

**INEFFICIENCY AND INSTITUTIONAL ISSUES
IN THE PROVISION OF MERIT GOODS
A Case Study of Public Water Supply in Rural Kerala**

V. Santhakumar

Centre for Development Studies
Thiruvananthapuram

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ABSTRACT

This paper discusses the issues of inefficiency in the provision of merit goods, taking the case of public water supply in rural Kerala. The analysis has identified two source of inefficiency in the provision of merit good. First, is due to the fact that the state and its agencies autonomously decide the nature and characteristics of the merit good. If the nature of good provided is not preferred by the people, or its consumption require effort on the part of citizens, these may lead to the non-consumption of the good by a large number of people. Thus, the definition of safe water as pipe water (from a centralised system) in the case of Kerala, lead to its effective non-use by a significant part of rural population. The second source of inefficiency in the provision of merit good, is in the selection of the institutional framework. The acquisition and free distribution of water by the state agency, is the prevailing institutional framework in Kerala, and this is inappropriate in efficiently solving the drinking water problem of different localities, taking their specific characteristics into account. The paper outlines a logical framework, which can be used to identify the necessary mechanism of government intervention in water supply in different localities.

JEL Classification : H40, H42, R53

Key Boards: merit good; rural water supply; institutional choice and inefficiency; new institutional economics; Kerala.

1. Introduction

There are certain goods like primary education, which the government may wish its citizens to consume irrespective of their willingness, for the overall benefit of the society. In such cases, governments take a direct role in persuading the citizens to consume the good or service of a specific quantity and quality. The aim of the public policy in the case of such goods known as merit goods is to achieve an allocation of resources which deviates from that determined by consumer sovereignty. For example, safe drinking water is sometimes taken as a merit good 'in the sense that people who receive supplies of safe water benefit from it to a greater extent than they themselves believe' (Roth, 1987:243).

The concept of merit goods in economic analysis was first introduced by Musgrave¹. There is a renewed interest in the concept of merit good in developing countries which are currently undergoing economic liberalisation, where the relevance of government intervention in several areas is under critical examination. There is not much conflict on the need for government intervention in the case of some merit goods. However, the central issue here is to identify the best possible means of

intervention, which ensure that people receive, what is intended by the government, and that too at the cheapest possible cost. This is essential due to the high opportunity cost of public resources.

This paper makes an attempt to identify the sources of inefficiency in the provision of such merit goods, through the case study of rural water supply in the south Indian state of Kerala. An attempt is also made towards the end of this paper to outline a logical procedure that may lead to the selection of the appropriate mode of government intervention in the selected case. Here the discussions on merit good are linked to the insights on institutional efficiency, provided by the recent developments in New Institutional Economics. Before analysing the case study, a hypothetical account of the sources of inefficiency in the provision of merit goods is given in the following section.

2. Sources of Inefficiency in the Provision of Merit Goods: A Hypothetical Account

There are two major sources of inefficiency in the provision of merit goods. First is due to the autonomous characterisation of the nature of merit good by the state, and second is in the choice of institutional framework for its provision. These are elaborated one after another in the following paragraphs.

2.1 Inefficiency due to the characterisation of merit good

It is the government which decides the characteristics, such as quantity and quality, of the merit good, that it wants its citizens to consume. By definition, the consumer's preference or demand pattern need not reflect in the decision of the government on such goods. Thus the government's decisions on these aspects need not always be the one that suits 'reality' or the long term interest of the society². Two distinct decisions are involved here: first is the decision to consider a particular

good as the merit one. For example, a government can decide that a particular type of moral education has to be taken by all the citizens and will be provided by the state. Public investment in the provision of this good may deprive resources for providing other things which are more beneficial to the society. The second decision is in the definition of the characteristics of the good. The decision on these characteristics is taken by either the government or its agents. These agents, if they are technical organisations have higher autonomy, due to their higher information, in defining the characteristics based on their own understanding of reality or to suit their self-interest. The agent's self-interest-based decision need not be compatible with the social interest. Or there may be a wide gap between the agent's understanding and the true model of reality. It is quite realistic to assume that governments need not always be well-informed, and its decision can be influenced by 'ideology' and/or 'incorrect models of reality', and then what the government decides as the nature of merit good, need not be really required or accepted by the people.

In dictatorial situations, this may lead to the forceful imposition of the government decision, while in democratic regimes large sections of people may refuse to accept such service provided by the government. Such rejection can take place, if people and government have different objectives. For example, a paternal decision by the government to reduce the work load on students in its own schools, may lead to an increased flow of students from government schools to others that entertain competition and hard work.

Another probable reason for the rejection of a merit good by the citizens is due to the cost of consumption. Even if a good is provided free of charge, if its consumption requires some effort/time/resources on the part of the consumers, they may use it only if it is an optimal way of

utilising these resources. This can manifest in water supply, as a preference for nearby sources and the non-use of public sources situated at distant places, even if water is provided freely by the public system.

One question that may arise here is that why should a democratically elected government offer a good, which is not acceptable by the majority of its citizens. This may be due to the fact the elections are not fought on specific policies, and the competition between political parties is to harness voter support on a vaguely defined mixture of policies. Thus even the democratically elected governments may take and persist with a particular decision, that is not accepted by the majority.

Thus the decisions on the selection, and the definition of the characteristics, can be a major source of inefficiency in the case of merit good.

2.2 Inefficiency due to the choice of institutional framework

The second source of inefficiency lies in the selection of the institutional mechanism to provide merit good. For example, the state can produce and distribute the good free of charge, and such 'direct production' is one institutional arrangement. There can be other institutional arrangements such as the provision of financial support to the citizens so that they can buy the good from the market. The selected institutional mechanism need not be the efficient one, either at the beginning, or after some years of existence³. An institutional framework can induce multiple levels of inefficiency on a short-term as well as long term basis. First of all, the cheapest way of ensuring the consumption of merit good need not be selected. For example, the direct production and distribution by the government may not be the cost effective way, but still this may be preferred (by the state). Even within this 'state production' framework, production need not be done at the cheapest

possible cost. The issue is that the production and distribution may take place in an institutional framework, where cost-minimisation need not be a real objective. Thus there can be multiple levels of inefficiencies, due to the decision of the government to select a particular institutional arrangement (out of a number of competing ones), to provide the merit good. The factors that lead to the choice of a particular institution are quite complex. By any means, we cannot assume a competitive pressure on the government to choose the best possible institution. The past experience of its own, and others, ideology, incorrect models of reality, influence of lobbying groups etc., too can shape the choice of the institution. Thus the choice of an institutional arrangement which does not aim at productive efficiency may happen quite often.

Even if the institution was efficient at one point of time, it need not be the optimal one at a different point. In spite of this inefficiency, such an institution may persist. One important reason for this persistence is the self-reinforcing feedback provided by the organisations developed within the institutional framework (North, 1990). Whatever be the reasons for the persistence of inefficient institution, it will widen the level of productive inefficiency.

The two sources of inefficiency, described above, are interrelated. For example, wrong definition of merit good characteristics can lead to the selection of an inefficient institution. Or an inefficient institutional framework can encourage an unrealistic characterisation of the merit good. Thus there are possible linkages between the definition of the nature of merit good and the institution chosen for delivering it.

Keeping this framework in mind, an attempt is made to analyse the case of rural water supply of Kerala.

3. Case Study of Rural Water Supply in Kerala

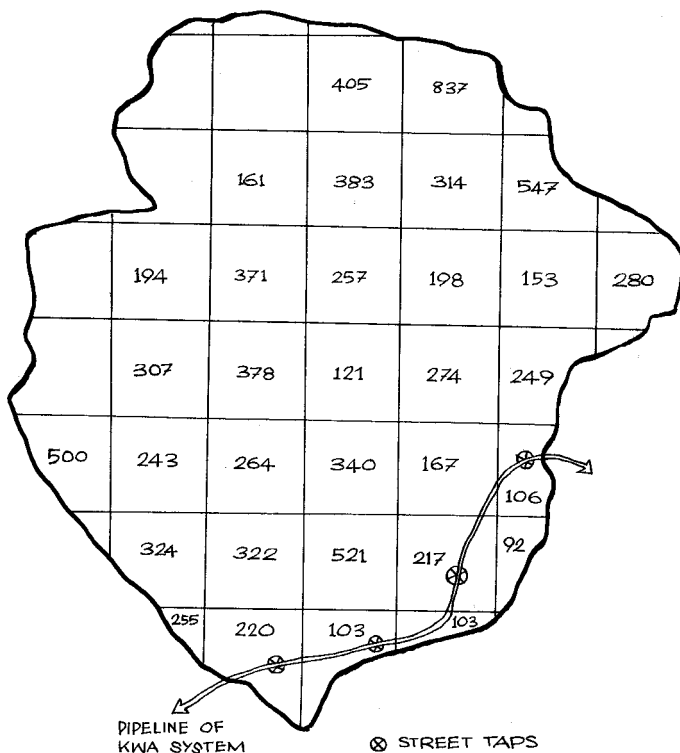
Kerala is one state where the coverage of the public water systems has been very low⁴. It was also found that even in the 'notionally' covered areas, the utilization of public water systems is very low. The estimate from population census indicate that only 19 per cent actually utilize the public systems (Pushpangadan et al., 1996). This case study analyses the reasons for the rejection or non-use of water supply provided by the government, and thus analyses the sources of inefficiency in the provision of this merit good, i.e, safe water. The analysis here is based on two surveys conducted in different parts of mid-land Kerala.

3.1 First Survey: Facing Scarcity But Not Using Public System

A reconnaissance of the drinking water problem in Kerala villages would encounter with the situation in which public water systems are left under-utilized even in areas where people face scarcity. In order to ascertain the causes of this problem, a census was done in the Nellaya panchayath (of Ottappalam taluk of Palakkad district). This survey area is inhabited by around 6500 people in about 1100 households. Each family was asked to report the 'distance they travel during summer to collect drinking water, of required quantity and quality as per their own standards'. This 'scarcity indicator' reflects criticality and indirectly takes care of the quantity and quality requirements. This indicator is averaged for the families living in a grid area (of 500 m * 500 m size). The average value of this indicator for each grid is shown in Figure 1.

It is evident from Figure 1 that there are families who travel more than 400 meters to fetch drinking water during summer. Even for these people, the street taps of the public systems are far off, as evident from the same figure itself. These taps are more than 1 to 1.5 km away for most the families⁵. For those households who currently travel 500 m during summer, the distance to the street tap is more than 1.5 km. This

Figure . 1. Average Distance in meters to Drinking Water During Summer



is mainly due to the fact that the public systems provide water through the pipes laid along (and the street taps constructed in) the major roads of the locality. Though the number of street taps are calculated on the basis on some standard notion of coverage (such as one per 250 people), these taps are provided in the main roads of the locality.

The statistical standard of one tap per 250 people, is not translating into a geographical reality of one tap within an area inhabited by 250 people. This is mainly due to the dominance of pipe-water systems in the public provision. Pipe-water in a settlement structure of Kerala

(having no clusters of houses) is either costly if geographical standard has to be met, or is unable to be closer to a large number of people if only the statistical average is achieved.

Thus most of the people in the surveyed area depend on one or other non-public source situated within a distance of 500 m. These sources are mainly perennial open wells, located in own or neighbours plots. Though there are a number of open wells in each grid, a significant part of them are seasonal ones. During summer, an average of three families use one perennial well. (The ratio of perennial wells to the number of households in each grid is given in Figure 2). The percentage

Figure . 2. Ratio of Perennial Wells to Household in Each Grid

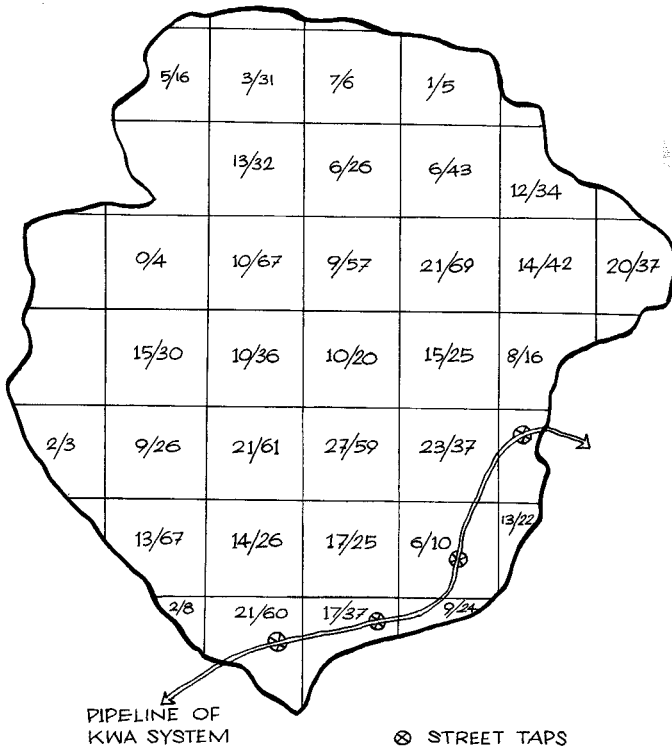
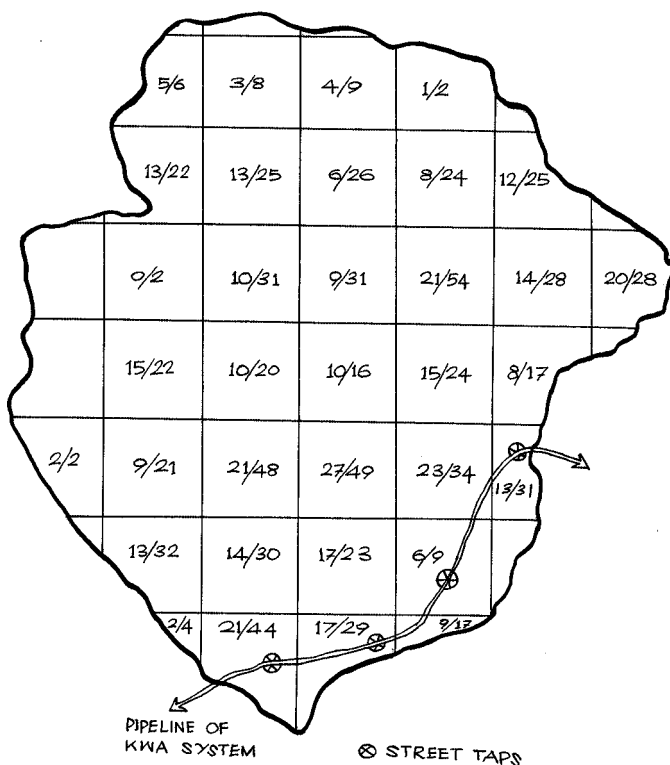


Figure. 3. Ratio of Perennial Wells To Total Number of Wells



of perennial wells among total wells varies between 30 to 70 per cent (as evident from Figure 3). The families facing scarcity depend on one or other perennial well in the nearby locality for the drinking water⁶.

The grid-wise distribution shows that the people living in areas situated away from the main roads travel more for fetching water. It was also found that a large number of people who live nearer to main roads are traditional settlers who have their own perennial wells. However the new settlers, and especially people belonging to economically weaker sections who normally settle away from roads, are the ones facing acute scarcity and are not benefited by the existence of the public sources.

In summary, the street taps do not cater to the requirements of a large number of people. These people depend on one or other private source for meeting their need even during summer. This warrants a closer analysis of the utilization of different systems of drinking water and the demand for public systems. This was the motivation behind the second survey.

3.2 Second Survey: The Sources that People Use

The second survey, conducted in three panchayaths of Thiruvananthapuram district⁷, has the objective of assessing the following parameters. (a) The sources of water that each family use during summer and non-summer periods; (b) The mode of taking water to the house; (c) The variations in source and mode of collection among various income groups; and (d) The plans of the family to upgrade the system, which is taken as an indirect reflection of their preference for a better system.

The details of surveyed area and sample size are given below.

Surveyed area:

Three adjacent panchayaths namely, Manickal, Pothenkode, and Andoorakonam, which are situated in the mid-land part of Thiruvananthapuram district.

Sample size:

Twenty five per cent of households, from two wards randomly selected from each panchayath; Total sample size is 881 households.

In the surveyed area, 88.2 per cent of the households have their own open well, while 11.2 per cent do not have one. There is a strong relation between the land-holding status and the ownership of an open well as evident from Table 1.

Table 1: Ownership of well and land holding status

Land-holding Status	Percentage of land-holders within the category having own open wells
Less than 50 cents	85.5
Between 50 and 100	92.6
Between 100 and 150	93.0
Above 150 cents	100.0

Thus most of the families have their own source of water, except those who are at the lowest level of economic status. This also indicates that most families make a major (capital) investment for acquiring drinking water. This is evident from the fact that even among the very small holders, a large number have their own water supply system. It should be noted that the capital cost involved in digging an open well in rural Kerala is higher than the capital cost required for getting a house connection in the urban areas of the State⁸.

The dependence of people who do not have their own open well, on different sources is showed in Table 2.

Table 2: The sources used by families who do not own a well

Source	Percentage of families
Neighbour's well	45.8
Public Well	41.7
Street tap	8.3
House Connection	1.2

Thus nearly 51 per cent of those who do not have an open well, use a public source (including house connection, street taps and public well). However among the public sources, public wells seem to be the most used source. This shows that decentralised sources are being utilised more than the taps provided by the centralised systems.

The utilisation pattern of different systems by the whole of surveyed households during summer is given in Table 3. Open wells, both private and public, cater to the drinking water requirements of nearly 96 per cent of the people in the surveyed area. Nearly one-third of the households who have own wells face scarcity during summer. These families, in addition to those without wells depend on other private sources for drinking water for about 3 to 4 months. Thus even during summer, 94.3 per cent households use private sources (own wells and neighbours' wells). This strengthens the conclusion of the first survey that the use of public taps is low even among those who face scarcity. The distance travelled during summer is given in Tables 4.

Table 3 : The utilisation of different sources during summer

Source	Percentage of Surveyed families using
Own open well	61.5
Neighbour's Well	32.8
Public Well	2.4
Public Tap	2.4
Other sources	0.9

Table 4 : The distance travelled during summer

Range of distance	Percentage of families
More than 500 m	1.5
300 - 400 m	0.8
200 - 300 m	3.5
100 - 200 m	9.8
50 - 100 m	11.9
Less than 50 m	72.5

Only around 1 - 2 per cent of the families have to travel more than half a kilometer. However majority (more than 90 per cent) travel less than 200 meters and nearly two-third of the families of the surveyed locality travel less than 50 meters. This shows that these people can find a source within 200 meters. Even though several open wells become dry during summer, a significant number of perennial wells exist in the nearby locality that are some what capable of meeting the requirements of all those living adjacently. It is this local availability, that discourages the people to use public sources situated more distantly. Secondly, people take the effort to have some informal mechanisms to share water locally and the transaction cost involved in this process seem to be lesser than the 'cost' required to collect water from the free public source. This is mainly due to the distance of the public source⁹.

On the plan of having an upgraded system (Table 5), those who do not have open well preferred it, except a few who are living very close to a public well or who do not have a piece of land suitable for digging a well.

Table 5: The explicit preference for a better source

Present status and percentage within the total number of surveyed households	Explicit preference and percentage of households within the same status group	Percentage of those who demanded support from state in terms of loan or subsidy for realising their intention among those expressed intention
No Well: 11.8	to have a well: 37.9 No explicit intention 62.1	33.3
No Perennial Well : 26.7	to have a perennial well 51.5 No explicit intention 48.5	23.9
No Pump : 63.8	to have a pump: 18.7 No explicit intention: 81.3	33.3

Those who do not have perennial wells express plans to deepen the existing ones or to have a new deep well. Regarding the mode of collecting water, 37.2 per cent of households having perennial wells, use (electric-driven) pumping systems. Another 18.7 per cent plans to have pump in near future either using their own resources or with the support of credit facilities. Though the rest of the households did not express any preference for pumps, this may be an indication of their lower levels of income. These observations indicate that, people prefer to have a reliable supply of water near (or within) the house. In order to have such a source, people spend (are ready to spend) a considerable amount of resource, on their own. Only one-third of the households expressed the need for any governmental support for acquiring their preferred system of drinking water. Public systems which attempt to ensure the supply of water within a particular distance (say one tap for

250 people) is not meeting the requirement of large number of people and thus these systems are left unused. This discrepancy is caused by several factors and are accounted in the following sections.

4. Institutional Mechanism Causing Inefficiency

The acquisition, treatment and free distribution by the state is the prevailing institutional arrangement for public water supply in the rural areas of Kerala. These water projects are financed by the budgetary allocations of the state and central governments and through the soft loans taken by the Government (which will be repaid by the state through budgetary allocations) and grants provided by the international development agencies¹⁰. It is the broad concern that the whole population should get safe drinking water, that has shaped the policy objective of state government in this regard, and one can call this a merit good argument. The merit good, considered here is safe drinking water, but in reality it is taken as the pipe-water. Or pipe-water is taken as the only form of safe drinking water¹¹. Safe water is not defined as water with some specific qualities, and attempts have not been made to see whether this specified water can be acquired through any other cheaper mode. Rather than doing this, pipe-water is taken to be same as safe water. This assumption is found to be shaped by the following two factors. First of all since pipe-water is the only form of safe water in cities, this is taken as the ideal form by the socio-political system. Secondly, the organisation (the earlier form of the Kerala Water Authority) which came to exist for urban water supply¹² and which gained expertise in technology suitable for this purpose, has become responsible for rural supply too, and has influenced the decision-making for rural water supply. Thus the learning pattern of this organisation which evolved in a specific institutional framework, resulted in a particular technological choice¹³, disregard of its social appropriateness. Thus connecting all households, both rural

and urban, to the central pipe-water systems, became the ultimate aim of the organization and this became the policy objective of the government, which takes pride in extending the urban mode to rural areas. The essential problem with the approach of the governmental organisation is that it did not examine whether there are any other cost-effective sources of safe water, taking certain quality standards as the criteria. Thus the well water, which was catering to the drinking water requirements of Keralites throughout history, and which continues to be the source for 92 per cent of people even in those rural localities where public drinking water systems have been implemented, is considered unsafe by the organisation, without making any serious assessment of its quality¹⁴. Once pipe-water is taken as the merit good, then the public agency is not bound to look at the economy of providing water through a variety of other means. This is the manifestation of the 'autonomy' that the public agency enjoys in deciding the characteristics of merit good.

Within the institutional framework of free provision by the state, the mechanism to transfer the information on the demand for water is the political process. More specifically the local government has to request, in a passed resolution, to the state-level organisation (namely, Kerala Water Authority) to implement a rural water scheme in their locality. Since the cost is borne by the state government and other agencies, it does not influence the request of the local government¹⁵. Thus some local governments wanted pipe-water schemes with considerations of prestige and not of actual requirement.

In response to these requests, Kerala Water Authority has implemented water supply schemes with provision for street taps and could not provide house connections from centralised pipe systems due to the exorbitant cost. A panchayath having 30000 population would be provided with a scheme of 150 street taps. However we have seen that

these taps are constructed mostly in the main roads of the panchayath, are not at all attractive to the people who have some what reliable sources (like open wells) closer to their home. Thus the public systems remain non-beneficial to a large number of people.

Thus the characterisation of safe water as pipe water, and the institutional framework of free provision in which potential beneficiaries do not have to bear, either directly or indirectly, even a part of the cost lead to a situation where this provided merit good, is left unused by the large sections of the people. This underutilisation is a major source of inefficiency, in addition to allocative and technical inefficiencies in the management of specific systems. Thus the created public systems fail to solve the problem of drinking water to the expected level.

An attempt is made in the following sections to outline the selection of an appropriate institutional framework for the provision of drinking water.

5. Towards the Choice of an Appropriate Institutional Framework

The discussion on institutional choice sometimes narrowly focus on either community or individual action as an alternative to state intervention. Keeping these three as mutually exclusive categories, and prescribing one or other of these three modes, will not be really helpful in many complex situations. Some situations warrant all the three to go together at different levels, depending on the characteristics of the problem. Moreover, it is expected from the state to have a genuine concern on the drinking water availability of its citizens, due to its positive externalities. Thus government intervention is necessary, and the only question is what form of intervention is the most appropriate. Thus an attempt is made to present a logical framework which can guide the selection of the institutional choice of government intervention in drinking water.

The rationale for government intervention in drinking water should be to ensure safe water for the whole population. However this has to be achieved through two processes. The provision of safe water (in a locality) must be made through the most economic method. Secondly, by ensuring that the economically weaker sections get adequate amount of water and their economic status does not reduce their access to safe water. The concern for economic sustainability demands that those who can afford should be encouraged to bear the cost of water. The issues of cost-effectiveness, equity and cost-sharing should be considered within the specific characteristics of each locality.

Taking these as the concerns of the government, one should try to understand the 'best ways' of providing water in a region and the 'necessary role' to be played by the Government. It is obvious that the government role need not always be the centralised production (or acquisition) and distribution of water. The public sector production and provision is normally justified with either one or more of the following reasons: the existence of natural monopolies, decreasing costs, externalities, inability to charge and merit good (Roth, 1987). The features of drinking water scene in rural Kerala like the existence of multiple sources, and the possibility of using simple purification systems which can easily be done even in small units without increasing cost, show that there is no case of natural monopoly. Though the centralised pipe-water systems in cities have the benefit of 'decreasing costs', such reduction cannot be achieved in the scattered population settlement of rural Kerala. This is due to the fact that the cost of pipe connections for individual houses is significantly high and that there exists potential for a self source closer to home. The government intervention need not be guided by the reason of 'inability to charge' since there exists no technical problems for charging the consumers of drinking water directly or indirectly.

However the presence of externalities such as the reduction of contagious diseases, and the potential for private overtapping of ground water and other externalities associated with drinking water, and the merit good argument that the consumers benefit to a greater extent than they themselves believe, definitely calls for government intervention. However the government should decide the characteristics of this merit good in a realistic manner and follow the most economical step to ensure that this good is received by all the population. Thus safe water should not be narrowly defined as the one served by centralised pipe-systems, as is done today. Instead, water with certain measurable quality standards, should be taken as the safe water. The next step is to identify the cheapest way of ensuring this good in different localities.

This economic concern should guide the public agency to decide the scale of production. If large scale production (which require intervention by either a public or collective agency) is the cheaper way to produce, than the individual or decentralized production, then it has to be resorted to. On the other hand, if individual production is cheaper, then that should be encouraged¹⁶. The cost comparison should be made for producing water of the same quality¹⁷. If individual production is cheaper, then there is no economic reason to include such households under the purview of a centralised production system.

However if certain households cannot afford to have an independent self source, in spite of the physical possibility and its cost effectiveness, then the equity concern should guide the government to provide financial support (through grants or soft loans) to such families to have their own independent system. This is the cost-effective way of helping those who require government support for drinking water.

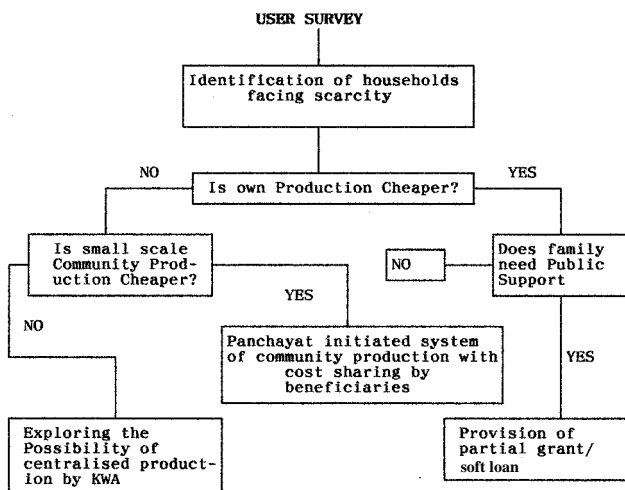
There are families who cannot have a self-source due to physical reasons (lack of suitable locations within the homestead for perennial

wells, etc.)¹⁸. If such is the case, then a single source catering to a group of households may turn out to be the least-cost method. The ‘necessary role’ of the government is to promote a number of small schemes incorporating cost-sharing by those who can afford and subsidies for those who cannot. However such intervention can be done better by the local governments¹⁹ and the intervention of a central organisation like Kerala Water Authority may not be necessary.

If there are localities where suitable sources are not available locally and where large scale production using a central source is the cost-effective method, then that should be resorted to²⁰. This is the case of urban areas and coastal belts in Kerala. The identification of large source points (like river-based systems) and a centralized network of distribution would be necessary in such cases. It is here that the intervention of a centralised technical agency like Kerala Water Authority is required²¹.

This form of identifying the role of government intervention and that of the central technical organisation may require a detailed user survey of all problem localities. Moreover, in assessing people’s preference for a particular system, care should be taken to make them aware that they have to bear the cost of the system either through direct payment or through the forgoing of other subsidised services. Similarly the survey should also identify the potential source points and the likely expenditure required for its development. Based on this information, and on the procedure suggested above, the strategies and forms of government intervention have to be decided. (This procedure is schematically represented in Figure 4.) Even for cases, requiring large and centralised networks, optimal strategies linking potential source points and delivery points should be evolved, rather than pursuing the pre-conceived ones.

Figure . 4. Identifying the role of the Government : A Suggested Procedure



6. A Comment on the Impact of Ongoing Decentralisation in Kerala

Since there are some on-going efforts to involve local bodies in the provision of drinking water, one can analyse the potential of such efforts in correcting the mistakes made by the state government. Decentralised planning may be helpful in reducing the information gaps that a centralised organisation has on the requirements of each locality. However the realisation of the potential of decentralised governance and planning depends on a number of factors. First, the sectoral allocation of funds by the national and state government according to certain pre-conceived strategies may limit the location-specific utilization of funds, even by the decentralized bodies. Secondly, the local bodies should not be forced to accept the characterisation of merit good and technological choice, done by the central technical organisation. Thirdly, if panchayaths also consider the free provision of drinking water to all population as a

virtue and tries to use funds available (nationally and internationally) for this purpose²², it has certain negative ramifications. Unless people are involved in sharing (at least a part of) the cost of this good, they do not have an incentive to demand for cost reduction and to see that resources are being utilized properly. In a situation where people have to bear the cost (albeit partially) or have to forgo other subsidised public services, people will not demand for a public drinking water scheme, if it is not really necessary in a particular locality. This would help the local bodies to utilize its resource (to provide subsidy) to localities which are really in need. Instead, if drinking water schemes are implemented only with grants (provided for that purpose), even the consultation of people²³ at the local level, may not lead to the implementation of useful schemes.

7. Summary

The characterisation safe water as pipe water, and institutional framework of free distribution by the state agency, are the root causes of the ineffectiveness of public water supply in rural Kerala. Thus the provision of this merit good, as manifested in the construction of street taps in main roads with full subsidy, does not cater to the drinking water requirements of even those people who cannot afford to make their own investments. Hence the provision of drinking water through public systems is a failure in several parts of rural Kerala, on efficiency and equity grounds.

The analysis shows that the institutional mechanism for government intervention in drinking water supply, should be based on the specific requirements of the localities. In certain cases, providing financial assistance to dig open wells may be the best strategy. In certain other cases, small systems catering to the requirements of a few families will be appropriate. The gram panchayaths are the suitable organisation

to promote such schemes and intervention of state government may not be required. However, the funds for the subsidized provision of drinking water should reach panchayath directly and not as a tied sectoral allocation for drinking water through the central technical organisation.

Even for the schemes, implemented by the panchayaths, at least a part of cost should be recovered from the beneficiaries directly²⁴. Thus the beneficiaries will have an incentive to demand (and suggest) cost-effective schemes. If panchayaths are implementing schemes mainly with grants, then there is no reason to believe that such schemes will not turn out to be as ineffective as the existing public systems.

On the theoretical side, the paper shows the importance of analysing the state's characterisation of merit good and the selected institutional mechanism to deliver it. In societies, where people are functionally capable to exercise choices on consumption, the paternalistic characterisation of any good may lead to gross inefficiency, if such characterisation is widely different from the choice of the people. This shows that even in the case of merit goods, its characterisation should be the one that takes care of the preferences of the citizens. In terms of the institution (to deliver such good), the paper shows that its selection should be guided by its long-term capability to change in tune with realities as well as the immediate effects on efficiency and effectiveness. The paper shows the importance of analysing the merit good cases, in terms of the gap between its characterised nature and people's preferences, and of the institutional choice. On the other hand, the question whether government intervention is necessary or not, is almost irrelevant in such cases.

NOTES:

1. See Musgrave and Musgrave (1973). Since then there have been a number of attempts to clarify and analyse the concept of merit good.
2. The traditional naive view of the government as one which acts for the benefit of the society has been challenged by the public choice literature. For a pioneering work in this direction, see Buchanan (1962)
3. The recent developments in New Institutional Economics, contributed mainly by Douglas North, provides valuable insights into the efficiency of institutions, and the persistence of inefficient institutions. See North (1990, 1997)
4. There are different estimates of coverage. One estimate shows that 18.6 per cent of habitations are there without a single public source (Pushpangadan et al. 1996). Full coverage (with regard to the quantity of water) is achieved only in 0.8 per cent of the habitations.
5. In another study conducted in a mid-land village of Kollam, it was found that 68 per cent of the families are more than 1 km away from the street tap (Niyathi, 1996)
6. A part of the domestic requirements is also met by the ponds.
7. These Panchayaths have hydro-geological characteristics similar to those of Nellore.
8. The capital cost involved in an urban area is less than 1000 Rupees while the cost of a well in mid-land Kerala will be around 5000-7000 Rupees.
9. The influence of travel cost is analysed by Pushpangadan et al., (1996)
10. The traditional source of finance was the state government, initially through budgetary allocation alone and later through taking soft loans (with an interest of 8.2%). From 1972-73, central government started providing grant through its nationally conceived plan for 'Accelerated Rural Water Supply Schemes'. From the eighties onwards, international agencies like World Bank, UNICEF, the development agencies of countries like Netherlands, have started providing grants for rural drinking water schemes. In the central government projects, there was a provision that the local village government (or panchayath) should take up the responsibility to mobilise 25% of the funds. However, this contribution

was not made necessary for the foreign-funded schemes. The details of the funding pattern can be seen in Government of Kerala (1990a)

11. It is true that people with higher levels of income prefer to have water in the taps within the house. Sometimes this is interpreted as a wish for getting house connection to a centralised pipewater system. In fact as evident from the survey, what people prefer as their income increases, is the reduction of distance to source. This is visible from the use of electrical pumping systems by the majority of higher income groups. This preference for the reduction of distance cannot be taken as the preference for pipe-water cum centralised source. All these point to the untenability of considering 'pipe water' as the merit good.
12. The organisation responsible in Kerala for the urban water supply was the Public Works Department. These departments of Travancore and Cochin States created and maintained water supply schemes for the urban areas of Trivandrum and Cochin. This was later on put under the responsibility of Water Works and Drainage Department in 1938. With the merging of public health and water works departments, Public Health Engineering Department came to exist in 1956.

Initially the water supply schemes were limited to the urban areas. During that period the state intervention in rural water supply was limited to the digging of open and tube wells, by the public health department. Thus, there were no major efforts to start pipe-water systems in the rural areas, until the third Five-Year Plan (1964-69), as evident from the Table 5.

	rural	urban
Third plan	82.97	259.46 (in lakhs of Rupees)
Fourth plan	450.47	2526.19
Fifth Plan	1112.67	2119.45
Sixth Plan	2923	4199

Source : Government of Kerala (1990)

The investment in rural water supply got enhanced from Fifth plan onwards with schemes sponsored by the Central Government (initially as Minimum Needs Programme and later on with Accelerated Water Supply Scheme). Thus by the end of 1980-81, 995 piped water schemes

were existing in rural areas and another 483 schemes were under construction. It is out of these schemes which tried to provide pipe-water free to rural people, a major part are left unutilized by the people in a large number of villages as evident from the surveys and other studies on coverage.

13. The learning of organisations developed in an institutional framework need not always enhance social benefits. See North (1990 : chapter 9)
14. In General, Kerala has achieved higher levels of health indicators. In this case there is not much difference between rural and urban Kerala. Thus rural Kerala, which heavily depends on well water, as evident from these surveys, cannot be taken to be suffered due to their dependence on this traditional source.
15. Though a small portion has to be contributed by the local governments, it is too low to influence the decision of the local body.
16. The scattered settlement with house in the middle of the homestead and the high probability of locating a suitable site for open well quite close to the house may make individual production cheaper compared to the large scale production in Kerala. This is mainly due to the high cost of bringing water to the house from the source point of the central system. This is noted by Hirshleifer et al. (1970:181). According to this study, 'distribution costs may be very high for a low density of consumers such as occurs in rural and suburb areas. Typical population for public water systems are 330-500 people per mile of distribution main. The prices that must be charged to cover the greater distribution costs in sparsely settled areas are such as to make individual supply from wells an attractive substitute'.
17. The traditional argument of Kerala Water Authority is that water from open wells is not potable. However, water provided by the public systems is mostly from the same type of aquifer, and the physical and chemical characteristics of water from the two systems (i.e. private and public) are comparable. Improper maintenance may lead to the biological degradation of well water which can be made comparable to public water through cheap chlorination techniques. (In fact, there are evidences that the water quality of public systems in rural areas is inferior to that of the open wells and thus people use public water mainly for non-drinking

purposes. See, Niyathi, 1996). Even if one does not question the basis of this assumption of poor quality of water from open wells, the circumstantial evidence point to the fact that even if the cost of changing the quality of well water to the level of public water, is added to the total cost of production, individual production may be cheaper than large scale production in several localities.

18. The surveys, reported here, point to the fact that in several such cases, a source can be located close to the locality. This is indicated by use of neighborhood wells and the increased use of public wells and the low use of street taps.
19. This is evident from the success of such small schemes in the Olavanna village of Kozhikode district. Being a hilly terrain, people who bought land at the hill tops, cannot have an independent open well at a reasonable cost. This made families to form groups, and collect money to make a common well and pumping system, to distribute water to individual families. The operation and maintenance of the system is also done collectively, through collecting money from individual households. There are such nineteen schemes, functional in 1997 in Olavanna village. (see, Integrated Development Report, Olavanna Panchayath, p. 44).
20. One should also consider the future situation of the demand and supply of water in deciding the appropriate system to be developed. However there may not be a drastic increase in the number of households, given the demographic transition that has already occurred (and is presently occurring) in the rural areas of Kerala.
21. Limiting its function to such areas requiring its services would also enhance this organisation's effectiveness.
22. Such an inherent assumption is there in the plans prepared by the local bodies. For example see, the plan prepared by the District Panchayath of Trivandrum in 1996.
23. There is a growing literature and number of case experiences which argues for people's participation in the provision of merit goods, such as drinking water. The effectiveness of participation depends on (a) the reduction of gap between the government's characterisation of merit good and the people's preference, (b) increase in the stakeness of direct beneficiaries in the decision-making, through cost/kind/labour

participation and (c) the incentives that encourage people to use their indigenous knowledge and to demand cost-effective solutions. For a discussion of participation in drinking water projects, see Deepa Narayanan (1995).

24. The level of private investment for acquiring drinking water in Kerala, indicates the readiness of the people to bear the cost. This shows that cost-sharing is not impossible, if the implemented schemes could cater to their real requirements. However Kerala Water Authority presently could not achieve cost-sharing in rural schemes, because their schemes do not cater to the requirements of the people.

References:

- Buchanan, J.M. and Tullock, G. (1962) *The Calculus of Consent*, Ann Arbor: University of Michigan Press.
- Hirshleifer, J., De Haven, J.C., and Milliman, J.W. (1970) *Water Supply: Economics, Technology and Policy*, The University of Chicago Press.
- Musgrave, R.A. and Musgrave, P.B. (1973) *Public Finance in Theory and Practice*, New Delhi: McGrawhill.
- Narayanan, Deepa (1995) *The Contribution of People's Participation: Evidence from 121 Rural Water Supply Projects*, Washington D.C.: World Bank.
- Niyathi, N. (1996) "Problems and Prospects of Planning of Rural Water Supply in Kerala," Paper presented at the National Conference on Rural Water Supply and Sanitation, Thiruvananthapuram, June.
- North, Douglass (1990) *Institutions, Institutional Change and Economic Performance*, Cambridge: Cambridge University Press
- North, Douglass (1997) *Prologue* in Drobak J.N. and Nye J.V.C. (eds.) 'The Frontiers of the New Institutional Economics', San Diego: Academic Press
- Pushpangadan, K. and Murugan, G. (1995) "Cost Efficiency of Water Supply in Kerala," *Productivity*, 36, 2, pp.228-235.
- Pushpangadan, K., Murugan, G. and Navaneetham, K. (1996), "Travel Time, User rate and Cost of Supply: Drinking Water in Rural Kerala," Working Paper No. 266, Trivandrum: Centre for Development Studies
- Roth, G. (1987) *The Private Provision of Public Services in Developing Countries*, New York: Oxford University Press.

Government of Kerala (1990a) *Eighth Five Year Plan 1990-95: Report of the Steering Committee on Health, Sewerage and Water Supply and Nutrition*, Thiruvananthapuram: State Planning Board

Government of Kerala (1990) *Status Paper on Sewerage and Water Supply*, Thiruvananthapuram: State Planning Board

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