9 LINKING WATER SUPPLY AND RURAL ENTERPRISE: ISSUES AND ILLUSTRATIONS FROM INDIA

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Summary

Improving domestic water supply has the potential to promote rural enterprise, reduce poverty and enhance rural livelihoods, but may not do so on its own. The term 'rural enterprise' refers here to household-based enterprise activity, like pottery, brick making, toddy tapping, salt-making, gum collection, livestock rearing, handicrafts, etc. While the link between water supply (irrigation) and agriculture is clear enough, the links between domestic water supply and rural enterprise are not always apparent. This paper explores two such links, using illustrations from rural India, before discussing the policy issue of promoting rural enterprise and enhancing rural livelihoods through better domestic water supplies.

The first link is that breakdowns in regular domestic water supply can impose (monetary and non-monetary) costs on those engaged in rural enterprise. Data from rural enterprises involving women in rural Gujarat are used to calculate the costs of temporary breakdowns in water supply.

The second link is that improved domestic water supply can reduce household water collection time, and thus 'create' time that can be used for rural enterprise. This paper uses data from rural Gujarat to estimate the benefits of improved water supply, for the hypothetical case where it takes a household only one hour per day to collect domestic water. This case also illustrates how women augmenting household income through rural enterprise have a greater say in household decision-making over the use of their time and money.

These links make a strong case for improving domestic water supply not only for the traditional reasons of reducing women's drudgery and improving health and hygiene, but also to enhance household income, empower rural women, reduce poverty and thus improve rural livelihoods.

But policy guidelines are less direct. Improved water supply can promote rural enterprise only if there are other interventions that facilitate enterprise development, such as skill development, affordable credit, efficient production techniques, access to markets, awareness of market trends, etc. This paper analyses the profitability of some water-using rural enterprises in Andhra Pradesh in southern India, and in Gujarat in western India, and notes several characteristics: annual profits (and profits per unit of water used) vary widely across enterprises, enterprise activity is not usually carried out throughout the year, profits vary from year to year for each enterprise, and profits may be more sensitive to market conditions (demand, price and costs) than to the mere availability of inputs (skills, time, capital, raw material, and water).

The paper concludes that such insights into the characteristics of existing rural enterprise must play a major role in determining official policies on improving water supply and promoting rural enterprise. Put simply, making more water available or reducing water collection time can help develop rural enterprise, but will not do so unless several other factors are addressed, such as annual profit, the availability of inputs including water, skill and cheap credit, the capacity to take risks, the ability to respond to market conditions, etc. Thus, 'making water work' for poverty alleviation can be a viable policy guiding the promotion of domestic water supply, but it requires interventions that encourage enterprise development – especially if potential beneficiaries are poor, illiterate, socially deprived and less able to bear the risks of enterprise.

9.1 Introduction

In rural India, as in other parts of the world, domestic water supplied through stand posts and hand pumps is used for drinking, cooking, bathing, and washing vessels, clothes and floors. But, as in other places, domestic water supply is also used for household-based enterprise activities like pottery, livestock rearing, handicrafts, etc. Water is also taken from water bodies around villages for productive activities, for instance by washer men, brick-makers, salt-panners etc. While all such activities are collectively referred to here as 'rural enterprise', the use of water for such rural enterprises is usually termed 'productive water use'.

9.1.1 Improved domestic water supply and rural enterprise

The links between improving rural domestic water supply and rural enterprise are not always apparent to policy makers. Instead, the usual policy justification for spending money to improve rural water supply is either to improve health and hygiene in rural communities or to reduce the drudgery, usually borne by women and girls, of walking long distances to fetch water, especially in summer. However, a recent study in rural Gujarat in western India (IRC, FPI and SEWA, 2001)[1] has shown that, in addition to these benefits, women in rural enterprises can also get the direct economic benefits of increased incomes, and indirect social benefits of greater participation in household decision-making, from improved domestic water supplies. If income-generating activities are provided alongside improvement in water supply, women can use the time saved to earn extra income for the family. Such extra earning can be an important succour in times of stress and also act to empower women, which can improve gender relations within families and in village societies at large.

The data from the Gujarat study also illustrate that shortages in water supply can impose costs on those involved in rural enterprise. If women are already engaged in such productive activity, shortages in water supply forces them either to stop their productive activity in order to collect water, or to pay someone to collect water for them. Either way, it imposes an economic cost on these women. Measuring this cost gives some indication of the potential benefits of improving water supply.

9.1.2 Impacts on poverty reduction

A well-designed policy of coupling improvements in water supply with income-generating rural enterprise can have a significant impact on poverty in such regions. But these potential economic benefits assume even greater significance if women are the main beneficiaries.

While there are powerful reasons for using improved water supplies to reduce poverty, empower women, and improve rural livelihoods in general, policy makers needs to be aware that improved water supplies on their own cannot lead to these outcomes. That requires, additionally, an enabling environment comprising a variety of economic and non-economic factors, including access to cheap credit, production skills, organisational skills, awareness of market conditions, the ability to take risks, and to respond to market signals. A study of rural enterprises in Anantapur district of Andhra Pradesh revealed that while economic profits are an important consideration, there are several other local considerations that underpin existing rural enterprises.[2]

These are the two arguments developed in this paper. Although the illustrations and arguments are made in the specific context of rural India, they may be equally applicable to a wide section of the developing world.

9.1.3 Structure of the paper

Section 2 outlines the geographical and socio-economic contexts of the study areas. Section 3 describes the methods of data collection, while Section 4 details the two links between improved water supply and rural enterprise highlighted in the paper, viz., the potential economic benefits of improved water supply, and the potential costs of water supply breakdowns, drawing on the Gujarat study. Section 5 examines the characteristics of operating rural enterprises in Andhra Pradesh, while Section 6 discusses the policy implications of these findings. Section 7 concludes.

9.2 The Study Areas

Two different sources of data have been used: one being a study conducted in Santalpur and Radhanpur blocks in Banaskantha district in the western Indian state of Gujarat, and the other, a study conducted in Kalyandurg mandal in Anantapur district in the south Indian state of Andhra Pradesh (see Figures 1 and

[1] The research project was titled 'The Relationship between the Quality of the Water Supply and the Economic Performance of Micro-scale Enterprises and Female Entrepreneurs in semi-arid Areas: An Assessment of Gender Specific Impacts in Banaskantha district, Gujarat, India', and was carried out by the Foundation of Public Interest (FPI), Ahmedabad, the Self Employed Women's Association (SEWA), Ahmedabad, and the International Research Centre for Water and Sanitation (IRC), Delft, the Netherlands.

[2] The data for Andhra Pradesh is from the Water, Households and Rural Livelihoods (WHIRL) project, coordinated by the Natural Resources Institute, Chatham, UK and funded by the Department for International Development (DFID) of the Government of United Kingdom.

2).[3] Although two separate studies were conducted in these areas, Banaskantha and Anantapur districts have several similarities.

9.2.1 General background

Both Gujarat (Figure 1) and Andhra Pradesh (AP, Figure 2) are relatively developed states in India, according to overall indicators such as per capita income, industrial growth, investment in urban infrastructure, etc., but they also have regions that are among the most backward in the whole country and are threatened by an ever-growing water shortage. In Gujarat, droughts are estimated to occur every three years on average, and in 1999, a large part of Gujarat suffered from the worst drought in 50 years. Banaskantha is one of the poorest and hardest hit districts in this respect, with frequent droughts eroding any interim livelihood gains. Anantapur district is, similarly, one of the poorest districts in the state of AP. Five out of every ten years are drought years, generally, with two years of severe drought and one year of catastrophic drought.

In addition, both districts have:

- Semi-arid climate with low and variable rainfall (less than 600 mm a year),
- A large proportion of population dependent on agriculture and livestock rearing and, hence, nearly 75% of village households comprising the landless and small farmers (owning less than 2 ha) dependent on irregular rainfall, with the failure of monsoon rains forcing entire communities to migrate for 6 to 8 months in search of work and fodder for their livestock.
- A single crop economy, with low employment opportunities and low wages in the non-crop season, and hence regular seasonal out-migration.
- Relatively high incidence of poverty and illiteracy (especially among women), social discrimination against the lower castes, and traditional social structures where women have little say in household and community decision-making.
- Extremely under-developed social and economic infrastructure, with many villages lacking even the most basic infrastructure such as safe drinking water, electricity, and schools.

Figure 1: Banaskantha District in Gujarat, India

9.2.2 Water and poverty

Most villages in both states have multiple sources of domestic water, including hand pumps and public stand posts. But in both areas, there has been a concurrent neglect of traditional water sources such as ponds, wells and tanks (only in AP). In addition, excessive groundwater harvesting, mostly by richer farmers, has led to a rapid fall in the groundwater table in both states. Although a comparative study has not been done, the domestic water supply situation appears to be worse in Banaskantha than in Anantapur. In Banaskantha, there are multiple water sources, including public stand posts and hand pumps, but these are unreliable and so women still have to spend 3 hours a day on average to collect water (up to 6 hours a day in some villages), including walking to a neighbouring village (FPI *et al* 2000;

[3] Although a new district of Patan has been recently carved out of Banaskantha, and the two blocks where the study was carried out, Santalpur and Radhanpur, are now in Patan, the project area is referred to Banaskantha in this paper to minimise possible confusion.

5). In Anantapur, a more detailed study of user perceptions found that although water supply was inadequate in several villages in peak summer, they were able to fetch water from nearby agricultural bore wells instead (James, 2002).

During the drought of 2000, most households in Banaskantha managed to get sufficient drinking water and water for domestic use, but it had a severe impact on rural livelihoods. The direct impact was that agriculture and dairying almost came to a complete standstill after the rains failed. The indirect impact was that women and girls spent even longer to fetch water, thereby losing time that could have been spent on income generating activities (or in school), and suffering from health problems as a consequence (DMI and Verhagen 2000, 17). Anantapur is suffering under a severe drought currently, because of the failure of monsoon rains in July – October 2002. While the single crop planted in July 2002 has all but failed, the impact on water collection times and distances will only be felt in May 2003, with the summer at its peak.

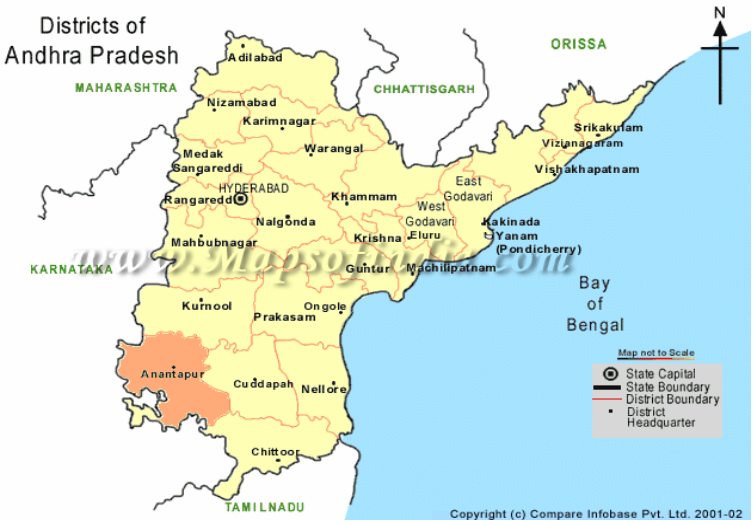
This background is probably similar to several other developing countries, especially in Africa, even though the historical, political and policy contexts may vary. The impact of improving domestic water supplies on rural livelihoods, thus, should apply more generally. However, before detailing these impacts, the methods by which the data were collected are outlined below.

9.3 Methods of Data Collection

This paper draws upon data from different projects, with which the author is involved, in order to make its arguments. This section outlines the methods used to collect data, while the next section discusses the methods of analysis as well as the results of the analysis.

The two links between improved water supply and rural enterprise were examined in the specific context of the Gujarat study, which was conducted by three organisations, the International Research Centre for Water and Sanitation (IRC), Delft, the Netherlands, the Foundation for Public Interest (FPI) and Self-Employed Women's Association (SEWA), both based in Ahmedabad, Gujarat, India. The study was funded by the Swedish International Development Agency (SIDA) and carried out in two phases: August – September 2000 (monsoon) and March – May 2001 (summer).[4]

Figure 2: Anantapur District in Andhra Pradesh, India



9.3.1 Gujarat

The study was conducted in 10 villages where SEWA, a non-governmental organisation, works with rural women, promoting rural enterprises, and in 5 control villages, where SEWA did not work. For each of the five types of rural enterprises supported by SEWA, viz., handicrafts, plantations, gum production, dairying and salt production, two villages were selected, totalling 10 'SEWA' villages. In addition, 5 other villages were selected for control purposes, using the criteria of roughly similar stages of development, to see

[4] The results of this study are more fully presented in the research report referred to earlier (IRC, FPI and SEWA, 1991), and the main findings published as James, *et al.*, 2002.

whether SEWA's interventions had made a significant difference to the economic and gender situation of village women.

Within each SEWA village, focused group discussions were held with the 10-15 member micro-enterprise groups, and semi-structured interviews were held with group leaders. More detailed discussions were held with 7 women from each enterprise group and 7 women from each control village, using participatory rural appraisal (PRA) tools.[5] Existing PRA tools were used to collect information on time/activity profiles, women's degree of control over time and income, and on typical household economic profiles, while new participatory tools, designed jointly by the research team and women from enterprise groups, were used to discuss enterprise-related issues, such as the cost of fodder, number of cows, distance to gum trees, and additional income from the sale of fodder. Some semi-structured interviews were also held with the husbands of enterprise group members and other men in the village.

9.3.2 Andhra Pradesh

The information on various rural enterprises in Kalyandurg mandal of Anantapur district in the state of Andhra Pradesh was collected during April – June 2002, as part of the research study called WHIRL, funded by the Department for International Development (DFID), Government of the United Kingdom. It was carried out in 4 villages where the non-governmental organization called Rural Development Trust has been working for the past 25 years or more. Individual enterprise owners from different villages were interviewed in order to collect information on water use and annual profits for various water-using rural enterprises.

Information on livestock was collected by the WHIRL Project from 4 villages in Kalyandurg mandal using household questionnaires in February 2002. Data on returns from livestock are averages from the sample of 83 households, which is a 10%stratified random sample drawn from the population of each of the 4 villages.

Data on returns to irrigated and rain fed farming were collected for a sample of 63 farmers randomly selected and interviewed individually by research teams from the Central Soil and Water Research and Training Institute (CSWCRTI), Bellary, Karnataka, India, during 2002, as part of the Water Resources Audit of the Andhra Pradesh Rural Livelihood Project (APRLP), funded by the DFID in India.

9.4 Potential benefits of improved water supply

9.4.1 Economic benefits of reduced collection time

When water supply service is improved, users not only save money since they do not have to buy water, and/or time, since fetching water is quicker – but the time saved can be used for other activities: either productive (economic), domestic (such as looking after children, cooking, cleaning, etc.), personal (sleeping, socialising, etc.), or development and management related (e.g. attending meetings, carrying out group work, participating in community activities, etc.).

Benefits have been calculated for the hypothetical situation where service is improved such that each woman needs to spend only one hour per day collecting water. If she has the freedom to allocate such newly created free time, and if additional economic opportunities are available, she can invest this time in productive activity, not all of which need be water-based.[6] In the present case, financial returns of such investment are calculated on the basis of returns per hour from the activities currently available in these villages, viz., plantations, salt making, handicrafts, dairying, gum collection and daily wage labour. Table 1 gives the potential income that a woman could earn in a year given a reduction in water collection time to one hour a day.

The table illustrates the following:

- **Annual returns can be high:** If collecting water for domestic uses takes only one hour a day, and if economic opportunities and skill are available, the potential income that women can earn ranges from Rs. 750 - 5,500 a year, depending on the enterprise. For all the 40,000 women working on SEWA

[5] These focus groups of 7 women each were purposely chosen (in consultation with group leaders in the case of micro-enterprise groups), giving a total of 77 women from 11 micro-enterprise groups in the 10 SEWA villages, and 35 women chosen from the control villages. All data used here are based on averages calculated from the responses of these two groups of women.

[6] Water, however, is used even in seemingly non-water-based activities, like handicrafts (chiefly traditional embroidery on cloth), where water is used to wash hands so that craftwork is not soiled.

enterprises in Banaskantha district, the total annual benefits could be as high as Rs. 3 million a year at even the lower figure of Rs. 750 per person.[7]

- **Returns vary widely, even for the same activity**: Gum collection in Parsund brings about Rs. 5,500 per person, while it brings in only around Rs. 1,100 in Patanka. The chief reason for the variation is the availability of gum trees near the village, although the time invested by each woman, the quality of the gum, and the price received, are also factors affecting annual revenue received. Nevertheless, the point that returns can vary widely is an important one, especially for replication or scaling up.
- **Income earned by women from enterprises is special**: Women interviewed in the field felt that income from enterprises (particularly handicrafts) is special since it is earned during the dry season and used during times of special hardship, when no other source of employment or income is available.

9.4.2 Economic costs of breakdowns in water supply

Inadequate, irregular or unpredictable water supply mean that users have to spend more time and effort on their water-collecting chore, as they have to locate and use an alternative more distant or inconvenient source. If these users (especially women) are engaged in productive activity, e.g., household enterprise or wage labour, they either have to spend extra time to collect water or extra money to pay someone to collect water for them. Poor water supply thus has a cost, which can be offset by improvement in domestic water supplies.

First, however, the time spent by women in the study villages is presented in Table 2. These data were collected using a participatory tool called a 24-hour clock (also termed an 'activity calendar'). Note that the summer months are from March to May, and the non-summer months include the monsoon months of June to September.

Table 1: Potential annual economic returns to enterprises from improved domestic water supply

Activity	Village	Gross return per person per year (Rs.)*
Gum collection	Parsund	5,520
Handicrafts	Madhutra	4,741
Plantation	Zandala	3,313
Handicrafts	Dhokawada	3,114
Salt making	Ranmalpura	2,573
Salt making	Madhutra	2,535
Plantation	Zanzansar	2,150
Dairying	Moti Pipli	1,250
Gum collection	Patanka	1,152
Dairying	Garamdi	750

* No costs have been deducted from the annual revenue received by each woman.

Table 2: Average time spent daily on different activities by women in study villages

Activity type	Description	Hours per day	
		Summer	Non-summer
Productive activities	Income earning (e.g., enterprise work, wage labour)	7.9	3.7
	Expenditure saving (e.g., livestock rearing, garment making, agricultural work on own land, etc.)	1.1	3.6
Domestic activities	Water collection (for domestic and productive uses)	2.8	2.8
	Other (e.g., childcare, cooking, cleaning, etc.)	2.3	4.3
Personal activities	Socialising, sleeping, etc.	7.5	8.6
Management & development activities	Organising and attending meetings, training programmes, managing enterprise activities, etc.	2.0	0.9
TOTAL[8]		23.6	23.9

[7] Note that this is an illustrative calculation, since the realisation of this income will require a scaling up of activities in the region, which may or may not be economically feasible (given demand for these products). This is also true of SEWA activities in the region, especially the buy back system practised in the case of handicrafts.

[8] The total is not 24 hours, as respondents could only guess daily figures for a period of several months.

On days when there is no water in public taps, village women either walk to distant sources or buy water for their household needs. Women who are employed (e.g., in handicraft enterprises in the village) sometimes prefer to pay someone to collect water or to buy it, in order to continue working (see Table 3).[9]

Table 3 shows that the water supply shortages over the three months of summer in 1991 cost each woman employed in enterprises in these 10 villages an average of Rs. 162 (US$0 3) or 4 days of labour at the minimum daily wage of Rs. 40, and 14 hours of time she could have spent on personal and other domestic activities.

If these estimated costs (of summer shortages alone) are extrapolated to the 40,000 women working on SEWA promoted handicrafts in the area, all of whom face breakdowns in water supply during the three summer months but some for longer periods, the loss of potential income is about Rs. 2 million (more than US$ 40,000).

9.5 Profits from productive water use

At the village-level there are several water-using activities besides domestic and agricultural activities, including brick making, pot making, dairying, rope making, individual or community gardens and plantations, salt making, running tea stalls, etc. Some use more water than others, and some bring in more profits than others (Table 4). The data from Table 4 and interviews with those engaged in these enterprises bring out the following:

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- Total annual profit varies across enterprises, as does the profit per unit of water. Brick making brings the operator a profit of Rs. 188,000 during the 4 months of the enterprise, which is around 40 paise per litre of water,[10] but tea making during the 'peak' groundnut season (December to February) yields Rs. 4,500 to the tea-stall owner, at a rate of 52 paise per litre of water used.

Table 3: Costs of water shortages in the summer of 1991 in study villages in Banaskantha, Gujarat

Village	Days without water supply	Hours spent per woman to collect water	Hours taken from		Averagepotential income lost per user (Rs.)*	Average spent to buy water per user (Rs.)	Average economic cost per user(Rs.)	Average social cost per user (hours)**
			Productive work	Other work				
Par	13	0				186	186	
Dhokawada	7	0.5	-0.5		16	5	21	
Madhutra	46	2		-2		121	121	92
Parsund	3	4.5	-4.5		73		73	
Patanka	13	2		-2				26
Zanzansar	3	2		-2				6
Zandala	13	0						
Moti Pipli	7	2.5		-2.5				17.5
Garamdi	46	3	-3		683	300	983	
Ramnalpura	46	2.5	-1	-1.5	228	4	232	
AVERAGE	20	1.9	-0.9	-1	100	61.6	161.6	14.1

* This is only for time taken from productive work for the entire period, valued at Rs. 40 per day, the minimum wage, which works out to Rs.5 per hour. ** Time taken from other activities (e.g., personal, domestic, etc.).

- Enterprises run at a loss if all inputs costs are included. If own inputs like human labour, implements, equipment, work space, storage etc. are valued at opportunity cost (i.e., the cost of hiring these in the village), nearly all enterprises would make losses. Livestock, in particular, is sustained because of 'cashless' transactions: dry fodder is taken from the owner's field, while women cut and bring green fodder. Men and women spend 2 hours a day on their animals.

[9] The situation is worst in summer, and hence a similar calculation was not done for non-summer months. The number of summer days has been taken as 92.
[10] 100 paise = 1 rupee. 1 US Dollar = Rs. 48 approx., and 1 GBP = Rs. 75 approx.

Table 4: Characteristics of some water-using rural enterprises

Activity	Unit of activity	Water used for	Number ofdays/year	Litres used/unit/day	Total litres used	Total profits[11](Rs.)	Profits/ litre(Rs)
Tea making	A single owner tea stall	Cleaning vessels and making tea	270 90	36 96	9,720 8,640	1,350 4,500	0.07 0.52
Pot making	A single potter	Mixing clay and washing the wheel	365	120	3,800	4,700	0.12
Livestock rearing	2 bullocks + 1 buffalo	Bathing animals and drinking water for animals	120 240	65 38	7,800 9,120	4,750	0.28
Brick making	A single brick maker	Mixing clay Washing moulds	100	4,800	480,000	1,88,000	0.40
Blacksmithing	A single black-smith	Wetting metal and washing tools	120 160	15 2	1,800 320	6,700	3.16
Toddy tapping	A single toddy tapper	Diluting the toddy collected	60	4	240	6,000	12.50
Rope making	A single rope maker	Soaking cut *agave* sticks to yield fibre after beating	30			30	
Washing clothes	A single washer man	Washing clothes	365				

- Most enterprise activity is seasonal, with a peak of 2 to 4 months (e.g., blacksmithing, tea making, brick making), though some other activities last the year around (e.g., washing clothes, pot making).
- Some enterprises are expenditure saving while others are income earning. Activities that bring in income either in the form of cash or kind (e.g. for some types of agricultural work) are termed income earning activities, while those that help the household avoid making such payments (for goods and/or services used by the household) are called expenditure saving activities. Rope making is a purely expenditure saving activity, while livestock rearing and vegetable growing are both expenditure saving and income earning enterprises. But different types of animals contribute in different ways. Buffaloes and cows are reared for dung and milk, though yields are generally low at around 5 l per day on average. Bullocks provide dung and draught power. They are used not only for field operations on own fields or other farmers' fields, but also to transport material to and from the field, and to the local market.
- Enterprise is supplementary activity. Villagers still consider cultivation as the basic activity, and enterprise activity is considered supplementary. This is borne out by the fact that most enterprise workers do their enterprise activities during the 'off season', and suspend their activities during the cultivation season, in order to work either on their fields or on others' fields as labour. This is the case even with those working in enterprises like salt making, gum collection and craftwork in Gujarat. Although livestock rearing continues throughout the year, there is a shift in responsibility during the cultivation season, with the woman taking on more of the manual work of looking after animals (e.g. cleaning the cowshed).
- Enteprises earn more per unit of water than irrigated agriculture: Surprisingly, the profit per unit of water for the most profitable irrigated crop in Kalyandurg (the kanakambaram flower at around Rs. 70,000 per ha), is only around 0.02 per l of water used. This is less than the profit per litre of a teashop in the off-season. The volumes of water and profits, of course, are much higher for irrigated agriculture.

These are facets of existing rural enterprises that need to be borne in mind while designing policies to promote enterprise activity in villages, especially as a means of alleviating poverty. This is the subject of the next section.

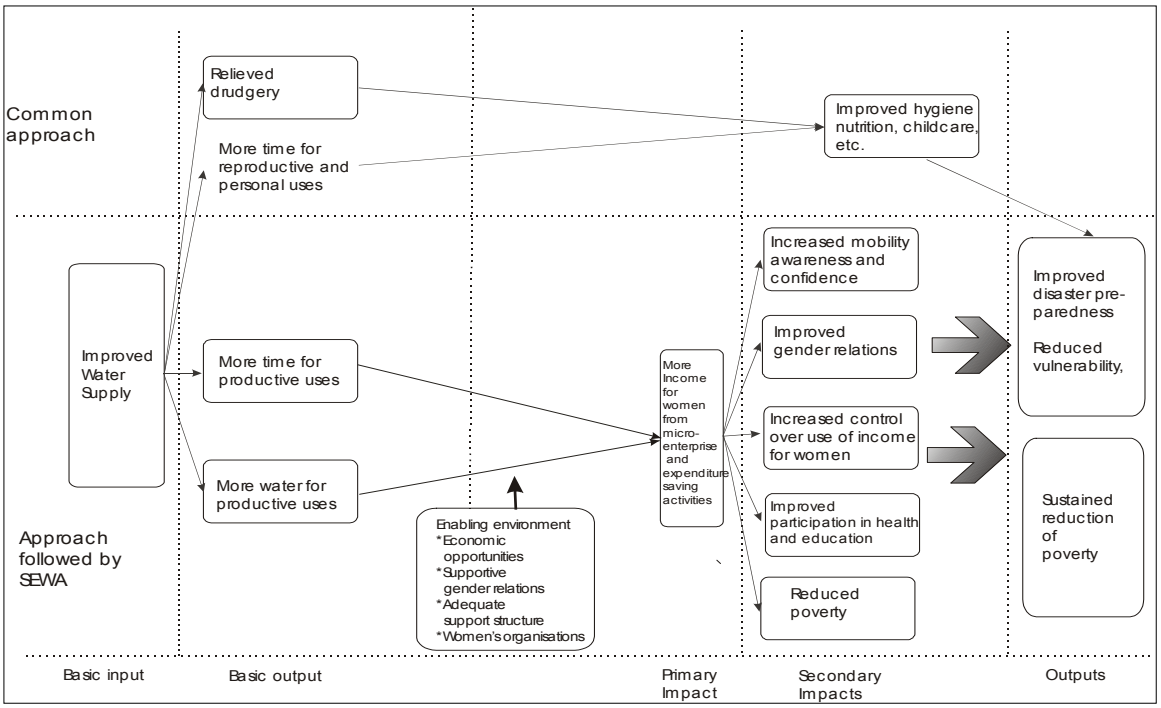
[11] Total profits = (Total Revenue – Total Cost) for the number of days the enterprise runs per year (e.g., 90 days).

9.6 Policies for water supply and rural enterprise

9.6.1 Conceptual Issues

Improved water supply can translate into more enterprise income given an enabling environment, especially economic opportunities. The SEWA model in Banaskantha district of Gujarat captures this approach (Figure 3).

Figure 3: Conceptual framework for SEWA's work linking water supply with women's enterprises



As shown in Figure 3, the common justification for improved domestic water supply in villages is that it relieves women's drudgery and improves health and hygiene. But such a perspective not only ignores the fact that health and hygiene improvements need further facilitating inputs (e.g., awareness generation, training, discussions with women, monitoring of impact, etc.) beyond improving water availability. The SEWA intervention of providing an enabling environment to women in SEWA supported villages (including enterprise opportunities, training, support services, etc.) enabled them to translate time saved into household income.

9.6.2 Sustaining rural enterprise

Facilitation is needed for water-based enterprises to make them yield sustainable incomes for the rural poor. In other words, 'productive water use' needs to look beyond mere provision of additional quantities of water, but needs to focus on providing an enabling environment, including economic opportunities, skill and quality enhancement, and effective conflict resolution mechanisms, etc. (see Table 5).

Table 5: Factors affecting sustainable enterprises

Factors affecting sustainable rural enterprise		Threats to sustainable rural enterprise	
Factor	**Significance***	**Threat**	**Significance***
Market demand	Critical	Slackening of market demand	Critical
Effective facilitation (by governmental or non-governmental organisations)	Critical	Withdrawal or lack of guidance, support and facilitation	Critical
Working capital credit /creditworthiness	Critical	Indebtedness following losses	Important
Input availability (including water)	Important	Input shortages (including water)	Important
Time to invest in the activity	Important	Demands on time (e.g., water, fuel and fodder collection)	Important
Skill to carry out the activity	Important	Accidents or illness	Important
Effective conflict resolution mechanisms: • Domestic (within the house) • Social (within the community)	Important	Domestic conflicts or lack of support from home Social conflicts	Important

* Significance is interpreted as follows: **Critical:** A factor or threat is critical if the enterprise will not run without that factor, or in the face of that threat, and individuals operating the enterprise cannot influence the factor or mitigate the threat on their own. **Important** if individuals operating the enterprise can influence the factor or mitigate the threat on their own, thus making the enterprise run, albeit with more effort and difficulty (e.g., less time spent on other activities, investment in protection against conflict, etc.). For instance, a shortage of water may be overcome by investing extra time or money. Low skill levels can be overcome by sufficient training, but this may have monetary and non-monetary costs.

9.6.3 The need for facilitation

One of the most critical factors affecting the sustainability of the enterprise is facilitation. If the enterprise is to be run by the poor, with the usual concomitants of low literacy, awareness, credit-worthiness, skill levels and health, the need for facilitation is much greater. There are two simple indicators of the extent of this need. First, if others have been doing the enterprise (e.g., raising poultry) in the village, the initial competition a new enterprise faces will usually be from the rural elite in the village itself, with their better access to credit, information, skills, health, and above all, business experience (since they as a class usually run or fund most rural enterprises). Second, if the enterprise is new to the region, it is likely (though not necessary) that the rural elite have decided *not* to invest in that activity, and usually for good reasons. Since investment is for profit, those with money to invest (e.g., the rural elite) are usually on a constant lookout for enterprise opportunities. If they do not invest in a known opportunity, then it could mean that it may not yield sustainable income.

Of course, the two other major factors why the rural elite may not invest in a particular activity are (1) the financial returns are positive, but lower than those from other investments, and (2) they are not aware of the potential of the investment. The SEWA supported investment in handicrafts in rural Gujarat is one example of the latter. But, it is possible that other rural entrepreneurs may enter this activity in future.

9.7 Conclusions

The paper re-iterated the two major links between improved water supply and rural enterprise that are often overlooked by policy makers:

- First, improvements in water supply can release time previously spent by households to collect water, which can then be used in rural enterprise to generate additional household income. Results from one of the poorest parts of the western Indian state of Gujarat, the district of Banaskantha, showed that this additional income is an important part of household income, largely because women who earn this income use it to support the household during times of distress. Although the returns per enterprise vary widely (even among villages) existing rural enterprise has the potential to generate nearly Rs. 3 million for the 40,000 SEWA women members in the district.
- Second, breakdown in regular water supply during the three summer months, in villages where women are engaged in rural enterprise, can cost each woman, on average, the equivalent of 4 days of labour at the daily minimum wage, *as well as* around 14 hours of time that could have been spent in other personal or social activities. For all the 40,000 SEWA women in Banaskantha together, this is a loss of around Rs. 2 million.

These findings open up possibilities for poverty alleviation through the improvement of domestic water supplies, and the provision of opportunities for rural enterprise. This brings in a more powerful argument for improving domestic water supply, income generation and livelihood enhancement, in addition to the earlier justifications based on reduced drudgery and improved health and hygiene.

While these are certainly powerful arguments to link domestic water supply development and rural enterprise promotion, a study of existing rural enterprises reveals a need for care while developing policy initiatives. In particular, this analysis shows that:

- Total annual profit varies across enterprises, as does the profit per unit of water.
- Enterprises run at a loss if all inputs costs are included, particularly own inputs like human labour, implements, equipment, work space, storage etc. They are profitable only because they use own inputs, which are otherwise idle (e.g. during the off season).
- Most enterprise activity is seasonal, with a peak of 2 to 4 months.
- Some enterprises are expenditure saving while others are income earning, and are viewed as such by villagers.
- Enterprise is supplementary to cultivation, which is still considered the basic activity

But perhaps the most important insight is that water is only one of many inputs to generate income from water-based productive activity. Even existing activities may not generate additional output or income if only given more water. Factors such as market demand, access to credit, efficiency of production, and economies of scale are critical considerations to transform a set of inputs into sustainable output and income. In short, the real target of facilitation is to foster entrepreneurship among the target beneficiaries. If the target is the rural poor, the facilitation is even more demanding.

In conclusion, providing rural enterprise opportunities, alongside improved water supply, is a promising way to utilise freshly released time for income generation, but it is not a 'silver bullet'. 'Making water work' requires due consideration, not just of the inputs required, but also of the larger environment for enterprise development. Given such care, it can be a way out of poverty for several thousands in developing countries all over the world.

9.8 References

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