Action, inaction and environmental destruction: Socionatural determinants of the disappearance of Lake Alemaya (Haromaya), Eastern Ethiopia

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This Paper critically examines the role of social action and inaction in the use or abuse of natural resources as well as in the absence of corresponding action to restore some of the finite resources such as the water of Lake Alemaya in Eastern Ethiopia. The Paper outlined the key socionatural determinants of environmental deterioration. Its unique contribution to our understanding of the interrelationship between social and natural resources lies in its emphasis on the concept of inaction which is often neglected in the analysis of environmental degradation and the incalculable damages caused by human action. The study employed primary data derived from many years of focused observation, experiential learning and frequent interaction with members of the community and officials in the Lake region. This is complemented by data from the literature about changes that have taken place in and around the Lake. The study concluded that in order to prevent environmental destruction and rehabilitate depleted resources, it is imperative to pay particular attention to both action and inaction of social entities. It also underlines that restorative policies and programs should always maintain a balance between these two aspects human life.

Key words: Lake Alemaya, environmental destruction, social action, inaction.

INTRODUCTION

Since man is in constant interaction with nature, intensive exploitation of certain types of resources has resulted in often irreversible environmental destruction. This, in turn, results from “… the intensions, decisions, and understandings of a wide range of social actors …” (Calhoun et al., 1994:27), that is, from a web of social action or inaction. Calhoun et al. conceived of social action in terms of “Behaviour which is shaped by a person's understandings, interpretations, and intentions ... which is in response to, coordinated with, or oriented toward the actions of others”. The concept of social action has been one of the major analytical tools in the social sciences, notably sociology, since the latter’s emergence as a scientific discipline. In the words of Leydesdorff (1993), “Ever since Weber, sociologists have attempted to explain social structure and change on the basis of a theory of action.” Similarly, the concept of social action as a central idea of sociological investigation has been well articulated by Rocher (1972:6) who argues that “… the subject matter of sociology [is] social action or human action in various social environments”. By extension, this Paper argues that the subject of environmental studies is the interface between human action or inaction and the natural resources towards which human action or inaction is directed /exerted.

The concepts of social action and inaction are new to the study of environmental destruction and its consequences on societies or on further human actions in the struggle for coping with climate change and degradation of resources. Employing these two interlinked concepts, this study intends to provide a holistic assessment of the socionatural causes and consequences of the demise of Lake Alemaya in eastern Ethiopia. The discussion focuses on indicative, but by no means exhaustive, list of
social action and inaction of the community around the Lake engaged in the production of goods and services using the water of the Lake as one of the major natural or physical capital.

In a small way though, the study aspires to contribute to the ongoing debate on the human or social aspects of environmental crises, climate change and global warming. Throughout, the paper strongly argues that depletion of natural resources such as water, soil fertility, biodiversity, and the decline in productivity result from a multitude of social, cultural, political and economic factors operating, directly or indirectly, on these resources. As a sociological analysis of ‘the tragedy of the commons’ (see Sinha and Kumar, 2013), the paper looks into the actions of collectivites not of individuals though the two are not mutually exclusive. This is because, as Rocher (1972:7) puts it, “for the sociologist, the smallest concrete unit of observation is the relationship between two people, their contacts with each other, or more precisely, their interaction…” in a given environment as well as the effect of this interaction on the actors themselves, on other peoples, things and resources. “.... Human action is social in so far as, by virtue of the subjective meaning attached to it by the acting individual (or individuals), it takes account of the behaviour of others and is thereby oriented in its course” (Max Weber, cited by Rocher, 1972:13). Weber viewed action from its subjective attributes taking into account the perception, interpretation and understanding of the human actors. Others, like Durkheim, on the contrary, tend to see social action as an objective phenomenon of life. According to this view, “Social action consists of ways of acting ... existing outside the individual consciousness.” Durkheim uses two “objective” criteria to determine the social characteristics of human action: the externality of ways of acting, thinking and feeling, and the constraints to which individuals are subjected” (Rocher, 1972:17). Rocher himself identified two important foundations of social action (a) normative foundation and (b) the symbolic or ideal foundation of social action. Talcott Parsons (1937) considers “action” as a primary area of analysis of social realities. He thought of action to refer to “...all human behaviour, whether individual or collective, conscious or unconscious”. According to Parsons, “Human action is always located simultaneously in four contexts: (a) the biological context, (b) the psychological context, (c) the social context, and (d) the cultural context. Though not explicitly, Parsons recognizes the interaction between social and natural forces and their reciprocal impact on one another. However, he encourages extractive or exploitative human action in the process of modernization through industrialization.

With regard to the effects of negative social action on natural resources, anthropologist Michael Howard (1996: 398) points out that “Many of the deserts and treeless landscapes of the world today are testimony to past destruction of the environments by human (action)”. This destructive human action has been attributed to the sheer absence of “environmental ethic” (Bennett, 1996:10). Using the concept of ‘socionatural system’ as an organizing principle which combines both nature and nurture, Bennett argued that “Empirically, socionatural systems can consist of any ongoing relationship between human activities and environmental phenomena in which the humans provide the goals and means and the environment the wherewithal”. Some cultural ecologists, for example, Beck, (1992) and Bennett (1996) hold the view that destructive human action more profoundly affects industrially developed societies wherein the means of destroying environmental resources is abundant and powerful. However, the difference between industrialized and non-industrialized societies is mainly of degree not of kind since the forces of destruction embedded in human action and inaction prevail in both.

While existing studies focus on the consequences of negative or exploitative social action, they often ignore the implications of inaction. As a matter of fact, both social action and inaction constitute two sides of the coin in human experience and affect the natural environment either positively or negatively.

Social action refers here to those human activities that deal with the different ways of acquiring livelihoods, producing goods and services, extracting resources and interacting with human fellows as well as with the natural environment. Unlike Max Weber who sees social action in its subjective and abstract forms, social action is conceived here in its tangible aspects whereby man interacts with the social and material world consciously; and affects or is affected by it. On the contrary, inaction refers to man’s insatiable use of resources, on the one hand, and his hesitation to constructively act towards preserving and maintaining a balance between utilizing and sustaining the resources on which human life depended, on the other. While the term “environment” is very broad, it refers here to water, animal, land and plant resources in and around Lake Alemaya. More specifically, it deals with the aquatic resource of the area under consideration. Therefore, environmental destruction is used to indicate uncontrolled and wasteful utilization of these resources. The Results of this study offers a comprehensive account of the damages done to Lake Alemaya due to exploitative human action and inaction up until the early to mid 2000s.

METHODOLOGY

Description of the study area

Lake Alemaya is located in Alemaya woreda\(^1\) or district of eastern Ethiopia. The Lake is surrounded by the district town of Alemaya from the south and southwest, by Alemaya University from southeast to northeast, and by a constellation of villages as well as farm fields from the

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\(^1\) Woreda is a common reference to a district or county.
domestic consumption or irrigation purposes. All these water of the Lake, directly or indirectly, either for Awoday, Dire Dawa and Jijiga used to depend on the rural and urban populations of Alemaya, Harar, around homesteads, the natural vegetation cover has disappeared due to exploitative human actions for decades and centuries.

Lake Alemaya was one of the most scenic and attractive fresh water lakes in eastern Ethiopia. “As recently as the mid-1980s its maximum depth was around eight (8) metres and it covered 4.72 km². Since then, Alemaya’s water level and surface area have declined considerably. In recent years, low water levels have interrupted the water supply in Harar, a nearby town of over 100 000” (UNEP, 2006). Ketema et al. (2011) reported that “The Alemaya Lake …originally covered more than 175, 140 ha but had shrunk to 87, 910 ha (which is 50% of the original) in 1985 and to a mere 58, 600 ha (33.5% of the original) in 2002.” This was even a generous estimate since within the next two years: in 2003 and 2004, the Lake almost completely dried-up. The loss of the Lake, which was a source of drinking water, irrigation and fisheries, has affected the livelihood and well-being of millions of people in the region. Both the rural and urban populations of Alemaya. Harar, Awoday, Dire Dawa and Jijiga used to depend on the water of the Lake, directly or indirectly, either for domestic consumption or irrigation purposes. All these towns are active commercial centres, mainly of contraband business entering the country through the porous borders with Somalia and Djibouti. Owing to the opportunities created by improved infrastructure and availability of transport services, the population around the Lake involves in both farm and non-farm activities. The farm activities include growing food and cash crops such as Chat or Qat, fruits and vegetables. Most importantly, Chat, an evergreen leafy plant chewed for its stimulating effects, has proved an attractive economic enterprise bringing a considerable amount of income for both rural and urban households. Chat performs well under irrigation farming and brings high level of returns during the dry season. Therefore, those who own pumping engines and irrigate their Chat fields are wealthy and tend to exploit the water of Lake more than any other farmers in the region. This human enterprise has impacted the Lake immensely and subsequently will be discussed.

RESULTS AND DISCUSSION

Types of social action responsible for the destruction of the Lake Alemaya

Population dynamics

Population growth is a socio-cultural and historical process as much as it is a biological one. It is a social process because it results from patterned, recurrent, and incremental human actions and interactions. Population dynamics are governed by explicit and implicit social norms. Several studies, including this one, confirmed that population pressure is the single most important factor for the destruction of the natural environment; and population is a result of human intensions, decisions or choices. Loreau (2010: 4) argued that “All organisms are embedded in a complex web of interactions with their environment … As populations grow, they modify their own environment through these multiple interactions …” When a given population extends beyond the carrying capacity of the land and other natural resources, it entails continued shrinkage as well as complete disappearance of such resources due to over-exploitation or unwise utilization of resources.

This is exactly what happened to Lake Alemaya. The size of the population in the surrounding communities has been growing rapidly, for example, from a total of 166, 597 according to the 1994 Census of Ethiopia to 271, 018 persons as per the 2007 Census, an increase of 104421 persons (38.5%) in just 20 years time. This again has resulted in an estimated population density of 430 people per kilometre square, leading to high concentration of people in the vicinity of the Lake (see Kebede, 2000). Such concentration has, in turn, led to the increasing extraction of water for both domestic and agricultural purposes thereby accelerating the demise of the Lake.

The problem of population pressure is not only in the rural villages surrounding the Lake, but also in the adjoining towns where the Lake has been the only source
of water supply especially for towns like Alemaya, Awoday, Hamaressa and Harar, all along the highway between the Lake and the historic City of Harar. In this connection, Assen (2011) observed that in the Lake region urban settlement “…more than doubled over a 42-year period (between 1965 and 2007). Urban land expanded to both cultivated and non-cultivated LUC.”

**Land use patterns**

The land use pattern in the area is characterised by mixed farming: crop production and animal husbandry. Alemaya woreda is suitable for the production of lowland to mid-altitude crops such as maize, sorghum, groundnuts, vegetables and Chat. Accordingly, economic activities in this woreda take place along four interrelated farming systems: (1) cereal dominated production, (2) vegetable production, (3) Chat dominated production systems; and (4) mixed farming systems – livestock and crop production. According to the 1984 land use data, the woreda has been a subsistence crop-producing area consisting of sorghum (65%), maize (19%), Chat (8%) and vegetables (7%). Over the years, however, farmers have been converting their farms to the production of Chat which is expanding at a rapid rate. Recent estimates suggest that Chat farms rose from 8% in the early 1970s to about 26% of the area cultivated in the woreda at the end of the 1990s (Alemaya Bureau of Agriculture, 1997). This has resulted in a dramatic change in the farming system of the area since the shift from cereal to cash crop production tends to be both rapid and immense.

**Implications of the shift from food production to cash crops**

Farmers in the vicinity of the Lake and other parts of eastern Ethiopia are increasingly shifting from cereal to cash crop production. Chat is cultivated both under rainfed and irrigated conditions. Chat farmers who rely on rain alone produce large quantities during the rainy seasons but production decreases during the dry seasons which reduce the supply of Chat. Therefore farmers who use irrigation harvest Chat throughout the year and get high returns for their product when the supply is low while demand either increases or remains the same. Because of this, wealthy farmers buy pumping engines and pipes to irrigate their Chat fields. Consequently, they earn a considerable amount of income from Chat and become wealthier than their food growers or Chat producers during the rainy seasons. When there is scarcity of rainwater for farmers in other areas, the Lake region farmers sell a kilo of Chat up to Birr 300, which means Birr 30,000 for 100 kilo of Chat. It is estimated that farmers using the water of the Lake could produce a minimum of 5 quintals. Accordingly, they could earn up to Birr 150,000 per annum. Crop or livestock farmers cannot produce even a quarter of this income even under adequate rainfall. This encourages farmers to convert their plots into Chat and use irrigation water extensively.

In the early 2000s, informants estimated that there were between 20 and 30 pumping engines charging water out of the Lake to irrigate Chat farms as far as 8 to 12 kilo meters. In addition to using the engines and accessories on their own farms, some of the owners rent them out to neighbours who cannot afford to buy such facilities. Accordingly, during the 2000s, pumping engine fees ranged between Birr 60 and 80 per hour. Thus, in addition to getting income from Chat, wealthy farmers could earn additional income from the rent of pumping engines with accessories. In effect, the practice has triggered a growing demand for irrigation technologies most of which come from Asian countries, particularly China, Taiwan, Indonesia and Singapore. They are mostly smuggled via the borders of Somalia through Hartishek, an important trade centre in eastern Ethiopia. Unfortunately, there is no quantitative data on the water discharging capacity of these engines. Nevertheless, the net impact of the continued extraction of water on the Lake has been evidenced by gradual and ultimate disappearance of the Lake.

Systematic observations reveal that some farmers and urban merchants have been accumulating wealth, especially over the 1990s, after the removal of government intervention in local economic activities. Wealth is an illusive a concept but such material possessions as cars, Radios, TVs with satellite dishes, roofs with corrugated sheets in place of the old grass thatched houses, all of which constitute important indications of the changes in the material cultures of the community.

As a result of increased Chat business and the flow of cash into the region, a number of villages are growing into urban centres very rapidly. An important example is Awoday, which is the largest and most famous Chat centre and which has transformed itself from a small village a decade ago to a very crowded town in recent years. Awoday is famous for the quality and quantity of Chat marketed in the region. Although exact figures are difficult to obtain, an estimated 2 to 3 million Birr circulates every day in the town of Awoday, mainly attributed to the Chat transaction. Hundreds of thousands of people earn their living by processing Chat for export, transporting goods and people, and engaging in retailing activities. Consequently, Chat enabled people to form a network of relationships and institutions that starts from the rural villages producing the Chat and stretches to the different local and international destinations such as Dire Dawa, Harar, Jijiga, Addis Ababa, Somalia, Djibouti,

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<sup>2</sup> Chat is an evergreen plant whose leaves are chewed for their stimulant effects.

<sup>3</sup> This figure refers to the price of Chat in the early 2000s.
Yemen, Saudi Arabia, and even as far as Holland, England and Sweden in Europe.

The local people usually prefer the fresh shoots; but in areas where it takes time to transport, people would still buy and chew Chat older than two or so days. Chat processors, exporters and transporters work round the clock to make the Chat available for the market, preferably before midday. Chat exporting enterprises employ the best drivers, often the most reckless ones, drivers to deliver Chat as early as possible. They often drive at night, at times alone, or only with a single assistant to reach their destination before the opening of local markets and international departures.

In this case, Chat has boosted the transport sector in the region. Increased movement of people, goods and services has made Harar and Dire Dawa important business centre. The later is a junction point between Jijiga, Somalia and Addis Ababa owing to its connection with these places through railway, air and road transport services. The consequence of all these for the Lake is that more water is needed to grow Chat and that a large amount of water is extracted everyday which has caused the gradually decline as well as complete disappearance of the Lake.

**Extraction of drinking water**

The pumping of water for domestic consumption has equally accelerated the demise of the Lake since the nearby towns, especially Harar and Alemaya, were obtaining drinking water since the mid-1960. A medium size water processing plant was installed at the southern end of the Lake, north of the town of Alemaya. At the time of the establishment of the plant, the population of Harar was around 65 thousand people, and the water was sufficient to meet the needs of this population. During the last four decades, however, the population has more than doubled owing to a combination of demographic factors: high birth rate, relatively low death rate, and increased rural-urban migration. This has created immense pressure on the water of the Lake. In effect, the continuous sapping of water has accelerated to the eventual disappearance of the Lake.

**Waste disposal and chemical concentration into the Lake**

As earlier mentioned, there are no concrete empirical data on the amount and impact of chemical concentration and other waste materials deposited into the Lake. However, frequent and structured observations enabled the author to appreciate the magnitude of the problem. Such observations revealed two principal sources of material and chemical waste that have contributed, directly or indirectly, to the consignment of Lake Alemaya to history. The first refers to considerable quantities of fertilizers used by individual farmers and Alemaya University around the Lake. Floods wash away these fertilizers and deposit them into the Lake every year. Though the relationship between chemical accumulation and the decline as well as complete disappearance of the Lake has not yet been established, the author firmly believes that they have significantly contributed to the growth of luxuriant reeds and fine grasses which ultimately affected the Lake’s carrying capacity and biological diversity in and around the Lake.

The second source of material and chemical waste comes from household garbage and solid as well as liquid disposals. For example, rural villages around the Lake dispose their household wastes, including human night soils, in the open, and these go freely in one form or another into the water. The quantity may not be so big but the chemicals separated from such wastes as they decompose can undoubtedly have a disastrous effect on the water of the Lake. However, the major producers of both types of waste happened to be Alemaya University and the town of Alemaya. A brief overview of the role of the University in the demise of the Lake is outlined below.

**The impact of Alemaya University on the Lake**

As indicated, Alemaya University occupies the area from south-eastern to the north-eastern portion of the Lake and extends to the nearby hills covering an area of about 400 hectares. The campus buildings and human activities, however, are concentrated on the top and feet of a slightly rising hill to the north-east direction of the Lake. To begin with, the University used to get its water supply from underground wells dug at different spots very close to the Lake. Besides, before the disappearance of the Lake, the University used to extract surface water for irrigation of its farms for both research and related purposes including for cattle fodder. Moreover, the University community consumes a huge amount of materials (food and non-food items). As a result, the University produces tons of solid and liquid waste every year. Most of these waste disposals end-up being washed and carried into the Lake thereby either polluting the water, destroying its aquatic biodiversity or filling up space in the Lake. Based on data from systematic and focused observations, the major types of waste attributed to the University are discussed as follows:

**Food and related wastes**

Since the University is a boarding institute where students get food and shelter, thousands of tons of foodstuffs are procured and consumed, leading to a
considerable amount of garbage. Leftovers of food, vegetables, bones and related refuses occupy the area very close to the Lake, which is constantly washed away, and taken into the Lake. Both the decomposed and un-decomposed wastes form a hill of garbage providing food for hyenas, dogs, vultures, and other birds all the year round. The toxic and deleterious chemicals both from the original ingredients of food items and also from the fermentation of refuses flow into the Lake thereby accelerating its decline. Nobody seemed worried about this phenomenon and no one has ever tried to know how much damage this pernicious human action has caused to the Lake.

House ware and industrial wastes

This refers to the careless and uncontrolled disposal of household and vehicle remains into and around the Lake. Since it is located in a remote rural setting and since it has to provide transport facilities, the University owned a considerable number of vehicles for different purposes. In the course of time, many of these vehicles get out of use and discarded near the Lake. For example, the Garage for vehicle maintenance, servicing and dispatching vehicles is located at the edge of the Lake. Therefore, all types of waste from vehicles and their accessories such as leftover benzene, kerosene, engine oils and greases flow into the water with considerable devastation to the Lake’s ecosystem. Moreover, the bodies and parts of old cars litter the ground around the garage. Owing to physical and chemical processes, these body parts rust and decompose with the decay washed away and transported into the Lake. Similarly, a large quantity of household devices, particularly old gas stoves, refrigerators, cylinders, bed parts, and other materials are strewn along with old vehicle bodies and parts. These wastes pass through the same process of decaying, weathering, washing, and penetrating the Lake.

Wastes from the Slaughter House of the University

As earlier mentioned, the University supplies food and other means of sustenance for its students. These include meat from the University’s own slaughtering house. The Abattoir is located behind the garage and very close to the Lake. The positioning of this slaughter house close to the water might have been justified on pragmatic grounds, that is, to remove the waste or undesirable parts of the meat easily. However, this practice constitute a blow to the Lake because most of the waste goes into it, not directly because the waste is not disposed in the open, but indirectly, as an underground seepage. In addition, meat offal from the University’s zoo located in front of the garage and also near the water, flow into the Lake.

Animal dung and poultry litters

As a primarily agricultural institute of higher learning, the University maintains a considerable number of dairy cows, beef cattle, sheep, goats, and poultry both for research and consumption purposes. These animals produce a huge amount of dung and litter; and floods carry them into the Lake. Dung and other animal wastes produce two inevitable consequences on the Lake. First, like any other organic materials, they occupy space and constrain the storage capacity of the Lake though this could be a very negligible impact. The second and most important consequence refers to their impact as soil enrichment nutrients which allow grasses and reeds to grow faster and denser. As a matter of fact, reeds have been one of the major natural causes of the demise of the Lake and heir luxuriant growth as well as rapid advance into the body of the Lake is closely linked to the dung and litter of livestock belonging to the University and the surrounding community. Unlike chemical fertilizers, dung serves as fertilizers for more than two or three years. This helps reeds and other aquatic plants to grow luxuriantly thereby swallowing a large part of the Lake every year.

Construction and other activities

The University has been expanding over the years. This expansion entailed a series of human activities such as new building constructions, increase in campus population and rising demand for services. In the process, construction activities have done harm to the Lake in two important ways. First all, construction requires, among others, a considerable amount of water. Most of the water comes either directly from the Lake or indirectly from the wells dug around the Lake, which again in turn compromise the underground storage of water. Second, construction involves digging, bulldozing and moving the Earth for various reasons. This often leads to heaping up of freshly moved earth on the hillsides above the Lake. The loose soil is easily washed down by floods during the rainy season and deposited into the Lake. As a result, the soil occupies considerable areas of the water thereby making the Lake increasingly shallow.

Farming activities of the University

If the surrounding farmers are to be blamed for damaging the Lake and its environment through farming and use of chemical fertilizers, the University should take the largest blame since it has been involved in intensive farming for the last fifty years. The University uses tractors for this purpose, and makes intensive use of fertilizers, pest and herbicides. In effect both the top soil and the restudies of chemicals enter the Lake regularly. This, in turn, destroys
the aquatic ecology and fills in the Lake with eroded top soils.

To sum up, the presence of the University in the vicinity of the Lake has caused more damages to the Lake than any of the other factors. This has been evidenced by the fact that a considerable portion of the Lake bordering the University disappeared first indicating the devastating impact of the University on the Lake through its diverse socioeconomic activities.

**Soil erosion and siltation**

Erosion is a natural process of soil transportation and deposition into the Lake as a result of run-off waters during the rainy seasons. As outlined in the preceding sections, the problem of soil erosion emanates from the diverse social action characterized by mixed farming, crop production, especially cash crops, and animal husbandry around the Lake. Systematic observations reveal that farmers plough each acre of land in the vicinity of the Lake up to the edges of the water. Consequently, “Annual deposits of close to 8,000 metric tons of silt have compounded the problem reducing the lake’s water capacity by approximately 7,500 cubic meters per year” (UNICEF, n.d). With respect to the causes of soil erosion, transportation and deposition into the Lake, Muleta et al. (2006) argue that “In the Lake Alemaya catchment, soil erosion is caused by the intense rainfall, steep topography, and poor vegetation cover coupled with cultivation of steep lands, and inadequate conservation practices. Sediment from the catchment has affected the storage capacity of Lake Alemaya”.

However, siltation through erosion also comes from many non-cultivated areas. This includes the faraway hills, gorges and gullies form all over the watershed areas of the Lake. Since vegetation covers of the area are skinned off through continuous deforestation, the land is exposed for excessive erosion.

**Biological factors (plant processes)**

Biologists explain the disappearance of lakes in terms of ecological succession. They identify two types of succession: primary succession and secondary succession. Keeton et al (1986:946-7) wrote:

> ... Sediments washed from the surrounding land begin to fill up the pond, and the dead bodies of planktonic organisms add organic material. Soon pioneer submerged vascular plants appear in the shallower water near the margins of the pond. Their roots hold the silt, and the pond bottom is built up faster where they are growing. In addition, as these plants die, their bodies accumulate faster than decomposers can break them down. Soon water is shallow enough for broad-leaved floating pond-weeds to displace the submerged species, which now become established in a zone farther out in the pond, where conditions are more favourable for them ... These plants grow very close together and hold the sediment tightly, and their great bulk results in rapid accumulation of organic material ...

As pointed out earlier, this is the very process that exactly happened to Lake Alemaya. Reeds have plaid a great role in destroying the Lake in such a way that they grow into the shallow part of the water, where no other plants could grow, and they affect the water of the Lake in two major ways: (1) as they grow luxuriantly, they absorb water and facilitate evapotranspiration; and (2) when they dry up, decay and occupy space thereby helping silt accumulate. They also facilitate the multiplication, rapid growth and death of aquatic plants and animals contributing to the concentration of organic material in the water.

**Types of inaction**

As earlier mentioned, the discussion focused on nature of social action which contributed to the disappearance of the Lake under consideration. To complete the picture, however, it is necessary to briefly outline the other side of the coin: social inaction vis-à-vis the destruction of ecosystems. Some of the manifestations of human inaction that have equally contributed to the demise of Lake Alemaya include the following.

**Absence of water use policy**

Until recently, there was no coherent water use policy in the country, leave alone for Lake Alemaya. This deficiency has led to unregulated and unsustainable use of water and other precious resources. As indicated elsewhere, farmers around Lake Alemaya had been extracting the water of the Lake with no restriction using pumping engines and related accessories. This extractive exercise has contributed to the continued depletion of water from the Lake and its gradual disappearance. Recognizing the challenges posed by the absence of policies and regulatory frameworks, Daba (n.d.) argued that “… there should be a legislation whereby the land users are responsible including criminal liability for failure to abide by legal provisions concerning the rights and obligations in using the land.” This policy deficit affects the health and wellbeing of water bodies and forest resources constantly endangered not only by intensive, exploitative human action but also by equally frustrating human inaction.

**Absence of concerted efforts towards rehabilitation**

Despite sporadic attempts by the University to restore the
deteriorating Lake in the early to mid-1990s, no government agency made any coherent effort at preventing the continuous loss of water and destruction of the Lake’s environment. Moreover, until recently even the University was in no strong position to investigate the causes and consequences of the death of the Lake.

**Negligible efforts to regulate population growth**

In fact, the government has adopted a national population policy in 1993. However, its implementation at the local level was inadequate and could not maintain a balance between population growth and the available resources. Owing to religious and cultural factors, therefore, fertility rates in the region remain high thereby contributing to over utilization and depletion of resources in the region in general and in the areas surrounding the Lake in particular.

In general, these and other elements of inaction are responsible for the society’s failure in responding to environmental destruction through continuous, often greedy and unregulated human action.

**Recent efforts at restoring the lake**

Over the last few years, however, there have been some activities by Alemaya University, the Oromia Regional State, Eastern Hararghe Zone and other stakeholders to rehabilitate the Lake. The task involves watershed management, reducing soil erosion, removing the silt from parts of the Lake; and facilitating water inflow into the Lake. Perhaps, this is the right thing to do in order to reverse the damages of previous inaction; but it will be costly and takes considerable amount of time to restore the Lake to its original state. Already, the storage capacity of the Lake has been considerably affected by decade’s accumulation of eroded soil, growth of reeds and grass as well as different types of garbage and industrial/household waste. This would make the rehabilitation process considerably difficult if not impossible. Nevertheless, it is still worth trying since the restoration of the Lake will have considerable importance in ensuring livelihood diversification, reducing the negative impacts of climate change, and accelerating the reduction of rural poverty as well as rural urban migration.

**Conclusions**

Using the demise of Lake Alemaya as a spectacular case, this study examined the implications of social action and inaction on natural resources. Throughout, the Paper argued that as much as human action, embodied in population growth, intensity of resource extraction, and the expanding trade and capital accumulation as part of the globalization process cause environmental destruction, human inaction, too, contributes to the same process. The Paper also briefly touched upon the recent efforts towards restoring Lake Alemaya, though not to its original capacity, at least to the extent of refilling a portion of the Lake by undertaking different restorative measures including integrated watershed management. This, indeed, is good news and needs to be pursued vigorously by all stakeholders. However, such resurrection endeavours could be hugely expensive and could be compromised by competing priorities for scarce financial and other resources.

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