

Letter to Editor

Perceptions of Environmental Issues in a Turkish Province

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Abstract

This study focused on the investigation of the structure of environmental organizations, determination of the problems faced by these organizations, explanation of the politics of governmental and non-governmental organizations related to proposed solutions to environmental problems, and illuminating relationships between the two groups. The Tokat province in Turkey was chosen as the research area. A questionnaire was prepared and sent to 16 governmental and non-governmental organizations. Findings indicated that air pollution is the most important environmental concern, followed by domestic waste, soil pollution, lack of a central control system, illegal construction, unplanned urbanization, lack of green areas, water pollution, waste water, lack of infrastructure, use of agricultural lands for different purposes, erosion/deforestation, excessive use of fertilizers and pesticides, noise pollution and burning. Inadequate financial resources, lack of trained personnel and inadequate environmental legislation are the main weaknesses in dealing with environmental problems. The Local Environmental Committee should assume greater responsibility for addressing environmental issues in the future and the Ministry of the Environment and Forestry should act to coordinate activities among organizations. The Ministry, rather than simply being an "advising authority" should also have the authority to levy appropriate penalties to violators. Inter-agency confusion and uncertainty as to the proper roles of different governmental organizations should be addressed and resolved. Successful solutions to environmental problems can only be achieved by not only governmental intervention and enforceable regulations, but also through participation of the whole society.

Keywords: environmental problems, legislation, organizations, Turkey

Introduction

The environment is an important asset. Particularly in the last two decades, the importance of how the environment can affect our lives in positive or negative ways has been understood and much research related to this subject has been conducted [1].

The term environment has a different meaning to a farm family living in a developing country village from its meaning to an environmentalist living in a developed country. For example, for a citizen of a developed country

the environment is about dolphins or whales, nuclear and toxic wastes, ozone layer depletion, acid rain, recycled tin cans or newspapers. For a peasant family living in a developing country, however, it is about resources contributing directly to family livelihoods: drinking and irrigation water, forests, meadows, soil, wild and domestic animals, and so on [2]. Today the bad effects of environmental problems on human health, animals, plants, and other lifeless assets have reached dangerous dimensions, particularly in developed countries. Rapid population growth, unhealthy and unplanned urbanization, rapid industrialization, nuclear accidents and waste, the discharge of domestic and industrial waste, the use of fertile agricultural lands for unsuitable

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aims, and improper agricultural applications are the main causes of environmental problems [3].

Increasing levels of human-generated contaminants in water, air, and soil, which threaten both natural resources and human health was a main concern for many nations in the last half of the 20th century. Turkey, as a developing country, began recognizing the serious nature of its environmental problems in the 1970s. The type and magnitude of environmental concerns varies, depending on the characteristics of the particular locale. Air pollution is a major concern in cities, while contamination of water resources is often a predominant issue for both inland water bodies and coastal zones. Increasing removal of natural ground cover (grasslands, forests) for agriculture, and excess application of amendments to control pests and enhance yields (i.e., fertilizers, herbicides, pesticides, etc.) usually has a negative impact on the local ecology. Difficulties in the manner in which environmental policies are applied in a timely fashion and ineffective organizations contribute to environmental problems. It is not surprising, therefore, that in addition to prevention of environmental degradation and protection of environmental values, the development of public awareness, decision making and effective application of environmental policies are now primary concerns of environmental organizations established at local, national, and international levels.

Different types of organizations have multiple missions relative to environmental conservation. These groups include:

- i) governmental organizations (GOs)
- ii) non-governmental organizations (NGOs – associations, trusts, co-operatives, etc),
- iii) non-profit organizations (NPOs), and
- iv) international organizations.

Nearly 30 international organizations have programs or are otherwise directly or indirectly focusing on environmental issues. Representative groups include the Organization for Economic Cooperation and Development (OECD), the United Nations Environment Programme (UNEP), the United Nations Industrial Development Organization (UNIDO), the North Atlantic Treaty Organization (NATO), the European Union (EU), and others (Green Peace, Greens Party, Club Rome, etc.) [4].

The aims of this study are to:

- i) investigate the structure of environmental organizations,
- ii) determine the recently-identified problems associated with the structures of environmental organizations,
- iii) explain effects of the policies applied by public organizations and NGOs on the solutions of environmental problems, and
- iv) describe and illustrate the relationships among the various organizations.

Brief History of Environmental Issues in Turkey

Although often viewed as a middle to late 20th century concern, interest in environmental degradation in Turkey

dates back to the time of the Ottoman Empire. Even during that period there was an awareness of the impact human activities could have on nature; however, there were no specific policies related to environmental protection. The “*International Sanitary Council*” was established in 1839 to prevent environmental pollution. After that date, studies focusing on environmental protection were limited only to “*Reconstruction*.” Beginning in the 20th century, technology transfer from Europe and developments in the industrial sector were significant factors in environmental degradation [5]. Various legal regulations emphasizing different aspects of environmental issues were initiated following the establishment of the Republic of Turkey in 1923. The aim of the “*Law of Village*” (1924) was to regulate the establishment of new settlement units in rural areas without adversely affecting the natural environment. The preservation of environmental quality was defined as the responsibility of municipalities in the context of the “*Law of Municipality*” (1930) and the “*Law of Hygiene*” (1930). The “*Law of Forestry*” (1937) for the first time defined the term of “*forest*” and included the conservation of forests as a key component. One of the first laws to specifically target the conservation of environmental values was the 1937 “*Law of Archeological Regulations*.” In the 1950s, rapid urbanization and inadequate infrastructure were the main causes of environmental degradation. In order to reduce the negative effects of environmental degradation, the “*Law of Reconstruction*” (1957) was accepted in Parliament, and the Ministry of Reconstruction and Settlement was established soon after [6-8].

At the beginning of the planning period, environmental issues were viewed as basic problems under the auspices of national policies. Various ministries (i.e., Reconstruction and Settlement, Health, and Forest, etc.) shouldered the responsibilities to address and solve environmental problems. Under the control of Turkish Republic Prime Ministry State Planning Organizations, the “*Permanent Consultation Board for Environmental Problems*” was established in 1974. Within a short period of time, the “*Coordination Committee for Environmental Problems*” was established in collaboration with seven other committees or groups (Reconstruction and Settlement, Energy and Natural Resources, Tourism and Information, Health and Social Help, Interior, Food and Agriculture, Industry and Technology). In the same period, the “*Environmental Health Coordination Council*” was established under the control of the head of the Ministry of Health and Help [9]. These units did not solve environmental problems. Therefore, the “*Prime Ministry Undersecretary of Environment*” was established in 1978 to make environmental policies, prepare an Environmental Master Plan of Turkey, and determine environmental standards [10]. In 1984 this organization was re-established as “*General Directorate of Environment*” [11]. Five years later, the organisation was renamed “*Undersecretary of Environment*” [12]. As a parallel to increasing the importance of the environment in Turkey, in 1991 the Turkish Government decided to establish the “*Ministry of the Environment*” [13]. In 2003, the “*Ministry of Environment and Forest*” was established.

Although many GOs and NGOs in Turkey continue the independent process of planning, evaluating, and monitoring environmental issues [14], there are still some uncertainties and difficulties related to how rules and regulations are applied. In fact, the disparate nature of the many groups studying and dealing with environmental concerns may contribute to some confusion.

Material and Methods

All ministries and some NGOs have their sub-branches, units, directorates or departments in 81 provinces of Turkey. Tokat province (population 114,000, located in the Central Black Sea region) was chosen as the research

area. A questionnaire was sent to 16 GOs and NGOs which are responsible for managing, monitoring, and evaluating the environmental issues of Tokat Province. In that questionnaire, participating organizations were asked specific questions regarding their views on the most pressing environmental needs, problems faced by GOs and NGOs, and problems with environmental legislation.

Each organization was asked to rank environmental problems as to their priority, that is, critical importance. These ranks were taken into consideration when determining the overall priority of environmental problems. A “Coefficient of Preference” was calculated by dividing the sum of the priority number by the number of respondents. The lowest coefficient of preference was labeled the most important environmental problem in the research area.

Table 1. Names of governmental and non-governmental organizations and their missions.

Organization name	Structure	Mission
Tokat Environment Foundation (TE)	Trust (directed by selected person)	i) organizing scientific meetings related to environment, ii) awarding GOs and NGOs, and families demonstrating environmental awareness, and iii) collaborative studies with the local branch of TEMA
Tokat Municipality (TM)	NPO (directed by selected person)	i) working to establish a refined wastewater handling and treatment system and a new garbage area to store domestic waste, and ii) stopping illegal construction of houses and factories, especially on the agricultural fields, and establish new green areas.
Provincial Directorate of Youth and Sports (YS)	GO (directed by appointed person)	i) help planting suitable trees around the borders of sport centers.
Provincial Directorate of Environment and Forestry (EF)	GO (directed by appointed person)	i) concentrating on reforestation and protection of natural habitats.
Provincial Directorate of Industry and Trade (IT)	GO (directed by appointed person)	i) encourage establishment of large enterprises at organized industrial areas, and ii) help coming up with the environmental problems faced by the enterprises.
Provincial Directorate of National Education (NE)	GO (directed by appointed person)	i) enlightening the students on environmental protection via seminars, and essay competitions on certain days.
Provincial Directorate of Culture and Tourism (CT)	GO (directed by appointed person)	i) aiming at protection of cultural and historical values, and preventing illegal digging in areas of historical significance.
Provincial Directorate of Agriculture (AG)	GO (directed by appointed person)	i) analyzing and monitoring the effects of waste products on aquatic life in Yesilirmak River, ii) training farmers to stop the burning of grain stubble, and iii) informing farmers about the proper use of fertilizers and pesticides.
Provincial Directorate of Health (HE)	GO (directed by appointed person)	i) utilizing a public health laboratory to measure water and air pollution, and ii) informing GOs and NGOs about the pollution levels of Tokat province.
Provincial Directorate of Rural Affairs (RA)	GO (directed by appointed person)	i) reporting soil classification and construction of rural roads, and ii) supplying clean water to rural households as well as helping rural dwellers to apply good agricultural practices in order to avoid polluting nearby water sources.
Provincial Directorate of Resettlement (RS)	GO (directed by appointed person)	i) monitoring illegal construction, ii) providing technical personnel for infrastructure projects, and iii) suggesting alternative solutions and recommendations to reduce air pollution.
Turkish Foundation for Combating Soil Erosion for Reforestation and the Protection of Natural Habitats (TF)	Trust (directed by selected person)	i) informing voluntary members about soil erosion and reforestation plans for rural areas.
Chamber of Agriculture (CA)	NGO (directed by selected person)	i) contact with the local environment commission only for information transfer.
Finance Office (FO)	GO (directed by appointed person)	i) contact with the local environment commission only for information transfer.
Chamber of Commerce and Trade (CC)	NGO (directed by selected person)	i) contact the local environment commission only for information transfer.
Gaziosmanpaşa University (GU)	NPO (directed by appointed person)	i) clubs of “Environment” and “Natural Sports & Environmental Society” were established to train students about environment, and ii) students graduating from the Faculty of Agriculture attend a course on “Environmental Pollution” during the undergraduate program.

Results, Analysis, and Discussion

Relationships between Organizations and Environmental Issues

Each of the 16 surveyed organizations is given in Table 1 together with the tasks typically undertaken by those organizations.

Structure of the Organisations

The structure of GO, NGOs and NPOs were explained in Table 1. Two of the organisations (Tokat Environment Foundation – TE, and Turkish Foundation for Combating Soil Erosion for Reforestation and the Protection of Natural Habitats – TF) are trusts. Their managers are se-

lected by members. Both Tokat Municipality (TM), and Gaziosmanpasa University are nonprofit organisations. The rector of Gaziosmanpasa University is appointed by the higher education council but the lord mayor is selected by the public. The Chamber of Agriculture (CA) and the Chamber of Commerce and Trade (CC) are NGOs. Their managers are selected by members. The rest of the organisations are GOs and their managers are appointed by the government.

Classes of Environmental Problems

Environmental problems were grouped according to the priority ratings obtained from the surveys (Table 2). The surveyed groups identified air pollution as the most critical environmental problem in Tokat province. This

Table 2. Environmental problems indicated by surveyed organizations as being in need of attention.

Organization	Rank of environmental problems (*), (**)														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TE	6	na	na	na	2	4	8	1	3	na	na	na	na	5	7
CA	2	6	na	1	na	na	3	7	9	4	8	10	5	na	na
TM	1	9	11	7	4	5	2	10	6	8	12	13	3	14	15
FO	1	2	5	na	3	na	na	4	6	na	na	7	na	8	na
YS	1	na	5	na	2	na	6	3	4	na	na	na	na	na	na
IT	1	na	3	na	na	4	7	na	na	na	6	5	na	2	na
EF	na	na	na	na	na	na	1	na	na	na	na	na	na	na	2
NE	na	1	3	2	na	na	na	na	5	na	4	na	6	na	na
CT	2	13	4	12	5	14	3	10	8	6	1	11	7	9	15
AG	na	6	10	na	7	9	na	5	2	3	4	1	na	11	8
CC	3	na	6	na	4	7	8	2	1	10	5	na	na	9	na
HE	1	8	3	na	5	6	na	9	4	na	2	7	na	na	na
RA	5	na	na	na	na	na	na	na	4	3	2	1	na	na	na
RS	1	na	2	na	na	4	na	na	3	na	na	5	na	na	na
TF	1	2	na	3	4	6	8	5	9	13	7	10	11	na	12
GU	1	2	8	3	4	9	7	5	10	na	6	11	12	14	13
Total (A)	26	49	60	28	40	68	53	61	74	47	57	81	44	72	72
Number of Respondents (B)	13	9	11	6	10	10	10	11	14	7	11	11	6	8	7
Coefficient of Preference (A/B)	2.0	5.4	5.6	4.7	4.0	6.8	5.3	5.5	5.2	6.7	5.1	7.4	7.3	9.0	10.3
Ranking	1	7	9	3	2	10	6	8	5	11	4	13	12	14	15

(*) (A) Air Pollution, (B) Water Pollution, (C) Illegal Construction, (D) Soil Pollution, (E) Domestic and Industrial Waste, (F) Lack of Infrastructure, (G) Lack of Green Area, (H) Waste Water, (I) Lack of Central Heating, (J) Erosion/Deforestation, (K) Unplanned Urbanization, (L) Improper Use of Agricultural Land, (M) Excess Use of Chemical Fertilizers and Insecticides, (N) Noise Pollution, (O) Stubble Burningna: not available, (**) Ranking of Environmental Problems Faced by GOs and NGOs

was followed by domestic waste, soil pollution, lack of central control system, illegal construction, unplanned urbanization, lack of green areas, water pollution, wastewater, lack of infrastructure, use of agricultural lands for nonagricultural purposes, erosion/deforestation, excessive use of fertilizers and pesticides, noise pollution and burning of stubble. Tokat province has 250,000 m² of land used for domestic and industrial waste handling and disposal near the Yesilirmak River. The quantity of domestic waste is nearly 80 tons/day. All waste materials are collected together without any further separation of paper, bottles, plastics, medical wastes, and so on. Although there is a designated area to store the waste, this area is uncovered, unfenced and access is uncontrolled. Domestic wastes are mixed with medical wastes. Sometimes litter is burned, resulting in noxious odors and possibly spreading infectious diseases. Fish kills in the Yesilirmak River may be the result of the release of toxic chemicals. These pollution issues indicate that the Local Environment Committee is not active enough in identifying solutions to the domestic, industrial and medical waste problems.

Table 3. Problems faced by governmental and non-governmental organizations.

Organizations	Problems of organizations					
	A (3)	B (1)	C (2)	D (4)	E (5)	F (6)
TE	*	*	*	---	---	---
CA	*	*	*	---	---	---
TM	*	*	*	*	*	---
FO	*	*	*	---	---	---
YS	*	*	---	---	---	---
IT	---	---	*	---	---	---
EF	---	---	*	---	---	---
NE	---	---	*	*	*	---
CT	*	*	*	*	---	---
AG	---	*	---	*	---	*
CC	*	*	*	*	---	---
HE	*	*	*	*	---	---
RA	---	*	---	---	---	---
RS	*	*	---	---	---	---
TF	*	*	*	*	*	---
GU	*	*	*	*	*	---

(*) (A) lack of personnel (B) lack of financial resources (C) lack of legal regulations (D) lack of awareness of how other organizations address problems (E) lack of understanding or concern about environmental problems by society (F) political approaches, (**) ranking of problems that organizations faced.

Difficulties Faced by Organizations

The lack of adequate resources (financial and material) is the most common problem faced by organizations. This is followed by inadequate legal regulations, lack of experienced personnel, lack of an understanding of the actions and approaches of other organizations, a lack of environmental awareness by the general public, and political approaches (Table 3).

Confusion about the intent and application of environmental legislation is a weakness of both decision makers and administrators. The majority of organizations are acting only as if they are approval offices, without the power to enforce the regulations. Penalties for polluters are too low to induce firms or individuals to make substantive changes to routine practices. If an industrial firm and agricultural farm cause significantly adverse environmental harm, the situation is reviewed by the Local Environmental Committee and a penalty is assessed to the offending company.

View of Organizations on Turkish Environmental Legislation

Confusion about authority among organizations is a major problem related to environmental legislation. Not having an efficient classification of environmental legislation relative to assignment of enforcement responsibilities results in misunderstanding and inaction. Some organizations had no comment regarding the question of Turkish environmental legislation (Table 4).

Table 4. Views of organizations of environmental legislation.

Organizations	Ranking of Legal Regulations (1 = most important, 3 = least important)			
	A (2)	B (2)	C (1)	D (3)
TE	+	+	+	---
CA	---	---	---	+
TM	+	+	+	---
FO	---	---	---	+
YS	---	---	---	+
IT	+	---	+	---
EF	---	---	+	---
NE	---	+	---	---
CT	+	+	+	---
AG	---	---	+	---
CC	+	+	+	---
HE	---	---	---	+
RA	+	+	+	---
RS	---	---	---	+
TF	+	+	+	---
GU	+	+	+	---

(+) (A) not having efficient classification of environmental legislation, (B) not having enforcement authority, (C) confusion about authority and responsibility, (D) inadequate legislation or no comment.

Coordination between Organizations

There is little or no coordination between organizations when it comes to environmental issues. However, information transfer does occur among organizations, although that transfer is typically limited to specific areas of responsibility (Table 5).

The managers, heads of chambers, or representatives of GOs and NGOs typically attend meetings of local environment committees. Unfortunately, technical personnel or environmental experts that often have to deal with problems directly do not attend the meetings. As a result of the lack of participation of individuals with practical experience, incorrect or poor decisions may be made.

The Provincial Directorate of Health has medium or strong relationships with NGOs or GOs (except for Gaziosmanpasa University and Chamber of Commerce).

Gaziosmanpasa University is a nonprofit organization. However, it is one of the organizations having the weakest relationships with other organizations. At the same time, there is weak coordination between the Provincial Directorate of Industry and Trade (IT) and other organizations, except for Tokat Municipality and the Provincial Directorate of Health.

Some organizations (Tokat Environment Foundation, Finance Office, and Provincial Directorate of Environment and Forestry) have strong relationships with other environmental organizations (Table 5).

Extension Activities of Organizations in Training People

Due to the lack of trained personnel and an inadequate supervisory structure, more than half of the organizations (52.94%) have difficulty in directing firms or individuals. Communication through the media and other information outlets (i.e., brochures, newspapers, journals, letters to farmers, panels, etc.) are used by 58.82% of organizations. The majority of the papers are prepared as periodicals (monthly or quarterly). This mode of communication is sometimes too slow to address concerns that are in need of immediate action. In addition, the Provincial Directorate of Agriculture organizes meetings with farmers to discuss the hazards of burning stubble in the winter and summer.

It is difficult to compare the result of this study with other studies because the number of papers focusing on perceptions of environmental issues is limited. The results of this study (Tables 2, 3, 4, and 5) are parallel to the study conducted in Adana province of Turkey [9]. In another study focusing on the sensitivity of rural people to environmental problems, rural dwellers were asked about who had the most power to solve environmental problems. The great majority of them said that the government should be the agency in society taking the responsibility for solving environmental problems. This result is the traditional Turkish perspective seeing

Table 5. The level of relationships among organizations (*).

	TE	CA	TM	FO	YS	IT	EF	NE	CT	AG	CC	HE	RA	RS	TF	GU
TE		3	4	3	4	4	4	4	4	4	5	5	4	4	4	4
CA	3		3	3	1	4	4	4	5	4	4	4	1	2	1	4
TM	4	3		5	3	4	3	4	2	4	3	3	5	2	1	1
FO	2	5	5		5	5	4	5	4	4	5	5	4	5	4	5
YS	1	1	3	3		4	4	5	3	4	1	5	5	5	1	5
IT	1	1	3	1	1		1	1	1	1	1	3	1	1	1	1
EF	4	3	4	5	3	3		4	3	4	3	4	4	4	4	3
NE	3	1	3	1	3	1	3		3	1	1	3	1	1	4	1
CT	4	2	4	5	4	4	3	5		3	2	4	2	4	3	4
AG	1	2	2	1	1	1	2	1	1		1	3	3	1	1	1
CC	1	3	4	4	3	5	2	4	3	2		2	3	3	1	4
HE	5	1	3	2	2	2	1	2	1	3	1		1	2	1	2
RA	1	2	3	1	1	1	2	2	2	3	1	4		2	4	3
RS	1	1	5	1	1	1	5	1	1	5	1	5	5		1	1
TF	4	1	2	1	1	1	2	4	2	1	1	3	5	3		2
GU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

(*) Level of relationship: 1 = weakest, 2 = weak, 3 = medium, 4 = strong, 5 = strongest

the state as “father” or a paternalistic state [15]. The proportion choosing local management (municipality) and university-research institute were media (television, radio or newspaper) should take the responsibility. Nearly one-third of the respondents answered this question as non-governmental organizations (foundation or association) and private sector. Limited the number of households said that Workers Union should be the agency taking the responsibility for solving environmental problems [1].

Effects of the Policies Applied by Public Organizations and NGOs on the Solutions of Environmental Problems

In late 2004 the EU decided to start negotiations with Turkey to be a full member in the future. This situation has forced Turkey to regulate policies related to the environment. As parallel to this change, in recent years, Tokat Municipality and other county municipalities have prepared some projects related to recycling domestic and industrial wastes to benefit from European Union Funds. Some of them were found by the EU as useful to implement them. In addition, municipalities are trying to remove domestic waste that was omitted to the border of Yesilirmak river and organizing this area as recreation area.

The Ministry of Agriculture supports organic farming activity, rehabilitation of grazing areas, keeping biodiversity, informing rural people about multifunctional agriculture, collecting empty agro-chemical boxes and bottles via premium, and extension activity.

In recent years, provincial directorate of rural affairs started to implement “natural refine system” using crops in order to solve sewage problems of villages. The cost of this system is low and it is an environmentally friendly activity.

One of the most important health problems in the research area is the spread of tick disease throughout the province. Therefore, the provincial directorate of health is in contact with all the GOs and NGOs to inform the public how to address this problem.

Conclusion and Recommendation

Continued environmental degradation at multiple functional and ecosystem levels is detrimentally affecting people, domestic animals, wildlife and plants in Turkey. The data gathered for this study strongly indicate that effective organizations are an important factor in meeting the challenges of environmental problems, and efficiently applying environmental policies. Many GOs and NGOs are active in the environmental field throughout Turkey. It is expected that methods to address many environmental problems would be more easily identified if strong coordination among organizations was achieved. Air pollution

and domestic, industrial and medical wastes are generally considered the most critical short-term environmental problems to be solved in Tokat province. Inadequate financial resources, lack of trained personel and inadequate environmental legislation are the main weaknesses in dealing with environmental issues.

The Local Environmental Committee should accept more of the important responsibilities in addressing environmental concerns in the future. Expanding the role of the Ministry of Environment and Forestry to that of a coordinating agency and giving it the authority to levy appropriate penalties (including monetary fines or suspension of operations) should help ease confusion and solidify lines of communication and control. The problem of confusion in competence or misunderstanding of roles of different organizations should be addressed soon. In the end, however, coordination of groups and organizations and the application and enforcement of regulations will only go so far in addressing environmental concerns. Understanding and participation by society as a whole is the key to solving many environmental problems.

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