



## NGOs AND THEIR ROLE IN INVOLVEMENT OF WOMEN IN CONSERVATION OF LAKES IN MYSORE CITY, KARNATAKA

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### ABSTRACT

Women can play a crucial role in environmental management and protect natural resources such as lakes. For some 30 years, international and UN global conferences have repeatedly recognized that effective sustainable water resource management depends on engaging women at all levels of decision-making and implementation; but in developing countries, access of women to scientific and technological education, training and career is limited. The fact that, women are not technically literate is particularly relevant with regard to water supply and sanitation. The Agenda 21 pointed out education and training programmes for women should be launched with regard to the protection of water resources. Studies in the world about local women showed that women who participated in many water projects, their awareness and sensitivity increases to environment and environmental challenges, and their attitudes, ability, empowerment of concern for the environment quality changed. Also, it makes them responsible to take action and acquire skills to identify and help resolve environmental problems. Education is a learning process that happened automatically during their participation on water projects.

Mysore is the second biggest city in the State of Karnataka, India and has several lakes. Non Governmental Organizations (NGOs) are making efforts for the conservation of these lakes by encouraging participation of local women. However, the efforts are not at the desired level. This paper makes an attempt to understand the role of NGOs in conservation of lakes in Mysore and especially the role of women in these efforts. The paper addresses the following questions:

1. What is the role of NGOs in conservation of lakes in Mysore?
2. How women are involved in the conservation?
3. Whether the NGOs have sufficient expertise in addressing environmental issues related to conservation of lakes?

It is a study based on the information collected from NGOs located in Mysore city. Preliminary findings indicate that majority of the NGOs need training in technical and environmental aspects related to the lakes environment and methodologies for the involvement of local women. The paper concludes with suggestions to NGOs for successful involvement of women in conservation of lakes.

### INTRODUCTION

Water is indispensable for human health and well-being. The United Nations General Assembly, in December 2003, proclaimed the years 2005 to 2015 as the International Decade for Action 'Water for Life'. A decade of action The primary goal of the 'Water for Life' decade is to promote efforts to fulfil international commitments made on water and water related issues by 2015 (U.N. 2005).

Lakes are the most important storage system of water, and in the past conservation of lakes was emphasized only on technical details with less attention given to local people's participation. But today, experiences showed changing values in empowerment of local people, especially women. Women have often played a leadership role in promoting environmental ethics and are sensitive for freshwater resources. United Nations in 2001 emphasized that a sustainable development that does not involve women will not succeed in the long run.

Conservation of lakes and watershed sustainability depend on local women's participation. Non Governmental Organizations (NGOs) mobilize local's participation right from conception to implementation of projects and encourage them through support from either national government or some international agency. There are some NGOs in Mysore city who work on environmental issues and empower women in order to attain sustainable development. While some of the NGOs are involved in conservation of lakes, some are contributing to environmental sustainability and water conservation through watershed development programmes. In this paper an attempt has been made to document the efforts of NGOs in conservation of lakes and the involvement of women in order to understand the opportunities and constraints for involvement of women.

### OBJECTIVES AND METHODOLOGY

Important objective of this paper is to document the efforts of the NGOs working on the issues related to the conservation of lakes in Mysore city and analyse the opportunities and constraints in involvement of NGOs in conservation of lakes. The paper addresses the following questions:

1. What is the role of NGOs in conservation of lakes in Mysore?
2. How women are involved in the conservation?
3. Whether the NGOs have sufficient expertise in addressing the environmental issues?

**Increasing role of NGOs:** Under the changing national and international scenario, the role played by NGOs also changes. The realization that stakeholders are to be involved in project planning, monitoring and evaluation has led to a greater involvement of NGOs in major social sector projects programmes supported by both national and international allocation/support.

**Collaborative role with the Government:** Though NGOs have been existing in India much before the independence, Government's recognition and decision to involve them in its efforts towards development started with the 7<sup>th</sup> five year plan (1985-90). The NGOs were asked to supplement the Government's micro level poverty alleviation and basic needs programmes. A separate subsection on "Involvement of Voluntary Agencies" was included in the 7<sup>th</sup> Plan document under the chapter on Rural Development and Poverty Alleviation Programs, and Rs. 100-150 crores of plan expenditure was earmarked for use in active collaboration with NGOs (Planning Commission 1985). To assist and channel the funds for this new involvement of NGOs, the Council for Advancement of People's Action and Rural Technology (CAPART) was established in 1986. This is the beginning of the official collaboration between the Government and the NGOs. By 1990s the winds of globalization, liberalization and privatization started blowing. It brought a paradigm shift in the development strategy. Under the new market-led and export oriented growth strategy the role envisaged for NGOs also underwent a change. Government is looking up for NGOs to provide "delivery services" i.e., implement local development programmes rather than supplement Government programmes in their areas of operation (Planning Commission 1994).

**NGO sector in Mysore district:** Being a princely state, Mysore district has been in the forefront in terms of voluntary work. Community based charitable institutions have been engaged in providing education by establishing institutions, giving scholarships, providing hostel facilities and encouraging young talent. Apart from this there are literary and cultural associations for the promotion of traditional culture, arts, local form of entertainment (folk arts), etc. These organizations were supplementing efforts of the Government, working independently only with contributions from members. Apart from this there are religious institutions promoting education and providing health services.

NGOs in Mysore district can be categorized into the following groups.

1. Religious institutions of both Hindu and Christian origin.
2. Social institutions like Rotary, Lions Club, etc.
3. Corporate sector based institutions involved in social service.
4. Informal local groups of professionals.
5. Development oriented professional NGOs working at grassroots level in some villages or working on a specific issue (thematic NGOs)

There are nearly 70 organizations working/registered in Mysore district. While majority of them have their administrative offices in Mysore, some are located in the respective taluks. Detailed discussions with the chief functionaries of these organizations and information collected through questionnaire revealed that, while some of the NGOs are operating in various taluks within Mysore district, some have their project offices in northern Karnataka. Information collected from 25 of the 70 NGOs is presented in the following section.

**Areas of intervention:** Based on the issues addressed, NGO interventions in Mysore district are classified into the following groups.

1. Consumer interests and civil liberties.
2. Environment and sustainable development.
3. Rural empowerment/development.
4. Services to the physically challenged.
5. Services to the socially challenged.
6. Tribal welfare and their rights.

As far as the issues addressed in Mysore district are concerned, there appears to be a fair distribution. The NGOs in Mysore district are able to intervene into the issues of different nature. The issues addressed are certainly outside the purview of the Government machinery because social gains are larger than economic gains in these areas e.g., the organizations engaged in tribal development, be it in the area of motivating them and empowering them (FEDINA Vikasa, DEED, Nisarga Foundation and VGKK) or in the form of providing health services (Swami Vivekananda Health Movement). Similarly, the services rendered by the organizations, which came up to ease the life of the individuals and family members who are physically and mentally challenged. Institutions like JSS Polytechnic for Physically Handicapped, Rangarao Memorial School for Disabled, Swasahaya Samuchaya are providing opportunities for the disabled. Services to the socially challenging issues like counselling to HIV/AIDS patients, sex workers, jail inmates, socially challenged children, etc. are provided by NGOs like Ashakiran, Divya Deepa Charitable Trust, Enedsa, Odanadi Seva Samsthe, etc.

**Women and water:** Women's water-related tasks at home are numerous. When water sources are far from their homes, unclean, or in short supplies, women are the first to suffer from the resulting fatigue and disease that inevitably affect both themselves and their families. When children or other family members are sick on account of waterborne or water related diseases, which are preventable and widely eradicated from the developed countries during the past century, women must care for those who are ill, thus, having less time to care for themselves, to support their children's schooling, to work in the field and do other activities (Rodda 1991). Women are most often the collectors, users and managers of water in households as well as the farmers of irrigated crops. For example, at least half of the world food is grown by women farmers and it amounts to 80% in some African countries (FAO 2000). Women play a major role in domestic water management in areas where safe water and

drainage are not available in the house. In these settings, women are typically responsible for collecting, storing and using water, and for disposing of wastewater (Poark 1984). At the International Conference on Freshwater in Bonn in 2001, the policy statement emphasized the need for a gendered approach involving both men and women, while also suggesting that in order to achieve this, women's role in water-related issues needed strengthening (GTZ.GmbH 2001). International initiatives, such as the International Drinking Water Supply and Sanitation Decade and the United Nations Conference on Environment and Development (UNCED), have been instrumental in promoting the role of women in the protection of natural resources as well as in water management (Verhasselt 1998). There are many reports of projects in which women appear to be participating fully and reaping the benefits of increased water supplies. Where this is happening women are learning new technical and managerial skills, being increasingly involved in decision-making at the household and community levels and turning water-related projects into income generating or development opportunities that benefit themselves and their families (Cleaver & Kessler 2003). During the last decade, great claims have been made for both the theory and the practice of women's increased participation in the management of domestic water resources. This is said to have contributed both to increasing project efficiency and effectiveness as well as to empowering women .

**Lakes of Mysore:** Mysore lies 135 kms from the state capital, Bangalore and has a population of over seven lakhs. Many years ago, Mysore had more than 30 lakes but today only five lakes are surviving. In addition to this there were two small lakes one of them, Bogadi lake, dried two years ago and other one, Hebbal lake, is highly polluted.

Three lakes (Karanji, Kukkarahalli, Lingambudi) of Mysore (Fig. 1) in the list of important wetlands of the State have been classified under Important Bird Area Network (IBAN) as priority site for conservation by Birdlife International of U.K. spread over 100 countries. Birdlife International has included Kukkarahalli, Karanji and Lingambudhi lakes in Mysore in the list of 38 important conservation sites in the State. There are nearly a dozen sites within a few kilometres from Mysore, which harbour varied species of birds and have been declared priority conservation area sites (Kumar 2005).

**Karanji lake:** This Lake is located at bottom of the Chamundi hills and is close to the centre of the city. This lake is spread over 90 acres and is home for more than 90 species of resident and migratory birds. The lake also has India's largest walk-through aviary. Karanji lake area has the Regional Museum of Natural History, construction and provision of wetlands, bird watch tower, boating jetty, bird enclosure (aviary), diversion of sewage, revetments and de-silting, etc.

**Kukkarahalli lake:** This lake is in the middle of Manasagangothri, the University of Mysore campus. This beautiful and placid lake is visited by a variety of migratory birds during winter. It attracts a lot of bird watchers, who come to observe and enjoy birds. The lake provides boating facilities. Kukkarahalli lake package comprised of widening and strengthening of existing bunds, construction of new bunds, diversion of sewage, landscaping, bund lighting, etc.

**Lingambudhi lake:** This lake is in Srirampur and is about 8 km from the centre of the city. This picturesque lake also attracts numerous types of migratory birds. The lake has been a source of sustenance of people for past 150 years in the area of agriculture, fisheries and other household activities.

Karanji and Kukkarahalli lakes have been taken up for improvement and rehabilitation works. Remaining three lakes were dropped due to ownership and future maintenance issues. Karanji lake

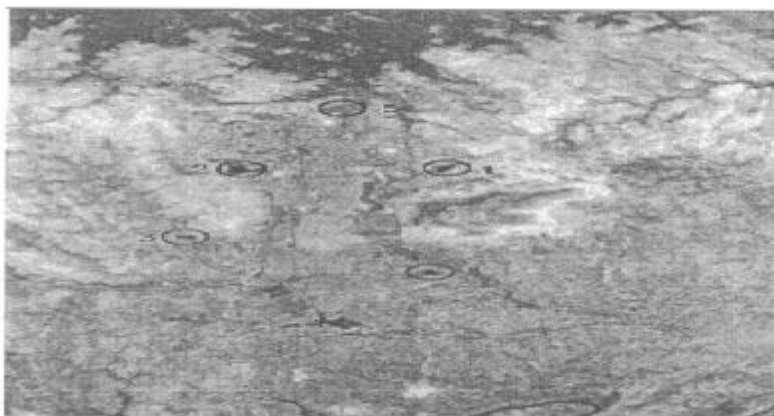


Fig. 1: Indian Remote Sensing (IRS) satellite imagery of Mysore showing the location of five lakes, which are to be restored.

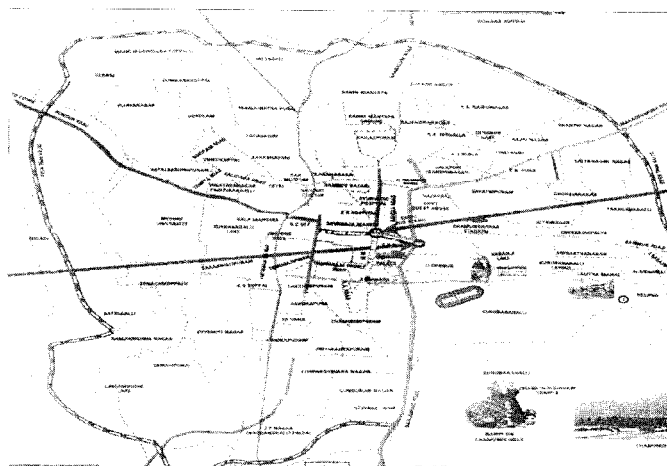


Fig. 2: Map of Mysore city showing location five lakes.

belong to Mysore Zoo Authority, while University of Mysore owns the Kukkrhalli lake.

**Water supply in Mysore city:** Population of Mysore city till 1860 depended on the small tanks and wells for its water supply. Construction of Karanji tank and subsequently Kukkrhalli tank in 1864 by Dewan Poornaiah under the aegis of the then Maharaja of Mysore Sri Chamarajendra Wodeyar, augmented the water supply to Mysore. Iron mains were laid to supply water from Kukkrhalli tank. After 1910 with the introduction of electrification, pumped water supply from cauvery was ensured. However, the lake continued to provide traditional livelihood to the surrounding villages like Kukkrhalli and some areas (Ravikumar et al. 2000). Today there are over 1300 borewells with hand pumps and 580 borewells with power pumps in the urban region alone. Even though ground water is an important and dependable source in Mysore, there is no specific rain water harvesting strategies deployed in domestic, industrial and service sectors. Reuse and recycling are yet to become routine despite national guidelines. Studies of Department of Mines and Geology reveal a

depletion of groundwater to about 36 m in industrial and 18 m in residential areas in the past two decades (Chandrashekara Mutt 2000). Lakes restoration along with aquifer recharge are most crucial in improving the groundwater in Mysore. Over 7.3 percent of the total 190 MLD (2001) urban water use is from groundwater. Aquifer recharge facilities are, thus, a necessity (Jagannatha-et al. 2002).

The availability of water was 140 MLD and has been augmented by 50 MLD from the Cauvery river by pumping from Melapura through an 11-km long pressure line. However, there has been no planning for upgrading the distribution system within the city. Even though this was pointed out during a meeting organized by Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) in April 1998, the work proceeded. The benefit of water supply augmentation did not reach many areas of the city that had to continue to depend on low quality groundwater until the year 2003. As of February 2006, there have been areas in the city which have not received water from Cauvery river (ADB 2006).

## RESULTS

**Conservation of lakes in Mysore:** In 1992, sixty nine suggestions for the Mysore environment protection were given by thirty seven professionals of the city under the patronage of Mysore Heritage Trust to Mysore Urban Development Authority (MUDA). The situation would not have been so bad if the administrators had taken those suggestions seriously while planning for the protection of lakes and tanks. There are many individuals, community based and voluntary groups who have been active in lakes conservation since a decade now in Mysore. These groups are basically wildlife activists, environmental education activists and popular science groups. During the year 1999-2000 civic and environmental groups were active in protecting Lingambudhi lake from a ring road passing over it (Jagannatha et al. 2002). Mysore witnessed yet another public hearing. This time it was on the Lingambudhi lake and outer ring road (ORR) on January 12, 2000 (MET 2001).

The large Lingambudhi lake is part of the natural recharge and storage system of groundwater that affects the water supply of the city. The ORR planned for execution by MUDA with a loan from the ADB was initially aligned such that it has been bifurcated the lake. All requests from civil society to MUDA to realign the ORR to save the lake have met with delaying tactics. When ADB officials visited Mysore repeatedly, they did not check the environmental viability of the ORR. They were unaware of the problem until a member of Mysore Grahakara Parishat (MGP) went after ADB's representative in India in Bangalore and forced him to hear the facts about MUDA's violation of environmental norms. As a result, but not without a struggle involving many citizens, the alignment of ORR was changed in May 2000 and the lake was saved. But two things happened: one, the work on ORR was delayed with escalation of cost; and two, MUDA blamed civil society for the delay and cost overruns (ADB 2006). An EIA was got prepared under the ADB project to safeguard Lingambudhi lake from a ring road (Jagannatha-et al. 2002).

Dhvanyaloka, Mysore Environment Trust (MET) and various social service organizations as well as Department of Forest with the support of local organizations have constituted a Citizen Monitoring Committee for protection of Lingambudhi lake. Citizen agenda for lakes in the district has been drafted (MET 2001).

The year 1916 saw the birth of the University of Mysore on the banks of Kukkarahalli lake. Since then, the lake has inspired many thinkers, poets, writers and nature lovers. It has evolved as an excellent habitat nurturing interesting biodiversity. In late 1960s, the lake came under the direct

custody of University of Mysore (Ravikumar et al. 2000). Due to indiscriminate addition of sewage and the effluents, the lake was severely polluted. Boating on the lake was like floating on pure sewage. The lake stinked during 2001-2002 and had become a victim of toxic blooms.

In the recent past, People Science Forum (PSF) ([www.psf.4t.com](http://www.psf.4t.com)), a unit of Karnataka Rajya Vigyana Parishat, has emerged as one very unique group with pro-active initiatives. For over two years now adjacent to Kukkarahalli lake 1000 houses have been visited by the PSF volunteers on a weekly basis propagating the need for segregation of domestic waste and emphasizing the need of abuse free plastic use. PSF, Dhvanya Loka and Mysore Environment Trust® with the help of villagers and civic groups and individuals have been able to actively facilitate the voluntary efforts in the cleaning of the lake and environs.

Since September 2001, People Science Forum, Mysore Environment Trust® and Dhvanya Loka have sponsored Kukkarahalli lake environs preservation activities with villagers and citizens by conducting cultural, literary and creative programmes. A field survey report/action proposal based on a field survey status of feeder canal (Diwan Purnayya canal) to Kukkarahalli lake for about 1200 metre from the lake water body was taken up by the volunteers and members of PSF during September, 2002. Over 19 specific problems have been identified in the PSF field survey. Base flow channel in the feeder canal for a length of 6000 m has been now considered under the restoration plan. Meanwhile MGP, a local consumer action group, has obtained a court order restraining the University activities which are ecologically compatible with regard to Kukkarahalli lake (Ravikumar et al. 2000). A Workshop on conservation and management of Kukkarahalli lake in June 2000 and an Action plan for it and its environs in December 2000 was planned by MET® and Dhvanyaloka in partnership with University of Mysore (MET 2001).

In a workshop during January 2001 on vision and agenda for the conservation and management of lakes at Mysore, participation of administration, people representatives, experts, NGOs and Community Based Organizations (CBOs) took place. In this workshop many case studies on the lakes covering many issues ranging from public participation, application of remote sensing, ground water harnessing, and economical utilization such as fisheries and so on were focused (Jagannatha-2002).

The International Lake Environment Committee, United Nations Environment Programme (UNEP) Japan was keen to support the movement of preservation of lakes and tanks in Mysore region through Kyoto University of Japan with University of Mysore and The Mysore Environment Trust® (MET 2001).

**NGOS involved in conservation of lakes in Mysore city:** The following NGOs were actively involved in citizen initiatives to save Kukkarahalli lake. Various social service organizations as well as departments of forest with the support of local organizations have constituted a Citizen Monitoring Committee for protection of Lingambudhi lake.

**Mysore Grahakara Parishat (MGP):** It is an environmental organization working from 1989 in Mysore city, and actively involved in citizen initiatives to save Lingambudhi lake with assistance of Centre for Appropriate Rural Technology (CATR) and Mysore Amateur Naturalists (MAN).

**Mysore Environment Trust (MET):** It is a voluntary initiative for effective public participation in sustainable development of Mysore region based on Agenda-21 guidelines.

**People Science Forum (PSF):** It is a registered unit of Karnataka Rajya Vigyana Parishat (KRVP).

**Dhvanya loka Mysore Environment Foundation (DMEF):** It is actively involved in citizen initiatives to save Kukkarahalli lake.

## DISCUSSION

Self-Help Groups (SHGs) and Women's Self-Help Groups (WSHGs) are informal groups which are formed around a felt need and are used for collective action. An SHG, both in concept and in practice, is a group of individuals who come together voluntarily for a common cause. They have an effective strategy for poverty alleviation, human development and social empowerment. Most common SHGs are constituted of members known to each other, belonging to the same village or hamlet and community. In India SHGs were first introduced during the mid 1980s in Karnataka by Mysore Resettlement and Development Agency (MYRADA), an NGO, to get over the problem caused by an inadequate rural banking system. The Watershed Guidelines issued by the Government of India in 1994 encourage the greater participation of women and marginal groups. The management of SHGs in a sustainable manner is a challenging task. It is interesting to note that SHGs with exclusive female members are more sustainable than those of male members. In fact, more than 80 per cent SHGs in India are of women members. Further, SHGs promoted by NGOs are being recognized by financial institutions and Govt. of India as powerful vehicles for empowerment of women through participation and employment generation (Pughazhendhi & Jayaraman 1999). These groups were later used for planning and maintaining structures in microwatersheds. In Mysore city some NGOs involved Women's SHG in many water projects. It is so effective for improvement women's participation in conservation of lakes in future.

## OPPORTUNITIES

- Presence of several NGOs with which many professionals are involved is one important opportunity in Mysore city for people to take up lake conservation activities. NGOs like Mysore Resettlement and Development Agency (MYRADA), Sumana (Sanskrit word meaning goodwill), Rural Literacy and Health Programme (RLHP), Organization for Development of People (ODP), etc. have been working for rural development enabling the community to become self managed and they are also working for women's empowerment. Some of them are involved in the formation of women's self help group (SHGs) for the implementation of watershed, water supply and other water projects. Also Mysore Grahakara Parishat (MGP) played an important role in the conservation of Lingabudhi lake by preventing the formation of outer ring road passing through the lake. MGP participated in the public hearing and could successfully influence the decisions of the government.
- There are some women's organizations which work in environmental issue and and women's institution, which interest for social programme in Mysore city.
- Majority of the local NGOs have knowledge about environment and especially water related issues. For example, one of the NGOs called Mysore Environment Trust (MET), is a voluntary initiative for effective public participation in sustainable development of Mysore region based on Agenda-21 guidelines. As in Agenda-21, the key strategic principles for holistic and integrated environmentally sound management of water resources in the rural context may be set forth as objectives and one of them is "local communities must participate in all phases of water management, ensuring the full involvement of women in view of their crucial role in the practical day-to-day supply, management and use of water". MET also is active in conservation of lakes in Mysore city; it could provide good opportunities for involving women in conservation of lakes in Mysore city.



- Kukkarahalli lake belongs to the University of Mysore and many thinkers, scientists and nature lovers are involved in its conservation. Some of the active members are women.
- Mysore city has been selected as one of the heritage cities under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) with an intention to develop and maintain the city. Mysore City Corporation selected a technical consultant for preparation of a detailed project report for development of projects as per the JNNURM guidelines. Conservation of lakes in Mysore is one of the important issues addressed by the JNNURM. Ward committees are mandatory for the implementation of the JNNURM under which Mysore city got huge amount of money for development and infrastructural works. Infrastructure Development Corporation of Karnataka is working on a project to revive lakes in and around Mysore city under JNNURM. As the ward committees comprise of local communities it gives good opportunity for the NGOs working with local people and especially women to encourage their participation in the decisions relating to the conservation of lakes. Women's SHGs can be effectively involved in this effort.
- International institutions such as the World Wide Fund (WWF), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), Asian Development Bank (ADB), World Bank, International Lake Environment Committee (ILEC), Global Environment Fund (GEF), and many other agencies are involved in providing technical and financial assistance to the Ministry of Environment and Forests (MOEF) and the State Organizations. This also provided many opportunities for NGOs in Mysore, preparing various water projects involving women.

### **CONSTRAINTS**

- There is always conflict among the interests and approaches of NGOs and government, and Mysore city is no exception. There is no healthy collaboration among government and NGOs.
- Only a few NGOs have proper understanding of environment and the approaches to involve women in the conservation of lakes. Even in the case of professional NGOs like MGP very few women are involved. In the case of some NGOs, who are implementing watershed programmes, there is some participation of women.
- There is no communication among NGOs who work for conservation of lakes. Each NGO work in their own way without knowing what the others are doing.
- Awareness and knowledge of some of NGO members in Mysore city about Participatory Rural Appraisal (PRA) method is not high as to involve locals, women and stakeholders in many programme such as awareness creation among stakeholders about values of the lake and it is essential to conserve them through training sensitization and mobilization.
- NGOs and also local people in Mysore do not have awareness and knowledge about the role judiciary can play in conservation (Supreme Court and High Courts) through Public Interest Litigations (PILs) seeking directives of court.

### **CONCLUSION**

Experiences in conservation of lakes, especially Lingambudhi lake in Mysore, have showed that some of the NGOs with major mobilization of hundreds of citizens against MUDA's inaction to get

the outer ring road (ORR) realigned to save Lingambudhi lake, and also many activities for the other lakes can make a difference in the conservation of lakes. MGP was successful and the alignment of ORR was changed in May 2000, which shows the strength of an organization in creating community awareness and influence the behaviour of local people towards sustaining the lake ecosystem. Although, there were many effects for conservation of lakes in Mysore, but problems can manifest themselves very slowly and any effect evident after the degradation has been very severe. Creation of awareness among local people, especially women about environmental effects of lakes for their sustainability, requires training and capacity building in order to design sustainable and sensitization programmes to maintain the lakes. Some of the NGOs in Mysore such as MYRADA, SUMMANA, RLHP, ODP, etc. are working with women's self help groups, for empowerment of women in social, economical and political aspects. Although social, economical, political empowerment is important to attain sustainable development, it is not sufficient because environmental sustainability through proper environmental management is essential. But what is observed is that except those NGOs who are implementing watershed development programmes, none of the NGOs could involve women in the conservation, though many NGOs are working with women groups. There is a good opportunity in India for women's participation in environmental management, especially water resource management and watershed projects through SHGs. NGOs tried for involvement of WSHGs in environmental issues, especially water resource management through watershed projects. Experiments of MYRADA in watershed projects show that whenever women are involved in projects, they influenced their family members so that their family participates in projects and gets benefited. It is more important to involve women groups as they are sensitive and can play an important role. Involvement of women's self help groups and local women will make very significant contribution in raising awareness. Experiences around the world show that changing values and empowerment of local women over time contribute to the increase in efforts to conserve lakes.

## **SUGGESTIONS**

1. The establishment of network for NGOs where information generated through research and monitoring actions can be collected and distributed by different media.
2. Collaboration among the government departments and NGOs is essential for people's participation in development activities. The challenge of reaching out large number of poor people in resource poor regions has forced governments to involve NGOs, who are, hopefully, better suited for the task of mobilizing people's participation (Arya 1999) specially Women's Self Help Groups.
3. Awareness creation among stakeholders about value of the lake and essential women's participation to conserve them through training, sensitization and mobilization using Participatory Rural Appraisal (PRA) methods.
4. Communication, Education and Public Awareness (CEPA) is one of the major techniques available to Lake Basin Managers. Any effort that depends upon a change in behaviours or compliance with new legislation relies on CEPA if the change is to occur. It has been suggested that the greatest and most depressing problem in conservation is not habitat loss or overexploitation but the human indifference to such problems. The five common objectives of communication, education and public awareness programme are: (1) to encourage a general interest in conservation, (2) to generate greater awareness of conservation issues, (3) to bring about a specific change in opinion, (4) to disseminate specific Balmford information and (5) to build capacity (Sutherland 2000).

5. Sensitization of local women to involve in programme about the values of lakes by PRA and CEPA method.
6. Communication of NGOs with International Institutions which cover all aspects of lakes in the name of wetlands, and Ministry of Environment and Forests (MOEF) which works in aspects of wetland (including lakes) through community participation. It can help to formulate a comprehensive management plan and involvement of women.
7. Institutional arrangement for involvement of women in conservation of lakes and its impact in Mysore city are shown in Fig. 3.

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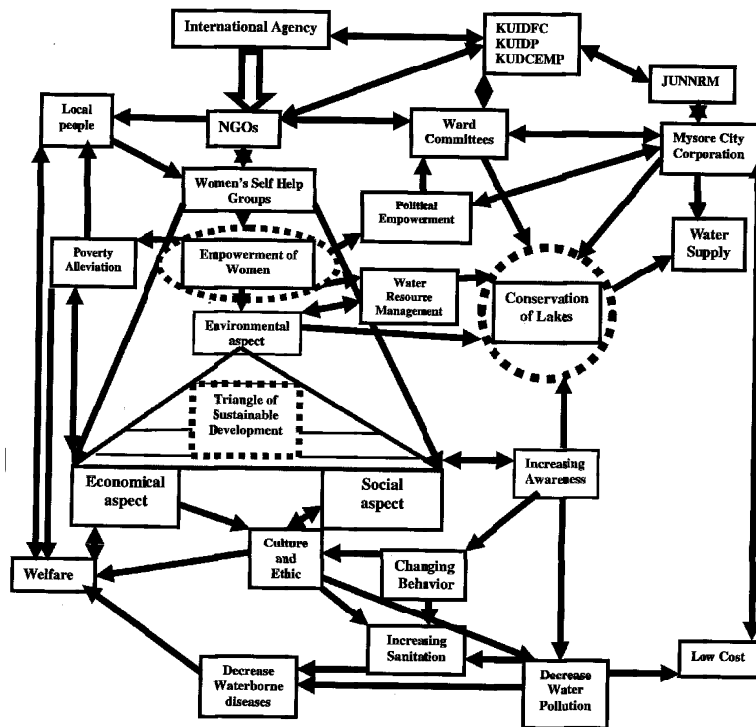


Fig. 3: Institutional arrangement for involvement of women in conservation of lakes and its impact in Mysore city.

## REFERENCES

- ADB 2006. Untold Realities How the ADB Safeguards Have Been Violated in Bangladesh, India, Lao and PDD Pakistan, Asian Development Bank, October 2006.
- Arya, V. 1999. Towards a relationship of significance, A decade of collaboration between Government and NGOs in Rajasthan. In: Farrington J., Turton, C. and James, A.J. (eds), Participatory Watershed Development Challenges for the Twenty First Century, Oxford University Press, New Delhi, pp. 179-208.
- Chandrashekara Mutt, 2000. Ground Water Status at Mysore, Vision and Agenda for Lakes Workshop, Mysore, 2001.
- Cleaver, F. and Kessler, R. 2003. Gender and Water Review (University of Bradford, 1998). The Gender and Water Development Report 2003: Gender Perspectives on Policies in the Water Sector, Loughborough, United Kingdom, Water, Engineering and Development Centre, Gender and Water Alliance, 2003. Available online from <http://www.genderandwateralliance.org/reports/GWA%20Annual%20Report.pdf>. United Nations Development Programme, "Mainstreaming gender in water management: A practical journey to sustainability: A resource guide" (New York, United Nations Development Programme, 2003).
- FAO. 2000. <http://fao.org/gender/gender.htm>
- GTZ. GmbH. 2001. International Conference on Freshwater. Bonn, Deutsche Gesellschaft für Technische Zusammenarbeit. A Online report: <http://www.water-2001.de/ConferenceReport.pdf>
- JagannathaçV., Ramesh, P. and Dharmendra,C.N. .2002. Planning Environmentally Sound Lake Restoration, Center for Ecological Sciences, IISc, Bangalore, Dec., 9-13-2002.
- Kumar, R.K. 2005. Three lakes of Mysore on IBAN list, The Hindu, Online edition of India's National Newspaper, 10-3-2005.
- MET (Mysore Environment Trust) 2001. The eye of the earth, The Mysore Environment Trust@. MET is a voluntary initiative for effective public participation in sustainable development of Mysore region based on Agenda-21 guidelines.
- Planning Commission 1985. Planning Commission, Government of India. Website: <http://planningcommission.nic.in/data/dataf.htm>
- Planning Commission. 1994. Planning Commission, Government of India. Website: <http://planningcommission.nic.in/data/dataf.htm>
- Poark 1984. Women and water, In: Bourne, P.G. (editor). Water and Sanitation: Economic and Sociological Perspectives. Orlando (FL): Academic Press, 1984.
- Pughazhendhi, V. Jayaraman, B. 1999. Increasing women's participation and employment generation among rural poor: An approach through informal groups. Indian Journal of Agricultural Economics, 54(3): 287-295.
- Ravikumar, U.N., Sadananda, K.P. and Guruprasad, P. 2000. A comprehensive plan for conservation of Kukkarahalli lake, Center for Appropriate Rural Technologies, The Natinoal Institute of Engineering, Mysore-570 008.
- Rodda, A. 1991. Women and Environment, Women and World Development Series, Zed Books, London and New Jersey.
- Sutherland, William J. 2000. The Conservation Handbook: Research, Management and Policy. Malden, USA: Blackwell Science, Inc., 278 pp.
- U.N. 2005. UN Decade for Education for Sustainable Development (2005-2014)
- Verhasselt, Y. 1998. Water: Worldwide and Worthwhile. United Nations Office.