and raise economic status of poor households through creation of income opportunities. “Water is not only to drink; it is an important base of social economic development of the community” Helvetas, 2006.

The national policy 2004 also emphasises on conducting income-generating activities as auxiliary programmes of water supply and sanitation to enable women to be empowered and it also stresses that these are to be conducted effectively in coordination with other agencies.

Stakeholders view on community management system

Any kind of system that leads communities to mobilise their knowledge and skills according to their needs to last for a long time is a community-managed system. Effective demand, ownership, participation and management aspects are important factors of community management. This holds great significance in projects like drinking water and sanitation, which have direct impact on the people and communities. It is so because the communities play the chief role in sustainably taking the programmes forward. Rabin Lal Shrestha, Research and Advocacy Manager, WaterAid Nepal says, “In Nepal due to the effectiveness of community management, projects have been running properly even years after they are implemented.”

Capacity of committees

As there are socio-economic and cultural disparities among communities in Nepal, in many circumstances it is not easy to integrate all of them. Besides that the society is daily progressing towards individuality with the increasing use of technical developments and changes in the living standard of the people, opines Mr. Yubaraj Shrestha, Monitoring and Evaluation (M&E) Manager at NEWAH. He further adds that if projects were to be implemented based on community demands, then in such cases community management would be more effective. Similarly, giving example of the lead role played by the users committee in project planning, construction and implementation, Thakur Bhatta*,* Social Training and Research Coordinator, of Helvetas Nepal says, “This kind of results are evident owing to the improvement in the community management systems.”

Mobilisation of O&M funds

The O&M funds have been utilised properly as a result of improvement in the system, says Rabinlal Shrestha. He further expresses, “The funds have supported in the implementation of the system making drinking water easily accessible in communities. It has contributed to the use and management of latrines and has mainly helped to have a positive impact on the living standard especially that of women and children. The time saved from collecting water now can be spent on income generating activities and on education.” He is of the view that these kind of examples found more in the hilly regions cannot be notably seen in the *Tarai* regions and adds, “There are differences in the priority of the *Tarai* residents than that of the hills, thus the community management systems applied in the hills may not be appropriate in the *Tarai*, a different model is necessary there.” Further clarifying this point Yubaraj Shrestha of NEWAH includes, “In many places the mobilisation of the O&M funds may not be satisfactory, but where the funds are being regularly raised the livelihood of the maintenance caretaker is better, as a result the systems are also operational. Once the system functions sustainably results such as time saving for people, increase in social prestige and support to income generating activities like kitchen gardening starts to become evident.”

Some positive results

The stakeholders involved in the drinking water and sanitation sector collectively agree that the promotion of equity is slowly growing in communities among the users concerning the use of water, its distribution and decision making process in the drinking water and sanitation projects. “Even despite the influence of the better off on the use of water, distribution and decision making is found to be greater in some places, on the whole this kind of situation has improved. Since the inclusion of women and the disadvantaged groups in the users committee, they have been able to stand up for their rights as compared to the past. It is necessary for the sector organisations to make more effort towards increasing the participation of women, *Dalits* and the disadvantaged groups in all the decision making processes,” says Yubaraj Shrestha.

Increase in the process of inclusion

Women, *Dalits* and the disadvantaged groups who have been in the back seat for ages now are being included in the development mainstream, yet in the initial stages they are not confident enough to put forth their views like the well off and the so called upper class groups. According to Rabin Lal Shrestha, now slowly the voices of these groups are improving and the sector organisation should make more efforts to advocate for their voices to be heard.

In the present context when the issues of inclusion are being raised in every sector in the state, this touches upon the users committee as well. "The users committee in the water and sanitation projects are inclusive in nature, thus the principle of equity can be found ensured in their decision making process. In many communities the *Dalits,* disadvantaged and women now get the priority," says Thakur Bhatta of Helvetas Nepal.

Opportunities

Rabin Lal Shrestha says, due to the improvement in the community management system in drinking water and sanitation sector, the systems have become sustainable and has helped to reduce the existing conflicts including that related to the source disputes. Likewise, the users committee have been registered to organisations like the Federation of Water and Sanitation Users Nepal (FEDWASUN) and have developed the practices of demanding transparency in every aspect of the project with concerned agencies. He expresses that the users have become more concerned about being informed about how much budget is being spent on projects, what is the nature of the projects, thus the level of transparency is not only increasing among the implementing organisations but also among the higher level bodies of the state.

As an effect of the activeness of the users committee, various development opportunities have been created in the concerned areas says Yubaraj Shrestha. "An active users committee motivated through the success of one project starts looking for various other possibilities of development in their area and also keenly involves themselves in it. Thus an improved community management system can open doors for various opportunities of development," he informs.

4. Why NEWAH promotes kitchen gardening in communities?

Kitchen gardening widely in practice in Sandane

NEWAH follows the policy of promoting 'waste water management for kitchen gardening purposes in its projects'. This policy was adopted with the objective of making optimum utilisation of water so as to improve the living standards of the women, men and children in communities. The kitchen gardening promotion activity began since 2000 in NEWAH. NEWAH has also prepared a kitchen gardening guideline and procedure for its use at the institutional level and to give sustainability to this initiative. *See details of procedure developed by NEWAH during implementation of pilot kitchen gardening programme in Annex 1*.

It is well observed that kitchen gardening usually does not fall under majority of peoples' priority for various reasons such as:

- Lack of technical knowledge and skills about kitchen gardening

- Inadequate water for irrigation purposes
- Failing to understand the importance of vegetable consumption for people's health
- Compelled to spend more time on waged labour due to extreme poverty
- Water source situated far off from the community compelling especially women and children to travel long distances and spend lot of time on fetching water

From 2000-2002 five Gender and Poverty (GAP) approach projects were piloted by NEWAH throughout the five regions in the country. In 2003 a comparative post-project evaluation of fifteen projects (5 GAP and 10 non-GAP) were carried out. With regard to access to water supply the findings showed that as compared to the non-GAP projects in the GAP projects the following aspects were better:

- equal access to improved water and sanitation facilities,
- reduction of burden on women for water collection due to share of work by other household members
- and greater use of kitchen gardens, due to the combination of increased water supply and livelihood supporting activities.

As a result NEWAH promotes kitchen gardening along with the provision of drinking water health/hygiene education and sanitation in project areas where it is feasible through the use of wastewater. The community people are imparted basic training on kitchen gardening as a means of livelihood opportunities and to ensure they receive the maximum benefit from their water supply systems. At the same time through the education classes among the various topics the community is made aware about the importance of vegetable consumption and its benefit on people's health.

Since 2004 NEWAH has mainstreamed the GAP approach at the programme and institutional level to ensure that women, the poor and other disadvantage groups participate in and benefit from water and sanitation projects. A need for a GAP approach at NEWAH stemmed from the realisation that projects were not taking into consideration poverty and gender issues and women and poor men were too often excluded from any form of decision-making and training, leading to unequal access to safe drinking water between the better off and poorest socio-economic groups and ultimately to the un sustainability of projects. The GAP strategy aims to ensure that benefits obtained through improved water supply and hygiene practice are sustainable and reach to women and the poorest, thereby improving their social status, self-confidence, active participation in decision making processes and access to economic resources.

On Kitchen Gardening

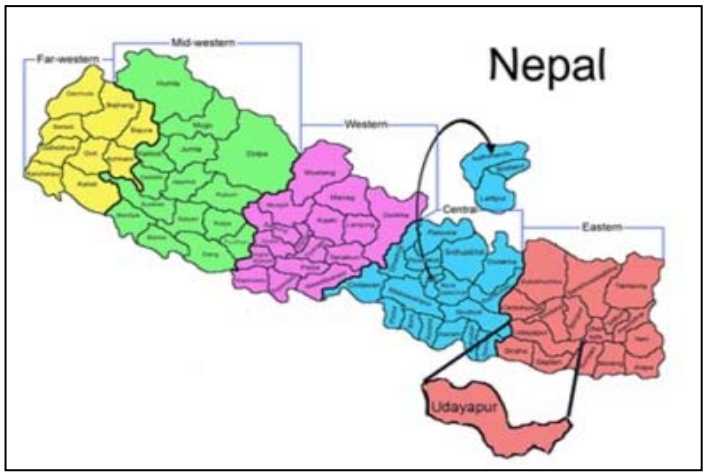
NEWAH believes that the local people, especially women, can save some time after they have access to improved water services near their homes. NEWAH suggests that the local people should invest time in some income generating activities, such as kitchen gardening. In this regard, NEWAH should provide training on kitchen gardening to its project staff, who will then provide the same training to the local men and women. NEWAH will also expedite with the agency providing the training on where and how the local people can have access to improved seeds and other services required by them for kitchen gardening. NEWAH assumes that the kitchen gardening can reduce the local people's expenses on medicines as the use of green and fresh vegetables will have positive impact on the nutritional status of the family, especially children and pregnant women, who are always vulnerable in absence of proper diet. Further, the kitchen gardening will also save the local people's expenses on vegetables and can provide them with opportunities to increase their income from the sale of excess vegetables-all of which lead to improvements in the economic situation.

Policy Guidelines for GAP Phase in Activities 2001

The NEWAH Longer Term Sustainability Study (LTSS) report 2005 reports the findings on various uses of water that the use of water in kitchen gardens were found in 46% of the gravity flow water points in the hills and 39% of the water points in the *Tarai* plains, which goes to show that kitchen garden also plays an important role in people's lives if they are appropriately promoted.

5. Background of Projects

District background



The case study projects are located in the Eastern Development Region of Nepal, which covers an area of 28,456 sq. kms. with 188 people per sq. km. The project area is located in Udayapur district (hilly district) of Sagarmatha Zone in this region. The district covers a total land area of 2063 sq. kms. and is located at an altitude of 360 m. - 2310 m. Gaighat the district headquarters is about 450 kms. and 13 hrs drive from Katmandu the capital city. The district comprises of 44 VDCs and one Municipality. According to 2001 Census report, the total population of the district is 2,87,689 with 1,43,756 male and 1,43,933 female i.e. about 1.24 % of the total Nepali population. The total economically active population is 71,884 male and 48,213 female.

Agriculture and livestock is the main source of income with 54.7% shared by agricultural wage earners (NLSS Vol. 2, 2004). Cereal crops like paddy, maize millet, wheat and barely, cash crops like oilseed, potato, tobacco, sugarcane and jute and major crops like lentil, chickpea, pigeon pea, black gram and grass pea are grown in the district. Similarly cattle, buffalo, sheep, goat, pig, fowl and duck are the major livestock reared in the district. The total food production is not sufficient to feed the total population. The total food requirement is 54,371 MT but the total edible production is just 44,203 MT.

Geographic condition of Nepaltar valley

The concerned case study project areas fall under Panchwati VDC Ward No. 4, of Udayapur district and inside the Nepaltar valley. *See Annex 2 for map of Nepaltar valley.* Nepaltar valley is situated between the Sivalik (*Chure*) in the South and Mahabharat hills range in the North. It is one of the areas in the district where crops are largely produced. During the summer the temperature in the valley goes as high as 34-38 degrees centigrade. In the plains of the valley cereal crops like paddy and wheat are grown while in the slopes crops like maize, millet, and some amount of wheat and mustard seed are grown. Fruits like Lichis, Mangoes and Papaya are also found in abundance in this area. The small river streams flowing in the valley helps to irrigate the farms in the plains and lower belts of the valley.

The Nepaltar market situated in the middle of the valley is the main business centre of the area. People from in and around the valley either come to sell their products or visit

the market to purchase their necessities in the weekly market set up every Saturday. Though the valley is only 40 kms. away from Gaighat by a motor able road, due to the earthen and winding nature of this road it takes about three hours of bus ride to reach the valley. Because half the portion of the road is not gravelled, during the monsoons the bus service is halted. Thus this area is not so easily accessible by transportation, throughout the year. Despite rural electrification works have been initiated in various parts of Udayapur this part of the district is still deprived from electricity facilities. Udayapur Gadhi the old district headquarters near to the valley was shifted to Gaighat in 1971 (about 35 years back), since then all the development works came to a standstill inform the local residents of the area.

Geographical status of the project sites

Sanodhappar and Sandane communities are located along the Sivalik hill range. These communities are largely dry due to the direct effect of the sun from the South. Sandane has more of red soil, while Sanodhappar has more of sandy soil. Both these communities do not have access to irrigation facilities. But since Jagretar is located facing North – South, this community is comparatively fertile and wet. Due to the availability of irrigation facilities farming of paddy has been possible in the plains of Jagretar. However, where there are human settlements irrigation facilities do not exist.

Status of communities prior to project implementation

The three project communities Sandhane, Sanodhappar and Jagretar were identified through surveys as communities deprived of development opportunities and without access to potable drinking water and adequate sanitation. Prior to the implementation of the projects the community people, especially women and children had to spend half an hour to an hour to fetch water from the *kuwa* (Spring) and the dirty stream. During the rainy season in Jagretar all the existing systems would be covered by flood and people were compelled to drink even the dirty water. Initially there were very few domestic latrines in the communities and the people used the fields and streams for defecation. Thus water, health and sanitation were major problems. Due to open defecation and use of contaminated water, diseases such as diarrhoea, worms, jaundice and scabies widespread in the community and children were affected the most. People had to spend a lot of money for their medical expenses.

Implementation of projects

The Sanodhappar community comprises of 268 people and 51 households (HHs), Jagretar has 225 people and 53 HHs, and Sandane has a population of 421 people and 65 HHs. The Water, Health/Hygiene Education and Sanitation (WHS) projects were implemented with the support of NEWAH in these three communities at different stages starting from 1999 providing the communities with drinking water, health/hygiene awareness and sanitation facilities. The projects were funded by WaterAid Nepal and the VDC also made certain contributions towards the projects. The communities made contributions to the projects in terms of labour, which is a practice in all the projects.

The projects were implemented in Jagretar and Sanodhappar from December 1999 and were completed in August and October 2000 respectively. Likewise in Sandane the project commenced from fiscal year 2001/02 but due to the declaration of state of emergency and unfavourable situation in the country the project was delayed by one year and completed in June 2003.

NEWAH does not implement projects directly but works through a network of partnership with locally based NGOs and CBOs that facilitate communities to implement projects throughout the development regions of Nepal. Thus, Shrijansil Youth Society in Panchawati VDC were selected as the implementing partner in Jagretar and Sandane projects and Panchawati Rural Development Center (PRDC) NEWAH's long term partner in Sanodhappar. The partner NGO selects a NGO coordinator, who plays the role of an intermediary between NEWAH, the partner organisation and the community. The coordinator does reporting on a monthly basis about the project, mobilisation of the community, acts as a representative on behalf of the partner, manages local conflicts, keeps financial records and maintains financial transparency of projects.

A key component of community management approach at NEWAH is also the Water and Sanitation Users' Committee (WSUCs). This committee is established during project social preparation phase and generally comprises 9 /13 members. As per the GAP approach to enhance and strengthen women's role and ensure equity in the community management of WHS projects, 50% representation of women in the WSUCs is targeted. Total Number of people in the WSUCs in Jagretar, Sanodhappar and Sandane comprised of 11 (6 female, 5 male), 12 (5 female, 7 male) and 9 (4 female, 5 male) members. Trainings are provided to the WSUCs to institutionalise and strengthen the committee and build capacities of its members especially on how to operate, manage, maintain the project, mobilise the people and ensure its sustainability.

The local partner (NGO) selects a local health motivator (LHM) from within the community. If they are not available from within the community then priority is given from within the VDC and if not then from the neighbouring communities. NEWAH provides training to the motivator on health and sanitation and the trainings usually last for three weeks. The LHM is involved in motivation, awareness and conducting hygiene education classes with the support of the NGO Coordinator and health volunteers. They are also responsible for collecting household data and collection of funds for latrine construction.

The community people select Community Health Volunteer (CHV) in each of their clusters with the support of the LHM, NGO coordinator and Social Technician from NEWAH. Usually CHVs represent the clusters where the water points are situated and they are mostly women. A weeklong health and sanitation training are organised for them. The CHVs play the role of coordinating meetings/mass gatherings, monitoring, motivating people in their cluster to keep their tap stand clean and mobilising people for the hygiene education classes. They are responsible for cleaning the footpath, promotion of latrine construction, ensuring no defecation on walking trails in their own cluster. Community Health Volunteer (CHV) groups were also formed in Jagretar, Sanodhappar and Sandane.

During the health and sanitation trainings the participants are provided with practical knowledge and training on how diseases are contracted and how to control them, the importance of personal hygiene, household and environmental cleanliness, why latrines are important, how faecal oral contamination occurs, diarrhoea etc. The trainings are provided to build capacities of CHVs to bring positive changes in the attitudes and beliefs of the people. At the same time motivate active participation of local men and women in the development of their community.

Sanitation masons are nominated from among the beneficiaries mainly to transfer skills and develop appropriate human resources as well as to create paid job opportunities within the community. Usually in NEWAH projects 2/3 masons are

selected and are trained on how to measure a latrine - pit size, latrine superstructure, how to cast a slab, how to install a pan, detect material quality, use of tools etc. The training focuses both on the theoretical and practical aspects of technical knowledge.

Maintenance caretakers 1/3 in number are selected in projects by the WSUC. More than often two people are trained so that even if one of them leaves the community for some reason or the other, the one who stays back can perform the role of the caretaker. The caretaker is mainly responsible for pipe fitting, cutting, threading and connecting the water supply systems. Knowledge and practical training are imparted at the same time and NEWAH staff provides technical assistance to them. As the projects complete the caretakers are responsible to see to the operation and maintenance of the scheme under the guidance of the WSUC.

Six water points in Jagretar, 7 in Sanodhappar and 12 in Sandane were constructed through the project and now they provide people access to safe drinking water and to maintain a kitchen garden through the use of wastewater where possible. Latrine construction was also promoted and NEWAH provided partial subsidy to the people to build the latrines, while the remaining amount is born by the households constructing a latrine. The subsidy rates depend on graded system of support up to pinth level and are more favourable towards supporting the ultra poor people. Health/hygiene and sanitation education (better known as *tole* (cluster) education) were also provided to people in the communities. The *tole* education classes depending on the community size last for 20 to 22 weeks and are conducted on a particular subject in each cluster on a weekly basis. Mass awareness campaigns, street dramas and folk songs, home visits and counselling are also carried out during the project period. During the various training sessions and health & sanitation education classes digging of garbage pits, and construction of dish drying racks are also promoted to improve hygiene of the people. Almost all the households in these three communities now use a dish drying rack,

Bhim Kumari using her skills to raise income

Bhim Kumari who has come to take part in the saving and credit group's weekly meeting has no hurry to return home. She does not have to trouble herself much to cook her morning meals as water is nearby and vegetables grow in her garden. That is why after the meeting ends she linger around and chats with all her friends gathered from all around the community. "Today is the day when you meet everyone, you surely feel like talking to them for a while," she says.

A pit has been dug to collect wastewater from the tap in her kitchen garden. This water is adequate to irrigate the vegetables she says. The vegetables produced in her garden are enough to feed 9 members in her family according to her so far she has not taken her vegetables to market. She explains that the excess vegetables is dried in the sun, so that when there is scarcity of vegetables it can be consumed and that has saved up lot of expenses on buying vegetables, Especially onions, cut and dried bitter gourd, radish are used up later in those circumstances.

A skilled mason throughout the community

Along with the implementation of WHS projects in the communities, improved cooking stoves were also introduced. She also had the opportunity to take part in the training that promotes the use of improved cooking stove to reduce smoke emission and improve the environment as well as save up on firewood. The households covered by the Sandane project have constructed improved cooking stoves and 98% of them are in use today and she constructed all of them. "I used to earn NRs. 130 (less than US$ 2) for constructing a stove. I bought sheep and goat from the money collected. Now I have them worth NRs. 12,000 (US$ 162). They will be worth almost NRs. 17,000 (US$ 230) by the time *Dasai* (Nepali grand festival) approaches," she says.

The improved cooking stoves have gained quite a popularity in Nepaltar valley than the traditional stoves, for many reasons such as it uses up less firewood, the smoke passes through a chimney, while cooking the cook does not have to bear a lot of heat and food is cooked quickly. Despite four years have passed since the completion of the projects, she says she has not forgotten the skills she acquired. "If there is a demand form elsewhere for construction of the improved cooking stove I am ready to construct it for them," she responds confidently.

maintain a garbage pit to dispose their garbage and use latrines. Improved cooking stoves were also promoted in the Sandane project to help improve the cooking environment in the house as it emits less smoke than the traditional stoves and saves on firewood, thus helping to improve the health status especially of women. This has been replicated in the other two communities as well and is in wide use in all the three communities.

O&M funds were collected in all the projects. The fund was collected regularly in all the three communities at the rate of NRs. 5 (better of households and NRs. 4 (poor families) every month and still is continued in these communities.

For more details on NEWAH project cycle refer to annex 3.

Training on kitchen gardening

The WHS projects implemented by NEWAH promote the use of wastewater for kitchen gardening with an objective of introducing livelihood opportunities through such linkage programmes. Thus, kitchen gardening training are provided to the, local health motivator, NGO coordinator and CHVs. NEWAH approaches the nearby Agricultural Development Office or various other local organisations involved in kitchen gardening promotion to facilitate the trainings which usually that lasts for two days. This kind of training are sometimes also provided at the time of the WSUC training or the CHV training.

The participants are informed about the importance of kitchen gardening, different kind of seasonal vegetables, vegetables suitable to that particular area, how to sow the seeds, transplant the sapling, irrigation, use of manure and household remedies to prevent diseases and pests. Likewise, knowledge about selection of appropriate seeds, preparation of seeds for the next season are also shared. The knowledge and skills learned through the trainings are then transferred to the community members.

The kitchen gardening promotion activity was introduced in the Sandane project as it was only in 2000 that NEWAH started adopting the policy of integrating kitchen gardening into their programmes with an objective of maximising the benefits of the water supply systems through the use of wastewater so as to improve the livelihood of the community people. However, since the introduction of this activity in Sandane and its effectiveness there, it was picked up well by rest of the two adjoining communities Jagretar and Sanodhappar, where NEWAH had already completed the WHS projects in 2000. *Refer to annex 4 for details on social map of Sandane.*

Impact of WHS projects in the three communities

The projects have had a positive impact on the socio-economic and health status of the local residents of these communities. Changes in hygiene behaviour, improvements in household and environmental sanitation could be observed in the communities after the implementation of the programmes.

- Community people habituated to using latrines, keeping latrines clean, practicing good hand washing behaviour, slippers used to visit the latrine
- Community people active in cleaning the household surrounding and roadside and proper disposal of garbage (in garbage pits)
- Well organised and clean kitchen, utensils kept clean, good use of locally made dish drying racks
- Water and food covered and clean drinking water used
- Appropriate use of improved cooking stove in many households
- Livestock not left astray in the community
- Waste water collected to be used in the kitchen garden

6. One development opportunity leads to another

The evident impacts in various aspects of people's lives through the implementation of WHS projects can truly be considered an example of "One development opportunity leads to another."

Heading towards progress

Since the access to drinking water facilities, kitchen gardening has become a routine activity for many households in Jagretar, Sanodhappar and Sandhane. There is widespread practice of planting seasonal vegetables, eating it daily and selling off in the Saturday market in Nepaltar. The fact that this practice is slowly emerging as an undeclared competition and leading these communities towards prosperity cannot be disputed.

People from 169 households in all these three communities have started using wastewater for kitchen gardening purpose. However, the location of taps and availability of land below the taps have limited the number of people to take up this activity as a profession. Never the less with the increasing trend of kitchen gardening people's interest towards this has grown and to some extent increased their skill and knowledge about it. With the advent of monsoon and beginning of irrigation in the fields, kitchen gardening also grew as an interest for many, informs Mahesh Dhungana a farmer from Jagretar.

Tomatoes and egg plant growing in a kitchen garden

Improvement in public health status

People have been spared from the outbreak of diarrhoea, worms and dysentery especially during the monsoon tells the local teacher of proposed secondary school Yagya Bhandari. He says, "Before project implementation we used to drink the water from the *kuwa* (spring) and the river. I myself used to distribute almost 40 packets of electrolytes every year. But now not more than 2-3 packets need to be distributed." To validate Bhandari's saying the coordinator of the Nepaltar valley sanitation committee and medicine retailer Bodh Kumar Ghimire adds, "Previously daily a patient had to put on drip treatment due to diarrhoea but lately once in 7-10 days a patient like that is brought. Greater awareness on hygiene and sanitation, use of clean water and latrines are the main reasons why people are healthy here." Citing example of the increasing awareness in the community he says, "Earlier the locals visited the *dhami* (traditional healer) after being affected with diarrhoea. They would visit the medical store finally only after they found out the *dhami* had no cure for them. At this stage their cure also seemed very grim. But now the *dhami,* personally refers the sick people to us." He claims that the training provided to the traditional healers by the Women Rehabilitation Centre (WOREC) has made the traditional healers accept the scientific norms and practices.

People express that since the habit of consuming vegetables increased there has been improvements in the health status of the people. However, no measurement scale can measure the actual change in their health status. According to Mahendra

Bahadur Biswakarma the maintenance caretaker from the Sandane project since the intake of vegetables in the communities there have been improvements in people's health. He says, "Before we ate anything dull or dry, but now we have more than enough vegetables to eat with our rice. I have become stronger as compared to before eating the vegetables."

Till now the vegetable farmers in these three communities have not used any pesticides on the vegetables unlike the regular farmers practicing vegetable farming as a vocation. They use household remedies based on their indigenous knowledge for disease and insect management for plants. The system of using fertilisers to increase productivity has not yet been introduced in these communities. For this reason the vegetables produced here seem to be organically healthy and good for health.

Support for economic growth

Since the introduction of kitchen gardening practice through the use of wastewater, selling vegetables has become a great source of income for people in these communities. There is an increase in the practice of selling vegetables in the Nepaltar market. The income earned is found used to purchase household necessities such as salt, spices, oil, soap, copy and pencils for their children. Sandane's Bhim Kumari Magar expresses, "Selling vegetables allows meeting my weekly household expenses."

Even earlier people used to eat vegetables in these communities. "However, there was a custom of eating the vegetables brought to the market by businessmen from the neighbouring district Siraha, in fact those with a strong income background could only afford this," says Jit Bahadur K.C. a teacher from Jagretar Secondary School.

The vegetable businessmen from Siraha district, Taregana Gobindapur VDC used to visit Nepaltar and exchange vegetables for crops such as paddy and wheat. This kind of barter system was prevalent in the Nepaltar valley. But as vegetable farming started fostering in the valley, this kind of system automatically came to an end according to the local people. "It is good for the farmers here that the system of exchanging paddy for vegetables has ended. Even if they do not sell their vegetables in the market, their crops are saved up in their own houses," says Narayan Bhattarai a local resident of Nepaltar bazaar.

Storing of dry vegetables like onion, garlic and potatoes are prevalently in practice in these communities. From about 10 kilos to a maximum amount of 150 kilos of onions were found to be stored in households involved in kitchen gardening while garlic were tied in bundles and stored. When a better market price was offered or it increased then the farmers sold them making profits out of it.

Onion stored for off season

Initially when people started this practice they were doubtful whether appropriate market would be available to sell the products. But now since the vegetables brought from various communities are consumed in the Nepaltar market, this doubt has subsided explain the local residents. "In the future if the production is greater than the demand we can supply the vegetables to the army barrack in Gadhi the old district headquarters. If the production is still higher, then the market in Mukurchi on the way to the headquarters can consume them. We do not have any problem of market," they say.

Money flows out of the tap for Urmila

"Truly speaking not only water but money also flows out of our tap," claims Urmila Dahal a resident of Danuwar Besi, Panchawati VDC in Udayapur District. It does not require much explanation to understand what this kind of response actually means, all one needs to observe is the lush green vegetables growing in Urmila's kitchen garden.

Urmila has used up wastewater from the public tap to water the vegetables in her kitchen garden. Income generated through seasonal vegetables grown in one *kattha* (3645 sq. ft.) land comfortably meets her household expenses. She has been motivated by the success gained from the kitchen gardening practices. She says, "After gaining access to drinking water in the community, I have started selling vegetables. Earlier I had to purchase the vegetables every week, but now I don't have to even buy a kilo."

She has bought two goats worth Rs. 4000 (approximately US$ 54) from the money saved through the sale of the vegetables. She assumes that after rearing them for a year she can sell them for more than double the price she invested on them.

There are all kinds of seasonal vegetable like *latte* (kind of spinach), cabbage, cauliflower, beans, chilli growing healthily in her kitchen garden. "Including last year, this year also more than a quintal of onions and 80 kilos of potato were produced. Previously I had to even buy *gundruk* (fermented and dried spinach) but this year have sold 10 *paathi* (approximately 7 kilos) of *gundruk* and I still have 10 more left with me," she informs.

Urmila has been able to grow vegetables because her land lies just below the tap. "No one has the right to divert the water directly from the tap for irrigation purposes, doing so there won't be enough water for the users in the taps located higher above. So I make use of just the wastewater to grow my vegetables," reports Urmila.

"I wonder how we used to get by before I started kitchen gardening practices? Reflecting back it surprises me," Urmila states reminiscing the past. Earlier she used to buy *jwano* (fennel seed) and potatoes most of the time from the bazaar and would make soup out of it as a replacement for vegetables and lentil. After kitchen gardening was introduced along with the provision of drinking water, all these experiences now remain a memory of the past.

In the beginning Urmila would carry her kitchen garden products to sell in the market. But now since vegetables grow continuously and in abundance in her garden the local vegetable vendors and various others approach her directly at her house. "I don't have the worries to carry the vegetables to the market. People from Maubasi (neighbouring community) visit me to buy the vegetables. Just have to freshly pick the vegetables and weigh it for them, and I can count my pennies staying at home," she adds.

Only three years back, Urmila who used to consider vegetables as items to be bought for consumption, now has collected good experience about kitchen gardening. She believes if there was more water available for irrigation, vegetable farming would be possible on a larger scale.

Social transformation through kitchen gardening

Many who have their land located near to the tap or below the taps in Sandane, Sandhappar and Jagretar have maintained a kitchen garden. Out of these, majority of them sell the vegetables in the market from time to time. "We women have benefited the most from kitchen gardening. Being the household cooks it was difficult to manage the vegetables for meals when we had no vegetables growing in the garden. It is now convenient to go and pick the vegetables any time we want them," explained Pan Kumari Tamang the WSUC Vice Chairperson of Sandane project.

This saying was widely in practice earlier 'hay for the buffaloes and *gundruk* (fermented and dried spinach) for the people' during the dry seasons. But now people express that it is possible to eat vegetables like spinach, bitter gourd, beans, lady's finger, egg plant etc.

Kitchen gardening has become a matter of pride for the local residents. "It pleases us to observe the astonishment on faces of passers by to see vegetables growing in our gardens," says teacher Yagya Bhandari also the Chairperson of the WSUC in Jagretar. "Selling vegetable is turning out to a subject of social pride," he tells.

Just anybody has been involved in kitchen gardening where wastewater is available, though his or her main occupation may be different. The kitchen garden maintained in ½ ropani (2738 sq. ft.) land availed by the property-owner to Sanjaya Kumar Shah of Siraha working as a science and math teacher has gained much popularity. Shah has been able to produce 60 kilos of onions through day and night of hard work. Enough vegetables are growing in the garden to feed him in the morning and evenings. This step of Shah goes to additionally prove that kitchen gardening is a profitable profession says Jiwan Adhikari local resident of Jagretar.

A displaced life taught me how to make a living

"I used to feel really ashamed to sell the vegetables from my kitchen garden in the *hatiya* (weekly market). But soon I learned from seeing people from various places doing all kinds of odd jobs to make a living. This made me feel that working hard for a living is nothing to be embarrassed about. The vendors in the market are also people like us. It is no dishonour for them, why should it be for us? Thinking about this I also got rid of my shame. Now I confidently sell my kitchen garden vegetables in the *hatiya.* The money I earn selling vegetables is enough to buy salt, oil, kerosene, soap, spices and copy & pencils for my children. Kitchen gardening has actually served to meet our daily expenses." This story of Parvati Bhandari from Sanodhappar community in Udayapur district gives a glimpse of women's empowerment in the community.

Parvati belongs to a medium poor family. Last year she was internally displaced from her place of living due to the impact of conflict in the country. Since the restoration of peace she has been able to return home with her family. She has sustained kitchen gardening practices, which she started before being displaced, and now sells the vegetables in the market as well. "People here sell vegetables worth NRs. 500 (approximately US$ 7) within a week during the season, we can also sell as much now," she reports self confidently. She is well motivated after kitchen gardening became a new source of income for her.

Vegetables like lady's finger, beans, eggplant, pumpkin, onions, garlic, bitter gourd grows well in Parvati's garden. Since Nepaltar market is nearby there is no problem of the market for her. Parvati's house is situated right below the tap stand, so it has been easy for her to collect the wastewater for the kitchen garden. "This much water is enough for us up till now. If there was more water then I would grow more vegetables, I think," she says.

Fish farming also became possible

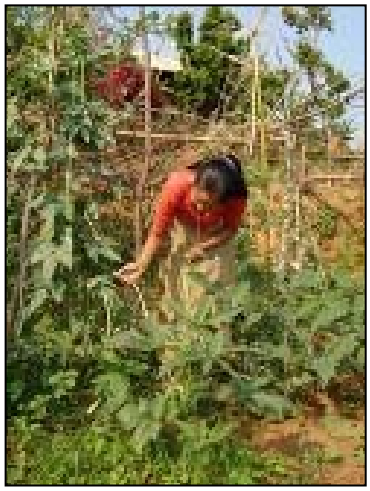
Fish farming in Jagretar

It is not only vegetables, Jit Bahadur Khadka of Jagretar has also started a fish farm on a small scale. The excess water flowing out of the spring protection has been collected in a small pond below his house where he has left the fingerlings.

Prior to this also Khadka had left some fish in the pond. He had sold about 50 kilos of fish earlier. "Because due to the increase in the practice of using poison to kill the fish in the river, these days it is difficult to find any fish, that's why the fish from the pond is more in demand," he says.

This year, Khadka has left 500 fingerlings in the pond. The fish from my pond is like the vegetables, anytime you want to eat it is readily available, especially when you cook it for your visitors it gives you pride," he adds.

Thir Kumari motivated through vegetable gardening



Thir Kumari Thapa Magar who is looking after her three-month old son is also busy attending to the household chores in the mean time. She climbs the stairs to the kitchen garden located just above her house and starts picking the beans quickly and returns to the porch to separate it. Since all the household members are occupied in their own work from early morning this new mother is responsible for cooking and feeding all her family members.

One can find fresh vegetables like beans, eggplant, tomatoes, chilli in Thirkumari's garden. "Like before, I don't have to worry about what *tihun* (vegetable) to cook everyday," she says. Observing the tap so near the house and a kitchen garden full of vegetables, it is possible to deduce that her household burden has reduced to a large extent.

After the accessibility of drinking water services in the community, women have been freed from the burden of carrying water from long distances for their daily use. During the implementation phase itself, the user committee members were informed about collecting and making use of the wastewater flowing from the taps and utilizing it to maintain a kitchen garden. Gaining opportunity to use the wastewater along with technical knowledge about kitchen gardening attained through the project, farmers like Thir Kumari whose land is located just below the tap stand are able to consume vegetables grown in their own kitchen garden.

Thir Kumari sometimes sells surplus vegetables that have been saved after household consumption in the Nepaltar Market. "So far I have not kept any record of how much I have sold. But every season, some vegetable or the other is taken to the market every week and sold there," she informs. She shares her experiences of people coming and asking her about the kitchen gardening know how after observing ample vegetables grown in her kitchen garden maintained in approximately 1 *ropani* land (5476 sq. ft.).

Thir Kumari has stored 60 kilos of onions so as to sell when the price inflates in the market. "It is not only us who store the onions now, people who are involved in kitchen gardening elsewhere also do so, so that they can consume it when it gets expensive or sell it otherwise in the market," she says. "Earlier all we could save was *gundruk* (fermented and dried spinach), but now the practice of saving onions and garlic has been introduced."

Thir Kumari has been deeply troubled by the aphids affecting her plants. "Even after using ash the it cannot be cured, when aphids attack the plant even lush green vegetables becomes useless," she says hopelessly. Thir Kumari who only has basic knowledge about disease management is unaware that there are Junior Technical Assistants (JTAs) appointed by the government to help people deal with these kinds of problems, but they do not visit the communities as regularly as they should be.

Apart from the small-scale problems created by the plant diseases she informs that there are no other problems as such with kitchen gardening practices.

Influence in neighbouring communities

Observing the vegetables grown by farmers through the use of wastewater in Sandane, Jagretar and Sanodahhpar, the residents from the neighbouring communities now believe that if you put your effort to anything everything is possible. Due to the widespread practice of kitchen gardening after the access to drinking water and sanitation facilities the people from various other communities feel that these communities have comparatively progressed better than their own. Baburam Khatiwada of Bhalaya Danda in Nepaltar valley says, "I came to realise that vegetable farming is four times more profitable than cereal crops after watching farmers from Jagretar grow vegetables and sell them in the market."

People selling vegetable in Nepaltar

Since the promotion of use of wastewater for kitchen gardening through NEWAH implemented WHS projects, the areas with basic irrigation facilities in the Nepaltar valley have also increased the practice of kitchen gardening says Bhakta K.C. a vegetable businessman from Nepaltar market. According to his experience apart from the three project communities, the people from other communities have started to bring their produce to the market.

The teacher from Bhalaya Danda Secondary School, Yadav Raut, however believes that there are still several obstacles preventing the effects of development brought about by the WHS projects in neighbouring communities to be transferred to other communities. He is of the opinion that the drinking water project implemented in his area with the support of ADB has not been able to integrate income generating opportunities like kitchen gardening into their programmes, thus they have not been able to gain the necessary skills and knowledge about kitchen gardening to adopt it. "The people from this community would use their limited skills and knowledge to practice kitchen gardening seeing people do so in the three projects, but water does not flow out of these taps thus, people here have not had the opportunity to use up wastewater for this purpose," tells Baburam Khatiwada.

Selling vegetables is now a subject of social pride

Yagya Bhandari a teacher from the Jagretar proposed Secondary School is also the Chairperson of the Sanodhappar Drinking Water and Sanitation Users Committee (WSUC). Bhandari who can be counted as one of the few literate people in the community, not only teaches what he knows to the children but also his community members.

After clean drinking water facility was introduced in the community Bhandari was highly motivated and considers the drinking water project as the entry point of development in that area. Making an appraisal of the changes brought about by the drinking water and sanitation services he says, "The community has become odourless due to people's habit of using the latrines. Time has been saved since one does not have to travel far to fetch water. This has allowed people use the saved time to work in the kitchen garden."

Bhandari claims that kitchen gardening has not only allowed to increase the economic status of the community but also improved eating habits and changed the daily routine of the people. Majority of the users of the Sanodhappar project carry some vegetable or the other from their kitchen garden to the sanibaare hatiya (Saturday weekly market) in Nepaltar informs Bhandari and adds, "It has been a subject of pride for all to take the vegetables from each household to the market to be sold."

Earlier the residents here used to eat vegetables in very limited amount and there was no variety. Ferns from the jungle, a little of onion, unripe mangoes substituted for vegetables with rice, but now various types of vegetables are cooked for meals in the people's households.

"During WHS project implementation in Sanodhappar, the concept of using wastewater for kitchen gardening had not been introduced. Later when a similar project was implemented in Sandane the concept of kitchen gardening was introduced in an integrated manner into the project. That is why the users of Sandane project took the kitchen gardening aspect as an integral part. However, kitchen gardening took sometime to take off in Sanodhappar and Jagretar," explains Bhandari. According to him though the situation was like this initially, today out of the 52 households in Sandhappar 45 households use up wastewater for kitchen gardening purposes.

Concerning people's difficulty in dealing with the problem of aphids and other plant diseases in Sandane, he advised that use of mixture of soap and water in the plant kills the diseases. He believes that the use of strong pesticides on vegetables can have an adverse effect on the health of the people so he stresses that household remedies should be applied. He also has acquired knowledge about seeds. "Only seeds with high germination rate are useful to the farmers. Thus, one should not compromise with the price regarding the seeds," he says.

Yagya Bhandari is of the opinion that kitchen gardening is possible from the tap water in Sanodhappar as even today water overflows for almost 13 hours from the 3 reservoir tanks constructed through the project. "Each household in the community need to follow kitchen gardening practices in not less than 1 ropani = 5467 sq. ft. land to use up all the waste water in this project area," he reasons out.

Drinking water projects contribute to promote kitchen gardening

According to Rabin Lal Shrestha of WaterAid Nepal one of the most important goal of drinking water and sanitation is to reduce poverty in communities. It is important to focus on improving the living standard of the people, increasing their access to nutritious diets and creating income-generating opportunities side by side so as to achieve the above-mentioned goal. All these three factors can be addressed if kitchen gardening is promoted through the use of wastewater in communities when they have access to water supply systems he says.

Likewise Yubaraj Shrestha of NEWAH emphasises that integration of kitchen gardening in drinking water projects is important. “This is necessary to use up the time saved and to use the available water to maximise the benefit. Mobilisation of O&M funds and promotion of kitchen gardening as a livelihood package after the construction work completes is found to have a positive impact in the living standards of the people,” he tells. Further Thakur Bhatta of Helvetas believes that since kitchen gardening is an income generating activity it is important to link it to other sectors of development. It needs to be linked to micro hydro and major irrigation projects he suggests.

The Chairperson of PRDC Janak Giri explains that through the promotion of kitchen gardening in the community people are now more active. "Earlier, all the time would be spent on carrying water, but now they have been able to spend the same time in the kitchen garden. More productive work has been possible through less effort," he expresses. He stressfully adds that this kind of change has supported to raise the overall rural economy.

Challenges

People motivated through introduction of kitchen gardening as a new farming practice in Nepaltar valley are however depressed due to problems created by diseases and insects (aphids, plants drying out and spots in the vegetables), thus all their effort is going to waste. Abi Bahadur Magar, Chairperson of Sandane WSUC says, “Because the diseases and insects are destroying the plants, our hopes are slowly dying out.”

Based on the knowledge acquired through the two day training organised during the project the vegetable farmers are unable to deal with the emerging problems regarding this subject expresses Janak Giri, Chairperson of PRDC. Though the Nepal Government has appointed Junior Technical Assistants (JTAs) to advise and assist them on how to deal with the problems in the communities, they never visit these areas. Due to the problem of conflict most of them are stationed in the district headquarters. The community people do not have access to the JTAs, so there is no question about them seeking any kind of technical assistance from them.

Presently since no separate programmes have been introduced to actually promote kitchen gardening in these communities, this also stands as a challenge. Mahesh Dhungana of Jagretar is of the view that, the amount of wastewater is not going to increase, thus kitchen gardening on a large scale is not possible all over the project area.

Lessons Learned

The vegetables farmers from the three communities Jagretar, Sanodhappar, and Sandane along with kitchen gardening practices have gathered a lot of experiences through trial and error. They also know now that what kind of vegetables can be grown in their area, how much of water is required to irrigate how much land etc.

“To grow vegetables a large portion of land is not necessary. Lot of effort is required. Off season vegetables need more care, thus seasonal vegetables need to be grown more,” says Kamal Bahadur Magar of Sandane. “However no matter how much effort you put in if you do not fence the gardens the goats will eat and spoil the vegetable plants,” he further adds.

These days the farmers use polythene pipes to transport the water from the wastewater pit to the kitchen garden because a lot of water seeped into the soil when drains were dug instead. Based on their experiences of the past this has been a lesson learnt.

In all the three projects none of the users transport the water directly from the taps to irrigate their kitchen garden. “If water is used from the taps more vegetable gardening maybe possible, but less water will flow out of the taps located above and disputes will arise. It is also a rule that water cannot be transported directly through a pipe to the houses,” informs Pan Kumari Tamang the Vice-Chairperson of the users committee. Because of this regulation everyone has joined hands to practice kitchen gardening through the use of wastewater in the communities.

According to the experience of the farmers locally produced seeds of vegetables like cucumber, pumpkin, etc. are more qualitative. “Germination of seeds personally selected and dried has a guarantee and they grow well too,” says Chandeswhar Shrestha of Jagretar.

The farmers have experienced that exchange of experiences helps to solve several related problems. For instance the teacher of Jagretar teaches about the household remedies to deal with problems of insects in the plants to the farmers in Sandane.

Though in the present situation everyone may not be able to gain economic benefits out of kitchen gardening, but to be able to consume it at home itself is a great thing. The expenses from buying vegetables are saved and the practice of bartering crops for vegetables has stopped, saving crop produce in their own homes. They sense that a small-scale activity like kitchen gardening has had a great influence in the economic status of the households in these communities.

Recommendations

Observing the transformation in the socio-economic status of the users in the Sandane, Sanodhappar and Jagretar projects through kitchen gardening, a need for replication of this is seen as necessary in various parts of the country. Kitchen gardening introduced as a linkage programme in its projects by NEWAH if promoted by other organisations involved in the promotion of drinking water and sanitation sector will help to benefit a large proportion of the population. For this the government of Nepal should specifically introduce the provision of promoting kitchen gardening in the Rural Water Supply and Sanitation National Policy as an income generating opportunity.

Not all the users have been able to adopt kitchen gardening in areas where it has been promoted. It is necessary to seek for various options for the households unable to maintain a kitchen garden simply on the basis of location of the taps and availability of land and need to include them in this kind of activity. Drip irrigation and rainwater harvesting could be few possible options.

These households who have initiated kitchen gardening practices just based on the knowledge and skills acquired through a two days training package require refresher trainings so that they can find solutions to the problems faced by them during the process of practicing kitchen gardening. Likewise they can also adopt the advance technologies and procedures to upgrade their kitchen garden.

In majority of the easily accessible areas drinking water and sanitation facilities have been provided and now the WHS projects will be implemented in more remote and inaccessible places that are not served with these services. In those areas to consume the excessive vegetables after household consumption, appropriate management and linkage to market services is necessary. If there is appropriate linkage with the markets the vegetable farmers can economically benefit from it.

Presently the farmers face great problem of plant diseases and insects. Despite the government has appointed JTAs who have appropriate knowledge and skills about kitchen gardening, they do not visit the communities as regularly as possible, thus the government needs to take effective steps to make optimum utilisation of their skills so that communities benefit from kitchen gardening and are able to deal with the problems related to it.

Nepal Water for Health
Kitchen Gardening Procedures (Translated)

NEWAH has been providing awareness on kitchen gardening to the communities where it supports drinking water, health/hygiene education and sanitation (WHS) projects so that the time saved especially that of women from fetching water can be used up in income generating activities such as kitchen gardening. However, it was felt that NEWAH's support towards this effort was not enough. So in 2001 one of the pilot programme was implemented in Dhodana with the objective of providing training on kitchen gardening aspects, introducing the sharing practice of knowledge and skills with respect to kitchen gardening in Tole (cluster) education classes and making provisions to make seasonal vegetable seeds available through the local partners and users committee. NEWAH believes that introducing this kind of practice in the programmes will help to improve the health status of the users and minimise health expenses. Through the introduction of kitchen garden in the households people will save on buying vegetables and make additional income from selling them, thereby improving their economic status. To proceed with the programme the following procedures will be followed:

1. To provide three to four packets of seeds per household in the project areas lump sum budgeting will be done and spent from the joint account
2. During the first day of the caretaker and community workers training, what seasonal vegetables are grown in the community, and of them which vegetables are produced more (generally) and what knowledge and skills do the community women and men possess with regard to kitchen gardening will be discussed. And on the last day of this training farming of two to three vegetables need to be prioritised to provide practical knowledge and skills related to it
3. Based on the prioritisation and keeping in mind what kind of knowledge and skills can be shared during the specified period of training as well as to make the optimum benefit out of it, an educational curriculum needs to be developed
4. Knowledge and skills should be provided according to the prepared curriculum and the participants need to be made clear about the kitchen gardening procedures
5. 50% of the total allocated budget for kitchen gardening will be transferred from NEWAH to the joint account after completion of caretaker and community worker training
6. The transferred lump sum amount will be withdrawn from the joint account. The local partner (NGO) and the Social Technician from NEWAH involved in the field will properly orient the users committee on the use of fund and kitchen gardening procedures and will make a receipt that the fund has been received in the users committee's maintenance fund account (with a mention that the work will be undertaken according to the kitchen gardening procedures). The fund will then be deposited in that account. The committee will then book the amount in the ledger (according to annex 1) as revolving fund for kitchen gardening. This fund will always remain with the committee.
7. In the initial stages for 1-2 times the NEWAH Social Technician, users committee and the local partner (NGO) representative should consider the following point and study the market and should inform the users committee about the findings, make a list of how much and what kind of seed are demanded and can be used. Based on that they should purchase the seeds from the market using certain amount of the fund received.

Points to be considered for the market study

- Whether the seeds are spoilt or its time has expired
- Whether suitable or unsuitable to the weather condition of the village or area
- Vegetable seeds as prioritised during the training period
- Comparative prices for the seeds in the market
- Distributor reliable and can regularly dealt with (in the future as well)
- As far as possible the seed distributor can provide the technical knowledge about it

8. The original bill along with the seeds purchased from the market should be handed to the committee. The income and expenditure records of the seeds should be maintained in a separate register (e.g. of how to maintain the register will be according to annex 2)
9. The users committee can decide the selling price of the seeds from the actual cost and not exceeding the market price through a discussion. It would be better for the committee to take into consideration the suggestions provided by the local partner organisation and NEWAH staff
10. The amount saved from the sale of the seeds should be deposited monthly in the bank and the copy of the voucher should be maintained. If the stock finishes the committee should purchase the seeds and should sell/distribute according to the agreed procedures and keep records of it
11. If the programme is found to be practically running and if the committee is found to play an active and effective role, one year after 50% of first instalment, according to the point 7/8 in the procedures the rest of the cash will be transferred to the committee by NEWAH
12. While distributing/selling the seeds for the kitchen gardening programme it should be distributed among the water users only
13. Generally, while distributing/selling the seeds, a user can be sold a maximum of 2 packets of one variety of seed. The additional seeds can be sold after observing the area of land prepared for kitchen gardening
14. While selling the seeds to the ultra poor households they need to be sold at 50% discount
15. The users committee should give continuity to this work. The committee should keep the community women and men informed about the kitchen gardening practices and the community workers, caretakers and subcommittee should be made active and need to maintain proper documentation of this
16. During the refresher training of community workers, caretakers and sub-committee and committee members, the users should be provided more information regarding the subject
17. The committee should request the agricultural development branch office for the technical advise
18. The community workers, users committee or the person appointed by the committee or any member from the committee need to keep proper documentation of the whole process

Monitoring and Evaluation

The monitoring and evaluation of whether the users have taken the seeds from the committee and have started kitchen gardening or not at a practical level through the programme should be done in the following manner:

- The seeds should be sowed within five days of purchase
- Need to find out what benefits have been received by a particular user by practicing kitchen gardening

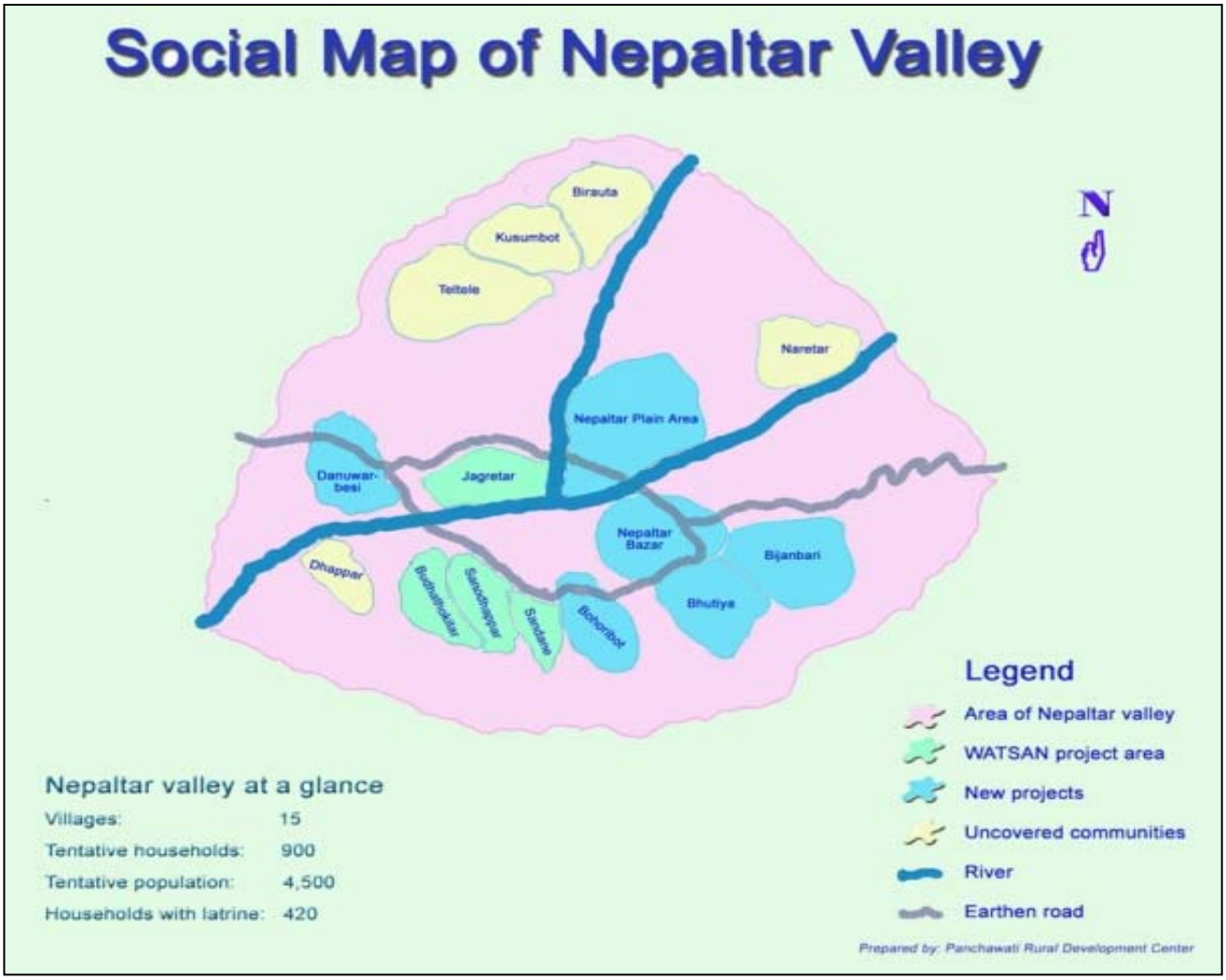
- Whether the committee have kept the records according to the annexes should be found out
- Whether the users have been provided services proportionately or not

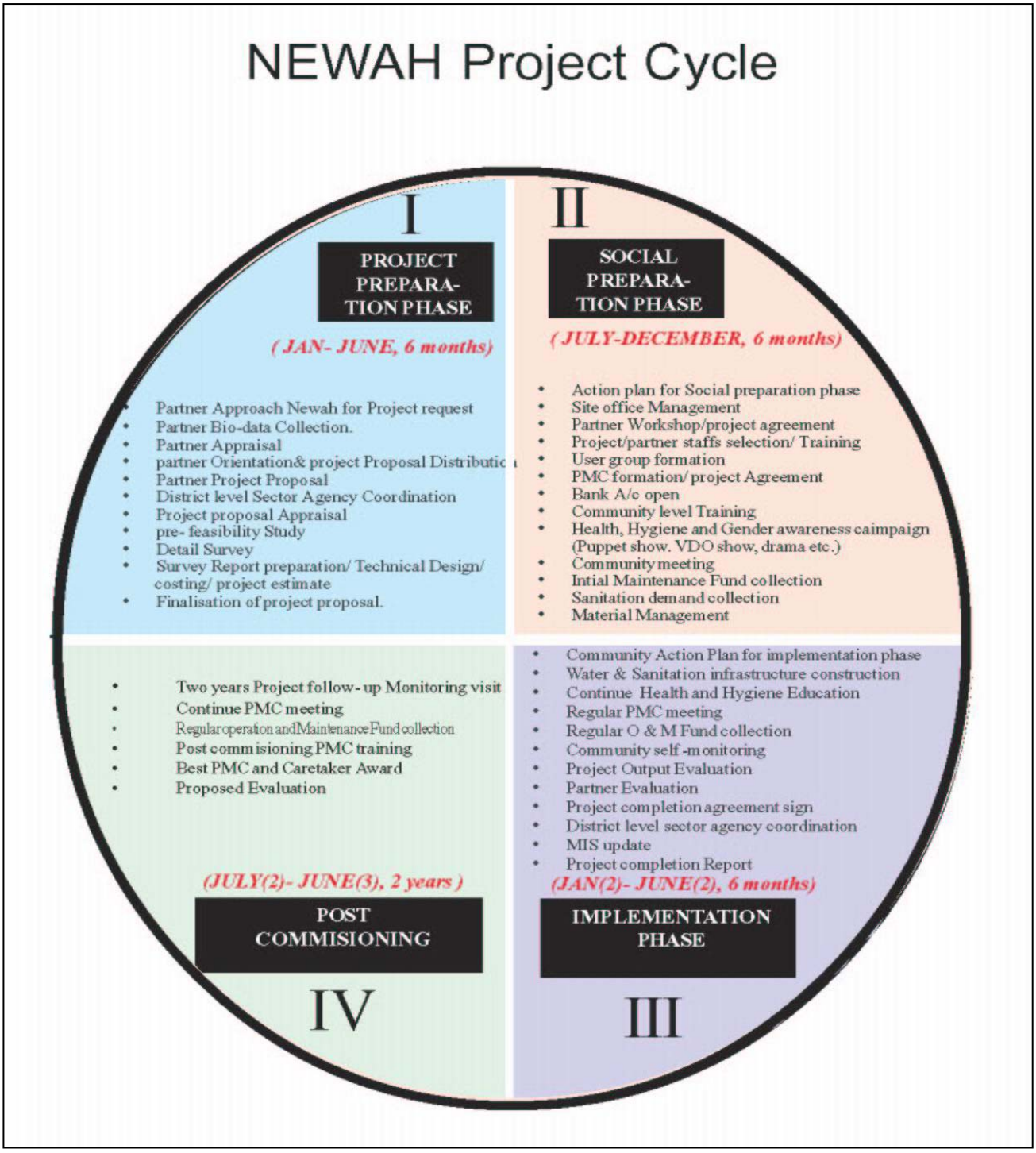
Description of income and expenses of kitchen gardening

SN	Description	Income (Rs.)	Expenses (Rs.)	Stock	Remarks

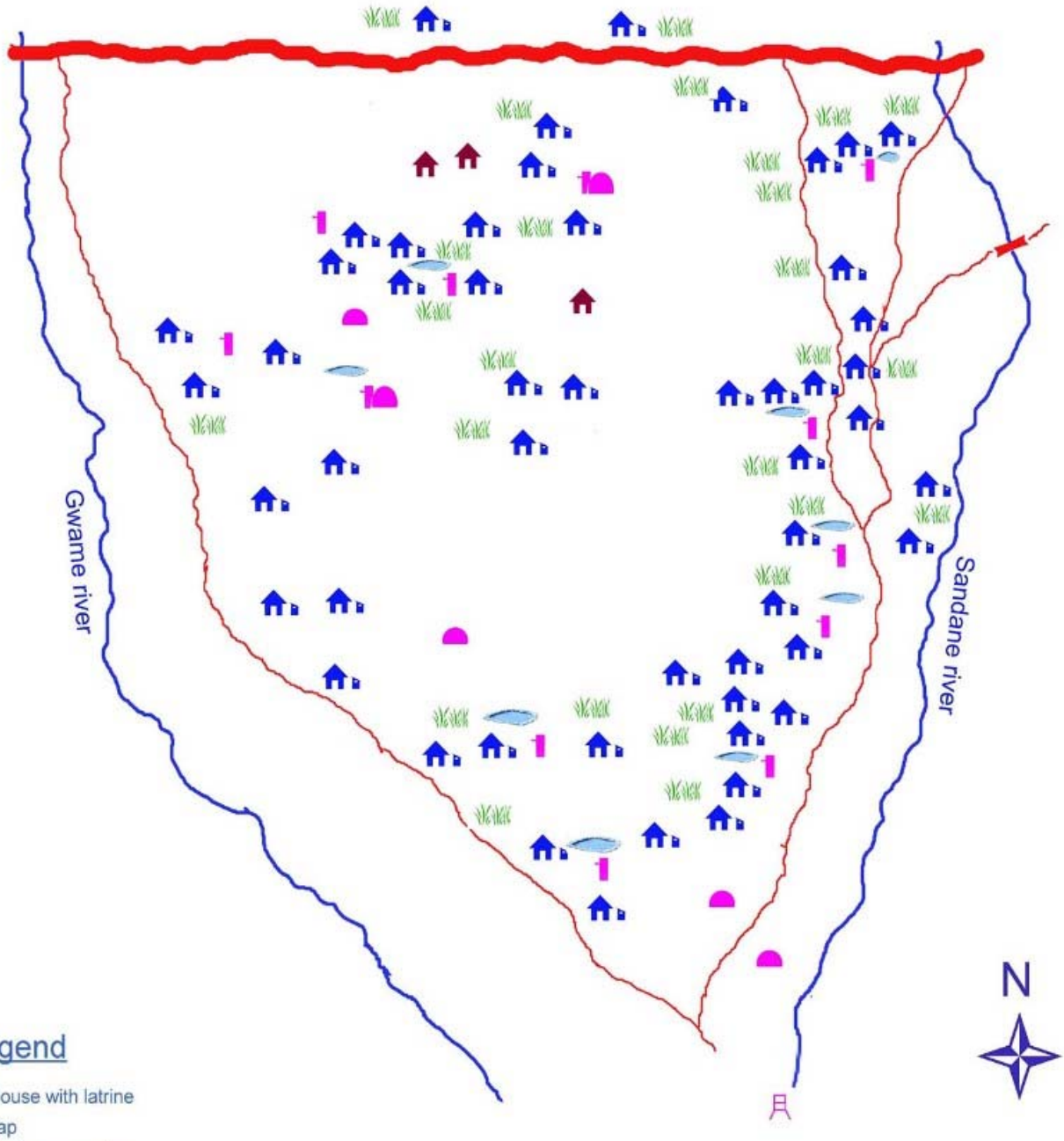
Income and expenses of seed

SN	Description	Income			Expenses			In stock		
		Quantity	Rate	Total	Quantity	Rate	Total	Quantity	Rate	Total


Social Map of Nepaltar Valley
Birauta
Kusumbot
Teltele
Naretar
Nepaltar Plain Area
Danuwar-besi
Jagretar
Nepaltar Bazar
Bijanbari
Dhappar
Bhutiya
Bohoribot
Sandane
N
Legend
Area of Nepaltar valley
WATSAN project area
New projects
Uncovered communities
River
Earthen road
Nepaltar valley at a glance
Villages: 15
Tentative households: 900
Tentative population: 4,500
Households with latrine: 420
Prepared by: Panchawati Rural Development Center


NEWAH Project Cycle
I
PROJECT PREPARA-TION PHASE
(JAN- JUNE, 6 months)
Partner Approach Newah for Project request
Partner Bio-data Collection.
Partner Appraisal
partner Orientation& project Proposal Distributic
Partner Project Proposal
District level Sector Agency Coordination
Project proposal Appraisal
pre- feasibility Study
Detail Survey
Survey Report preparation/ Technical Design/ costing/ project estimate
Finalisation of project proposal.
II
SOCIAL PREPARA-TION PHASE
(JULY-DECEMBER, 6 months)
Action plan for Social preparation phase
Site office Management
Partner Workshop/project agreement
Project/partner staffs selection/ Training
User group formation
PMC formation/ project Agreement
Bank A/c open
Community level Training
Health, Hygiene and Gender awareness caimpaign (Puppet show. VDO show, drama etc.)
Community meeting
Intial Maintenance Fund collection
Sanitation demand collection
Material Management
III
IMPLEMENTATION PHASE
(JAN(2)- JUNE(2), 6 months)
Community Action Plan for implementation phase
Water & Sanitation infrastructure construction
Continue Health and Hygiene Education
Regular PMC meeting
Regular O & M Fund collection
Community self -monitoring
Project Output Evaluation
Partner Evaluation
Project completion agreement sign
District level sector agency coordination
MIS update
Project completion Report
IV
POST COMMISIONING
(JULY(2)- JUNE(3), 2 years)
Two years Project follow- up Monitoring visit
Continue PMC meeting
Regular operation and Maintenance Fund collection
Post commisioning PMC training
Best PMC and Caretaker Award
Proposed Evaluation

Sandane Drinking Water and Sanitation Project Area
Panchawati-4, Udayapur, Nepal



legend

- House with latrine
- Tap
- Spring protection
- Kitchen garden
- Waste water collection pond
- Households not covered by the project
- Intake
- Spring protection
- Main road
- River
- Road

Total Households:	54
Taps:	10
Spring protection:	2
Households not covered by the projects:	3

Prepared by: Abi Bahadur Magar, Chair person, Sandane Drinking Water and Supply and Sanitation Project
Thir Kumari Thapa Magar, User

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Stakeholders Interviewed

Rabin Lal Shrestha, Research & Advocacy Manager, WaterAid Nepal

Thakur Bhatta, Social Training and Research Coordinator, Helvetas Nepal

Yubaraj Shrestha, Monitoring & Evaluation Manager, NEWAH

Janak Giri, Chairperson, Pachawati Rural Development Centre

Other stakeholders in the community were also interviewed.

Methodology

The data used in this study is more qualitative as well as quantitative to some extent. Both primary and secondary data has been used. Primary data was collected during the field study and the conversation made with the key informants in the community. Secondary data in the sector is taken from the desk review of previous studies, research, documents of different organizations national and international. The interviews taken with the sector stakeholders have also been included.

About the Authors

Mr. Labahari Budhathoki, Programme Support Officer at NEWAH since August 2005 comes from Ramechaap District in the Central Region of Nepal which is one of the most rural districts in the Janakpur Zone. He started working in NEWAH from 1991. Over the 14 years of his service he has gained immense experience, skills and knowledge on technical aspects, project planning, facilitation, training and implementation of rural drinking water and sanitation projects and has had the opportunity of working at community & district level throughout the five development regions in the country. He was actively involved in the implementation of the three concerned WHS projects in the Eastern Region on which this case study is based on. Presently he is working in the Far Western Regional Office of NEWAH and is involved in project planning, coordination with the local level bodies and local NGOs at the district level, partner support/capacity building and agreement, facilitation in project implementation, project visits and monthly monitoring of projects and partners. He was also awarded for his writing skills last year.

Mr. Budhathoki was involved in writing the first case study that won the PRODWAT award in 2005. The case study was edited and translated by a team of staff from the Knowledge Management and Advocacy Division in the NEWAH Headquarters. Mr. Budhathoki was involved in the information and data collection for the detailed case study in the three communities with regard to the PRODWAT award.

About NEWAH Knowledge Management & Advocacy Division

The NEWAH Knowledge Management and Advocacy Division has a team of staff comprising of four members who support in the documentation & publication, information sharing, articles and case study write up (most of the case studies are provided by field level staff), editing translation, reporting, documentation, website update, coordinating trainings for staff to improve their writing skills and advocacy works such as journalist orientation on importance of sanitation to increase media coverage, organising media campaigns, supporting to organise symposiums etc.

Mr. Bharat Adhikari, Communication Officer started working in NEWAH since 2000. His background is journalism. He is involved in preparing publications in Nepali, producing the WASH sectoral newsletter in Nepal, writing articles and case studies, website management, editing and translation support from English to Nepali, maintaining relations with the media persons and organising trainings, supporting regional staffs to prepare documents & publications etc. He possesses immense writing skills and control over the Nepali language.

He has been actively involved in this detailed case study writing, collecting data, photographs and information from the field, transcribing, preparing the write up in Nepali, and formatting the document.

Ms. Anamika Singh Bhandary, Documentation Officer started working at NEWAH since 2004. Previously she worked as a Information Officer in Association of the District Development Communities Nepal (ADDCN) and has been involved in producing newsletter, reports and documents, and has skills in translation of documents from Nepali to English. Presently, during her one and half year at NEWAH she has been responsible in preparing the annual report of NEWAH, other publications, writing process documents and reports, supporting to prepare documents for website update and translation of case studies and articles.

Her involvement in the case study has been translation and organising of the document from Nepali to English.