Proposed Water Policy for Sri Lanka

A Critical Assessment

The water policy document "National Water Resources Policy and Institutional Arrangements" developed by the Water Resource Council and Secretariat generated much interest among many different sectors of society. Politicians, professionals, media personnel, non-governmental organizations, technocrats and others showed a very healthy interest on water policy issues. There were many workshops, public debates and wide media coverage on the critiques of the proposed water policy. Following its commitment to contribute to the national policy making process, the Sri Lankan Agricultural Economics Association (SAEA) organized a one day workshop on the proposed water policy. The main objective of the workshop was to educate its membership about the important water policy issues and to analyse the proposed water policy to make an objective and professional view about the proposed water policy for Sri Lanka. At the end of the workshop a three-member panel, consisting of two agricultural economists and a rural sociologist, was appointed to write a summary of the analysis and discussions that took place in the workshop. This paper summarizes the major outcome of the workshop. However, the paper does not confine itself to the discussions of the workshop, it includes the author's personal views on the water policy as well.

Introduction

The main objectives of the proposed water policy, as cited in the policy document, is "*water resource allocation to meet the social, economic and environmental needs of the country*" giving emphasis to effectiveness, efficiency, and equity. Effectiveness was not properly defined in the document. However, careful reading of the document indicates that effectiveness may be referring to more regulated use of water. There is no systematic use and control in the current system of water utilization in the country. The efficiency referred to in the document requires water resource allocation to be governed by economic principles so that social welfare be maximized by efficient allocation of water. As evident in the policy document, economic efficiency gains are aimed at national level by sectoral and micro level allocation of water.

Like in many other countries, water resource allocation in Sri Lanka is biased towards agriculture. The bulk of water is allocated to agriculture despite the lowest returns to water in this sector. Both domestic and industrial sectors provide higher returns to water. Unlike in the past, demand for water is growing and it may not be possible to allocate the same amount of water to agriculture while other higher returns sectors do not get adequate amount of water. Therefore, economic efficiency in allocation of water at the national level is emphasized in the policy document. In addition micro level efficient allocation of water is also targeted in the proposed policy. Overall, the proposed policy allows market forces, which are supposed to ensure economic efficiency, to play a significant role in water resource allocation in the country.

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Thus, the proposed policy has recognized market forces as a very important means in allocating water resource in Sri Lanka. Towards this end two major market based policy instruments, namely water pricing and tradable water rights (water entitlements) have been proposed. The strengths of market forces in creating the economic efficiency are widely recognized. In the meantime, inability of market forces to address the equity issue is recognized. Equity is particularly important in the case of water resource allocation as water in some of its uses (mainly domestic use), is an essential component of life. In fact many societies, all over the world, believe that it is a human right to have access to water for the basic purposes of life. The policy has acknowledged this weakness of market mechanism by including equity as the third key word.

Therefore, in essence, the water policy document plans to allow market forces to play the key role in water resource allocation while taking necessary supplementary measures to ensure the equitable distribution of water among different sectors of society. Nevertheless, a delicate balance between efficiency and equity is necessary in formulating a policy, because any intervention to ensure equity, in general, reduces efficiency. Although nominally mentioned at the beginning, the equity issue gets less priority in the document probably due to the inability to strike the balance between efficiency and equity. As I explain later, this imbalance has resulted in mounting criticism on the water policy document from various sectors of society.

One of the questions raised in the debate on water policy is whether there is a need for a water resource policy for Sri Lanka. Some critiques took an extreme position that we don't need a water policy and the current efforts

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Author gratefully acknowledges the valuable comments and editorial suggestions provided by Dr. Nimal Sanderatne, Senior Visiting Fellow, Postgraduate Institute of Agriculture and Prof. Tuder Silva, Head, Department of Sociology, University of Peradeniya.

towards this end is entirely due to the influence of the donor community. When this issue was discussed in the workshop, however, the majority of the members overwhelmingly felt the need for a water policy.

Following are some of the reasons for the acceptance of the need for a water policy. Adequate evidence are available to show emerging water shortages. Although there is no physical scarcity of water, its unequal geographical distribution and the increasingly poor water quality due to agricultural, domestic and industrial use are recognized as the reasons for increasing water scarcity. Watershed degradation and its relation to water scarcity is another factor that aggravates this situation. Signs of depletion of ground water have been recorded from certain parts of the country. Indiscriminate drilling of tube wells and agro-wells without proper assessment of groundwater availability have been identified as the major reasons for ground water shortage. Although not very serious at present, signs of an emerging inter-sectoral competition for water is also evident. Therefore, better management of water resource and a national policy towards this end is necessary, in my view.

The more important issue is as to whether the proposed policy meets the needs arising from the emerging water scarcity? The answer to this question was difficult as there were many shortcomings in the water policy document. Furthermore, the policy formulation process has so many deficiencies which contributed to the rejection of the proposed policy by many sections of society. My objective is to discuss these issues in some detail in the paper.

The Proposed Water Policy

Before I go into details of the perceived shortcomings of the water policy and the process it went through, it must be necessary to describe the major elements of the proposed water policy. The following section describes the major proposals of the document in an abstract form.

Property right of water: As mentioned earlier, it is intended to allow market forces to allocate water resources in the country. Market allocation of resources and resultant Pareto efficiency can be achieved only when a resource is an economic commodity. Any resource is not a commodity. In order for a resource to become a commodity it should fulfil three major requirements: it should be scarce, there should be ownership, and it should provide utility. Water provides utility and it is scarce. However, it does not possess ownership. So, in order to make water a commodity, property rights of water need to be established. This is the basic idea behind the proposal to give entitlements to water. The policy document states that the ultimate right of water is with the state while entitlements are given to water users allowing the trade of water among them.

Sectoral allocation of water: As mentioned earlier, water resource allocation in Sri Lanka was agriculture biased. Given that Sri Lanka is an agricultural country and that the majority of the population is engaged in agriculture and that there is a lack of greater demand for water from domestic and industrial sector, this initial allocation seems to be reasonable. However, the situation is gradually changing. Agricultural population is gradually declining and the expanding industrial sector demands more water. There are instances, although isolated and few, in which foreign direct investments were not established in the country due to a lack of water. There are conflicts sometimes between water allocation between irrigation and hydropower. Moreover, incomes of people are increasing, although not consistently and steadily. Consequently, demand for pipe water in the domestic sector is also increasing. Given these trends, can we stick to the former agriculturally biased allocation of water? The policy document addresses this issue and suggests some reallocation using the returns to water in each sector. Following the initial statement on the equity, the document also states that small users and the environment should get a special treatment although the market is given the authority to allocate water among the sectors.

Water pricing: Domestic and industrial water pricing is currently in place. No major changes have been proposed on water pricing in these sectors. The policy document proposes a water pricing mechanism for irrigation water under the name of cost sharing. Having considered the current economic situation of the farmers, however, the policy suggests that the water price will be paid by the government until farmers become economically better off so that they can pay the "cost sharing" of the water.

Ground water issues: Regulation and monitoring of ground water are the major activities proposed by the policy document. Rationale for these activities is to make sure that ground water extraction levels do not exceed the replenishment.

Education and awareness: Education and awareness have been recognized as tools to achieve better water management and water conservation.

Institutional arrangement: The water policy document details out the needs of institutions in order to implement the proposed water policy. Three major government agencies have been proposed. National Water Resources Authority (NWRA), which is responsible for preparation of national water resource policy, long-term river basin management planning, coordinating and conducting water resource research, water resource allocation through issuing entitlements, etc. The Water Resource Council (WRC) would be an advisory body that briefs the Minister on water issues, including the inter-provincial water issues and allocations. The third institute, Water Resource Tribunal (WRT) would be an independent appeal tribunal, which will resolve conflicting issues regarding the water entitlements.

Public Reactions and Critiques

The Cabinet of Ministers, approved the water policy document on March 28, 2001. Soon after that there were some media reports about it and after a while there were lots of public pro-

tests against it. Some of the critiques were very reasonable and constructive while others were not. This section outlines the critiques and assesses the reasonableness of the critiques. Before we go into the public reactions one should realize the criticism levelled against it is not only on the content of the policy document. Some of the criticisms are on the policy formulation process. As I emphasize later, the content and the process are both very important for a successful national policy.

Donor driven: One of the criticisms levelled against the water policy document is that it is donor driven. As the critiques argue, language of the policy document, prominent role given to markets and ignorance on local conditions and historical aspects indicate that this policy document has been developed to conform to requirements of the World Bank and other international agencies. The World Bank, to which many critiques referred to was not directly involved in the preparation of this policy. As we mentioned earlier there is a clear need for a comprehensive public policy in this area. However, because of the way the policy was presented to the public many suspected that there is some sort of international conspiracy to exploit water resources in Sri Lanka. In my view the policy document exhibits some donor driven elements. However, the acceptance of this argument by the public is mostly due to the process rather than the contents of the policy document.

Top-down approach: Formulation of the policy document followed the conventional top down approach despite repeated emphasis on the need to adopt participatory policy formulation. Apparently preparation of this document took about 08 years after the failure of an initial attempt of a similar document. However, the public had minimum awareness about the preparation of such a document. Few non-governmental organizations have been informed. Other than that no public hearing took place. Especially, the farming community, which was going to be affected by the proposed policy, was not adequately consulted according to some of the media reports. The polarization of top and bottom was visible in the debate itself. Many who were responsible for the preparation of the document were not able to explain it in the local languages, which are the only languages understood by the majority who opposed it. On the other hand, many who opposed to it were not able to read and understand it, because it was available only in English, until the media reported about non-availability of Sinhala translations.

Lack of transparency: In addition to the top-down approach, an important issue was the lack of transparency in the policy formulation process. For example, as mentioned earlier Sinhalese translations of the policy document were made available only after some severe criticism in the media. There was inadequate time and a proper forum to discuss the policy before it went to the Cabinet. Many of the foreign and local consultants who prepared the document were not available to defend it. The burden of defending it was borne by few who knew only certain aspects of the policy. The water policy document was interdisciplinary in nature and only a group with necessary backgrounds could have successfully defended it. For example, there wasn't a single economist to explain or defend the document despite the fact that the policy document has lots of economics in it. Some of the statements made by the responsible officers and the politicians clearly contradicted the statements in the policy document arousing the suspicious feeling among the public. This may have happened due to carelessness. However, such shortcomings provide fuel for the anti-development critiques and some environmentalist who oppose to anything.

Lack of historical/cultural perspective: One of the very reasonable critiques on the policy document is complete exclusion of the historical and cultural perspective. Sri Lanka is known as one of the countries with a very early hydraulic civilization. In fact, many scholars, all over the world, quote the successful community management of water resources in ancient Sri Lanka. Yet, the policy document does not mention anything about our own history on successful water resource management. The donor driven and top down arguments were reinforced by this clear lack of consideration on historical and cultural aspects. One should however realize that direct application of the traditional community management systems in modern society may not be possible. Re-establishment of community management systems borrowing some elements from the experiences of the ancient system to suit the current needs may be much more challenging than some tend to think. In fact, this is one of the major research topics in the world today, not only for water but also for forestry, fisheries, grasslands etc. I am not very sure whether we have generated readily applicable knowledge on community management of water in Sri Lanka, given the complexities in the modern society. Nevertheless, one should recognize that policies are prepared for implementation. Implementation requires public acceptance and cooperation. At least from this narrow point of view the policy document should have had a section on our cultural and historical heritage on the community based water resource management. Such an inclusion would have increased the marketability of the policy document. Apparently, the marketability and acceptance by the public has been seriously ignored in the preparation of the policy document.

Environmental issues: As mentioned at the beginning, it is said at the outset that the water resources will be managed to meet the economic, social and environmental needs of the country. One of the major criticisms of the environmentalists is that despite the document stating at the beginning that environmental issues related to water resource use could be considered, these are ignored in the main body of the document. This criticism has some merit as adequate elaborations are not available as to what type of environmental water users are allowed or promoted by the proposed water policy document. Another important area, not adequately addressed in the policy document is watershed

management. One could argue that watershed management is a larger issue and that it is beyond the scope of the water resource policy. Yet, some attention should have been paid to the overlapping areas of water resource management and watershed management. Necessary resolution for the overlapping areas should have been identified. Similarly, water pollution issue has been ignored after identifying it as one of the reasons that justify a new water resource policy. In fairness to the policy formulators, it should be stated that the Central Environmental Authority of Sri Lanka handles the water quality issues in the country. Yet, there will be conflicting issues when the new institutions on water resources are established. Recognition of such issue and some means of resolution would have resulted in a greater degree of acceptability to the document. These omissions lead to the feeling among many that the policy document emphasized only the economic efficiency while superficially touching the other important issues such as the environment and equity.

Commodification of water: A major argument of the many who opposed the water policy document is that water is a basic need and it should not be commodified by allowing the market to allocate it. In my view, this argument has some merit, if it were placed in the right perspective. Allocation of water considering it as a market commodity depends on its use. Unlike other resources water is a peculiar resource because its usage defines many things. Treating water as a special resource, in my view, is correct, in fact necessary in the case of domestic use of water for essential basic purposes.

However, the major confusion arises when the whole spectrum of use of water is given this special treatment. When water is used for commercial agriculture, water and fertilizer become just conventional inputs in the production process. Similarly when water is being used for industrial purposes, it is just an input in the production process. The important question is whether we should give the same special treatment to water when it is being used for commercial agricultural and industrial purposes? The answer is no. When water is used for commercial and agricultural purposes it is like any other resource and there is nothing wrong in treating it as another commodity.

Having said that I re-iterate that water should not be treated as a commodity, as much as possible, when it comes to domestic use for basic purposes such as cooking, bathing, washing etc. Yet, more discretion is needed here. Assume a household uses high quality purified water for gardening and washing cars. Should we treat this as essential for the basic life? Answer may be no. In essence, one should apply the essential basic resource argument of water only for the basic needs. Mixing up of this argument for all the uses of water, as many critiques have done, only resulted in a confusion among the general public rather than helping to develop a sound water resource policy.

Involvement of Multinational Corporations (MNCs): Another argument that made the public very suspicious about the water policy document is that water entitlements will eventually lead to a situation when all the entitlements will end up in the hands of MNCs. Although not based on facts, and hence not of much relevance to the debate of the water policy, this argument could have been anticipated by the policy preparation body. Whenever the market mechanism is given prominence in a policy proposal, anti-market segment of the society reacts negatively. Anti market segments always argue that the market system allows MNCs to exploit the general public of the country. The two major parties that have been governing the country have accepted the open economy as a major policy and foreign direct investment is one of the accepted means for economic growth in Sri Lanka. Given that foreign companies are envisaged as a positive element in overall development. Any major policy document developed outside the basic market economic principles will not fall within the accepted policy framework of the country. Therefore, right approach may be not to oppose the market band policy rather to utilize the strength of market while putting a strong effort to minimize the adverse impacts of market economic system.

Given that water is a very sensitive and highly politicised commodity and certain of its uses are fundamental to survival, the policy making body could have been more careful in preparation of the policy document. For example most of the criticism were centred on MNCs acquiring all the water entitlements and adverse impacts of such an event. This confusion could have been easily avoided had the policy document made it clear that after bulk allocation is done entitlements are issued within the sectors and trade is limited to only water users in a particular sector. For example, Mahaweli system B farmers may exchange their entitlements only among themselves under such a well-defined system of water rights. This type of limited trade may also bring considerable efficiency in water allocation. Had the policy document been clear on these aspects the public may have not opposed to it so vehemently.

Inadequate safety nets: One of the common criticisms on the water policy is that there aren't adequate safety nets to protect the poor and disadvantaged groups. Although, equity is one of the three key words in the objective of the proposed water policy, adequate description of the safety nets are lacking in the main body. The critiques, however, mixed up the issues here. As I explained earlier, safety nets are necessary only in certain uses of water such as domestic use. Generally, agricultural water use is an area where there are lots of inefficiencies. However, the current economic situation of the farming community is not very conducive for market-oriented water resource allocation policy. Farmers get low returns from most of the crops they grow. An additional burden on them in terms of water management cost sharing at this stage seem politically not feasible. The policy document recognizes it and states that government will pay farm-

ers until economic situation becomes better. However, given the lack of transparency and top-down approach followed, the public suspect that this is only an evasive tactic and that after a season or so they will have to pay the water management fee. Even if the government has a genuine interest to pay the fee weakness of the policy formulation process has created suspicious feeling resulting in the protest by the public.

The public resentment and anger due to lack of adequate safety nets is partly due to lack of information. In the domestic sector, where such measures are needed for example, water is priced using a step function (increasing block pricing system). In this system, if a household uses a minimum quantity of water that household should pay a very low rate of Rs. 1.00 per unit (1000 litres). If a household exceed 50,000 litres it has to pay Rs. 45.00 per unit. So long as water use is low unit price is low. Actually, this system provides a subsidy to the households by charging more from large water users and less from small water users. Moreover, religious institutes and schools get water at very low costs. Industrial water is priced at a high rate and the profits are partly siphoned to subsidize households. When a water connection is given only about 50% of the true cost is charged. Thus, there are lots of safety mechanisms in the domestic sector for which such measures are necessary. Public awareness on these measures should have been a part of the policy formulation process.

I should note here the safety nets in the domestic sector would need further improvements. For example, most of these subsidies are received only by middle class and upper middle class people of the country who have access to pipe borne water. These facilities should be extended to the poor households too. Also the Water Board should keep an eye on its ever-increasing cost per unit of purified water because transferring the cost increases to water consumers, eventually make these subsidies useless.

In writing a conclusive note on the critiques of the proposed water policy, it is important to note that many critiques showed their anti-market sentiment. It seems that these critiques have forgotten one important factor, that is, the alternative for the market allocation of resources. Water resource allocation has to be done by the market, government or by the community. Strengths and shortcomings of market allocation are fairly well known. Those who criticize market process either ignore alternative allocative mechanism or they implicitly assume the status quo (government allocation) is better. Market failures justify government interventions in the economy. However, there is no guarantee that government would necessarily correct the market failures and that its intervention would lead to a better allocation of resources. Therefore, market failures are only necessary, but not sufficient conditions for government intervention in resource allocation. Community management of water may be feasible, in some sectors. Especially, micro level water resource allocation may be successfully handled by the local communities. Yet, to implement such schemes successfully we need much more serious thinking, research and information as to how we could integrate community management in the current economic, social and institutional environment.

Those who are against markets seem either ignorant of market mechanisms or they do not know that governments also fail miserably in their attempt to allocate resources. In the Sri Lankan context, among many examples, entrance to (popular) public schools, and issuing timber permits, provide clear evidence of failure of government to allocate resources in the economy. In the case of schools, there are few popular public schools in cities and many parents want to send their kids to these schools. To limit the entrance to a manageable level there is a rule requiring candidate parents to reside within a three mile range of the school. The high demand for entrance has eventually lead to a very corrupt system where parents prepare forged water bills, electricity bills and deeds and bribe principals to get a placement for their children. Eventually, the good quality popular schools are limited to rich and influential parents' kids. So the government has failed to provide equal opportunities in education. The second case, timber permits are meant to avoid illegal logging from natural forests. However, as explained by Senaviratne and Gunatilake (2001) the heavy regulation has created cartels of timber traders and government officers who deal with timber permits. Eventually, timber producers get a very low price, consumers pay excessively inflated price and timber traders and government officers appropriate most of the rent from timber. The heavy regulations have not helped forest conservation either. With the help of the government officers, the timber traders manage to send the illegally logged timber from natural forest to the market as if they were from private lands.

There are many such examples of government failures in Sri Lanka. Lack of understanding of non-market failures, is perhaps, the reason for strong anti-market sentiment of many critiques. Understanding that governments all over the world, also fail due to common reasons may enable the analysts to place government and market in the proper perspective. One should understand that both government and markets fail on certain aspects and then weight government (or non market) failures against the market failures when deciding on resource allocation. Moreover, understanding that market allocation, government allocation and community management as the available options and selecting the proper combinations of the three allocative mechanisms for different aspects of water resource management may be the correct approach to look forward in amending the current policy document.

I have so far outlined the major criticisms levelled against the proposed water policy. As is clear from the above description some of the critiques are reasonable, while others are not. None of the critiques, however, has looked at the policy from a com-

prehensive framework of policy analysis. Taking a stand on a policy document without following a comprehensive and in-depth analysis may not be constructive. There are various factors that should be considered in analysing a policy. For example, Hanley et al., (1997) describes eight criteria in evaluation an environmental or natural resource allocation policy. They include four major criteria namely, effectiveness, efficiency, equity and flexibility to achieve the stated objectives. In addition to these basic criteria, the policy analyst should give some consideration to the practical conditions such as information base and administrative capacity, legal structure of the country, existence of competitive markets and political feasibility. It is necessary to have such a broad framework to systematically analyse a policy in order to judge whether it is suitable.

In the next section I analyse two major building blocks of the proposed policy systematically to show how these two major measures may not work in the Sri Lankan setting.

Economics of Water Pricing

As I mentioned earlier applications of economic principles to allocate water is acceptable except for use of water for basic needs. Water is being priced in Sri Lanka in the domestic and industrial sectors. Water pricing therefore refers to irrigation sector in the policy document. In order to gain the full economic efficiency equilibrium water price should be equal to its marginal cost. The marginal cost of water comprises three major elements, namely marginal production cost (MPC), marginal user cost (MUC) and marginal environmental cost (MEC).

Price = MPC + MUC + MEC

The MPC include all the costs of appropriation, purification, conveyance and metering in the provision of water. The MEC is the cost to the environment due to a particular use of water. For example, if the water use in agriculture pollutes it with pesticides and fertilizer, the pollution damage cost is the MEC. Of the three categories, MUC is the difficult one to comprehend. This cost occurs only if the rate of water use is greater than the rate of replenishment. Under this circumstance water becomes a depletable resource. The basic idea here is to charge an extra price so that the rate of water use will be diminished and time taken to deplete the water source be delayed. As mentioned earlier, full efficiency of water use requires charging all three types of marginal costs. However, what is being proposed is to charge only a portion of the MPC just to recover the cost of maintenance of irrigation systems.

The proposed pricing system has certain merits as it would lead to water conservation as farmers may realize the scarcity value of water and use it more effectively. Moreover, it would enhance the financial sustainability of irrigation systems maintenance. As observed in many developing countries, continuous maintenance of irrigation system by the government has resulted in the deterioration of the systems. When governments face serious budget constraints, irrigation maintenance funds are among the funds, which get axed easily. Government maintenance of these systems eventually leads to low level equilibrium traps. In order to avoid such developments, farmers themselves form regional or local organizations, or local government organizations are formed to collect maintenance fees and this money is channelled back for the maintenance of the irrigation systems.

Farmers may have some resentment to pay such fees. However, the reality is such that government always tax people to generate its revenue and this tax money is used for various purposes including irrigation management. Given the current tax system in Sri Lanka, direct income tax collection is not very well organized and most of the tax revenue is generated from indirect taxes. Poor people also pay indirect taxes when they purchase food items, kerosene oil etc. Therefore, in a way, also farmers themselves currently pay at least part of the money necessary for irrigation system management. However, it is not visible. The proposed system makes it more transparent, and targeted. Therefore, charging a irrigation management fee seems not at all that bad as portrayed in the media. Of course, if the water pricing is implemented in the proposed manner some tax reform measures are necessary to relieve farmers from indirect taxes. Otherwise they will be taxed twice.

Despite all the positive things about irrigation system maintenance charge, it is very difficult to implement such a scheme at present. Given the current economic situation farmers are in a desperate situation. Gradual removal of government patronage in agriculture under open market policy have made their situation worse. The agriculture sector has to undergo a major transformation and until such a transformation takes place any type of proposal to collect a water management fee will be ineffective. Also given the current economic situation no politician would accept a water pricing system. So it is politically not feasible. Thus, effectiveness of the proposed water pricing policy will be very low. As explained earlier some sort of partial efficiency can only be achieved with the proposed water pricing system.

The equity issue with the current mechanism of water management is complicated. Since farmers are poor their receiving some subsidy may not offend many. If the tax money is collected from upper middle and rich classes this transfer will be fine. If instead, some dry zone farmers and other poor people also contribute to the provision of free water to farmers in the irrigation system, it may not be very equitable.

More over, financing mechanism is a serious consideration here. If the water management fee is sent to the treasury, it is not very different form the existing system. There should be regional bodies, either government or farmer organizations that receive these revenues. The cost of administering should be very low so that most of the collected money from the farmers is put back for the management of the system. These aspects were not

given adequate consideration in the policy document. If such a system is developed with the participation of the farmers they may not object to it. In fact a pilot study may demonstrate the success of such a scheme to farmers. The policy document only recognizes the current difficulty of the farmers and it proposes that the government pay it initially. If one day a self financing irrigation management system is to be developed in the country, it has to evolve with the participation of the farmers.

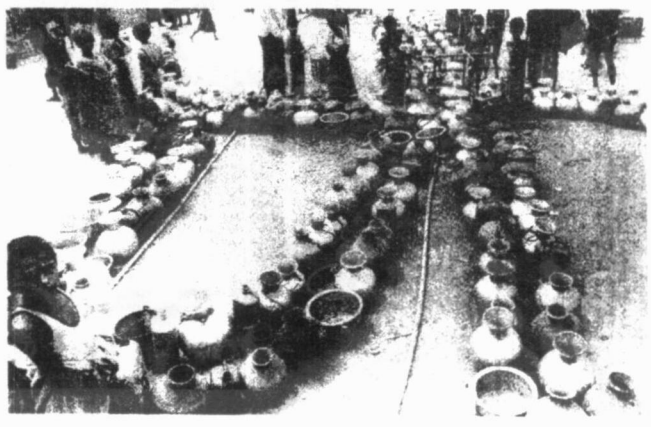
Transferable Water Rights (TWR)

Transferable water rights were referred to as water entitlements in the water policy document. However, I feel this terminology is better. The basic idea of TWR is to provide legal right of the water to the water users so that they can trade it. It is not very clear in the policy document whether this system is implemented only in the irrigation system or whether it is applied to other water users. Here I assume that it is implemented only in the irrigation system. As proposed, farmers will get a legal document stating that they are entitled for a specified quantity of water for a given period of time. Once a farmer gets this document the water management agency is obliged to provide that amount of water to the farmer. Farmer however, can either use this quantity (or part of it) for cultivation whatever the crop he wants or he can sell it to another farmer. The objective is to create a market for the water so that it will be allocated to areas in which highest returns to water will be obtained. This text book version of transferable water rights, if it works the way it is supposed to, it will bring economic efficiency. There will be an appropriate price for water and water will go into the highest returns areas for production. Moreover, given the current system of no rights to water, some farmers, especially tale enders of irrigation water chanells will be benefited a lot by obtaining the entitlements.

The important question is, however, whether this system would work as described above in our irrigation systems? We will go into some details here to answer this question. First let us take the issue of efficiency and effectiveness. Given the current overall low returns in agriculture, returns to water is also very low. Most of the farmers are small holders and they operate about 1-2 ha of land. Compared to a Californian farmer (which may be in the mind of the foreign consultant when he proposed this) who operates 2000 ac, the holding size in Sri Lanka may be a major constraint in water trading. Even if the returns to water is $ 1/ac, a Californian farmer has incentive to find a buyer for his water (if he decided to sell the water) since substantial amount of money is involved. Now a system B farmer in the Mahaweli whose water value may be few hundred rupees will not have the same incentive for trading water. Even if he wants to sell its transaction cost of finding a buyer and administering it through the Mahaweli Authority (or what ever the agency) will be very high. Given that our farmers do not have modern communication facilities such as using e-mails and internet, the cost of information will also be high. It is highly likely that transaction cost of water trade exceeds the gains from trade.

Moreover, once entitlements are given there should be mechanisms to enforce them. The water agency should make sure that every farmer gets only the allocated amount of water. In order to ensure this some metering system has to be installed. Given that there are large numbers of smallholders the cost of all the efficiency gains may not be adequate to cover the cost of meters. As explained above there will only be a thin market for water given current prices so that it will take years to recover the cost of metering. Therefore, possible efficiency gains would be much lower, may be even less than the costs. Effectiveness of the system requires another bureaucracy and its maintenance can be very costly. Also, the officers in this agency should be given some power, it could lead to inefficiency as well as corruption. So both efficiency and effectiveness seem difficult to achieve with tradable water rights in Sri Lanka, given the current structure of farming.

Let us now discuss the equity issue. In a tradable permit system, equity depends heavily on how the permits are initially distributed. There are various ways to distribute water rights. They can be given to the current users with equal amount (grand fathering), they can be auctioned or they can be given to current users based on the land extent they cultivate. If the third method is used small farmers get less water and large land holders get more water. Auctioning will provide the highest efficiency as entitlement themselves will have an initial price. However, auctioning will completely ignore the equity issue and all the entitlements may end up in the hands of few companies or rich farmers. Therefore it is very important that the policy document outlines the method of initial distribution of the entitlements. The policy document has failed to do so and that aroused lots of concern on the equitable distribution of water resources. Another important issue with respect to equity is the bulk allocation of water. As mentioned earlier, economically efficient bulk allocation would definitely take away some amount of water from the agriculture sector. How would the reduced amount of water be shared among the farmers is



a very important equity issue that has not been addressed at all.

Experience of many countries that use tradable permits for pollution control and few countries that use tradable water rights indicated that they work well in places where markets are functioning well. Although no concrete evidence is available, it can be said with some confidence that markets are not that well functioning in Sri Lanka. The debate on the water policy itself indicates a significant mistrust about the markets across Sri Lankan society. Similar signs were evident on debates on various natural resource issues such as forestry sector master plan Eppawela phosphate issue. Therefore, implementation of a very sophisticated market mechanism in a country like Sri Lanka seem too ambitious with respect to the assumption of well functioning markets. Moreover, the policy document has not paid attention to the legal structure of the land ownership in irrigation systems. Currently farmers have some partial rights as they are not able to sell the land. Given this situation can the entitlements be issued? Is the entitlement tied to the land or is it tied to the person is another important detail which has been omitted. Furthermore, there was a very serious vagueness about water entitlements. It was not clear in which sectors (agriculture, industry, domestic) the entitlements are issued. This led to a huge confusion and some went to the extreme interpretations that people need to have entitlement to use their own well water. The policy document mentions that small user will be exempt from the requirement of entitlements. However, small user is a very vague term, which should have been properly defined in order to avoid unnecessary confusions.

In summary, the proposed tradable water right system may achieve neither efficiency nor effective in allocation of water. Adequate thought was not given to guarantee equity. Information and administrative capacity has to be built to implement it and the cost of monitoring together with the transaction cost of trade may exceed the gain from water trading. Some legal reform on land ownership should accompany the tradable water right system and that has not been envisaged in the policy document. Competitive markets required for the success of the proposed scheme may not exist in the country and therefore the proposed tradable water right system may not work well in Sri Lanka.

Lessons Learned

I first outlined the major proposals of the water policy for Sri Lanka in this paper. Then I summarized the major criticisms and assessed the critiques from an objective perspective. Finally I analysed two major economic instruments proposed in the policy document; water pricing and tradable water rights. Well-designed water pricing in irrigation system to maintain the valuable irrigation structures seems to be an acceptable policy in principle. Yet, it is not implementable given the current overwhelming economic burdens borne by the farming community. The tradable water right system, although appealing in its text book version, is not likely to deliver the economic efficiency it is designed for. No adequate thought appears to have given to ensure equitable distribution of returns from water resource allocation either. Therefore the two major pillars on which the policy document is being built is falling apart. However, this document would have served as a basis for a social debate that would eventually lead to an economically efficient, environmentally sound and socially acceptable water policy for Sri Lanka.

The content of the policy is important. Yet it is the policy process that eventually decides acceptance or rejection of a policy. This is perhaps, more important. In fairness I should state that preparing a water policy for a country is not an easy task, because it eventually results in gainers and losers. The bold efforts taken to use economic instruments are, in a way, commendable. However, adaptability of these concepts to local conditions should have been given more emphasis.

The most important lesson one can learn from this water policy discussion is the importance of participatory policy formulation. In recent history a similar water policy document was developed and it was thrown away due to public protests. In this second time if adequate attention was paid to the importance of public participation in the various stages of preparation of the policy document and some transparency is maintained this policy document would have been of some use to society. The Sri Lanka Forestry Sector Master Plan provides a good example in this context. When the first plan was introduced a vehement protest came from various sectors of the society. Fortunately, some important lessons were learnt from the first exercise and when the revisions were made to the plan lots of effort were taken to incorporate the concerns expressed by the critiques and to get to the public participation from the beginning of the exercise. Finally, when the second master plan was introduced it did not experience similar protests. Certain sections of the plan have already being implemented and many cite it as a success story of national policy formation.

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