

Ethiopia's Environmental Condition: Today and Twenty-Five Years from Now

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I. Introduction

I would first like to point to a difficulty I ran into in the course of preparing tonight's presentation. The difficulty lay in determining with what issues to start out and what points to wrap up the presentation with. Because the issue of environmental problem is a fairly recent phenomenon in the world, I decided that I should start from the bottom of things.

In our attempt to explore our environment and the problems associated with it, our starting point should be that point in time when life began to emerge on our planet. Such an exploration must of necessity lead us into a detailed examination of the problems we Ethiopians currently face in that regard and wrapping up by suggesting some ideas and recommendations that may serve as solutions to those problems. This we must do if we are to properly realize that protecting our environment is the most fundamental responsibility that we should take upon ourselves and that the crisis that results from any neglect to protect the environment would be massive, with far-reaching consequences. Otherwise the process of understanding the problem will end up being riddled with gaps. It is my belief that, when we talk about environmental crises, we must set out, first of all, with a

knowledge of what the objective conditions in the past were like. Secondly, we must know what ecological imbalances occurred and what remained intact in the process. It is by so doing that we will be able to properly grasp the nature of the environmental problems we face.

I would like for all of us realize that humanity's technological activities to master natural processes would put it squarely in confrontation with a force of gargantuan proportion. That is precisely why we must explore, even to a small extent, the nature of this huge force. Accordingly, my presentation focuses on the following points:

- Defining environment;
- Exploring environmental problems around the world, including their causes;
- Exploring Ethiopia's environmental problems, including their causes;
- Detailing the measures so far taken, or those that ought to be taken in the future, to solve the environmental problems in the rest of the world as well as in Ethiopia, both in its position as part of a global system and in its own right as Ethiopia;
- Pointing out what the consequences could be if we were to continue the way we have been doing;

- Finally, wrapping up my presentation by relating the vision (better yet the wishes) I have of Ethiopia 25 years from now if we were to embark, without any further delay, upon the project of protecting, and caring for, Ethiopia's environment.

II. What is meant by environment?

Environment, when considered from a human perspective, includes inanimate objects, such as soil, water, air, and rocks, and animate beings, such as animals, plants, microscopic organisms, etc. It also refers to cultural phenomena, such as customs, morality, and tradition.

I am not going to discuss these aspects of cultural and social environment. I shall instead focus on those inanimate and animate, perceptible and tangible natural phenomena. One also needs to address the question of what humanity is as consisting of living beings. A person who has attained adulthood is made up of an average of 100 trillion cells, and of these cells, millions die every hour, while an equal number of new cells are generated to continue the life process of that person. While each cell is made up of millions of molecules, each molecule in turn is

made up of hundreds of thousands of atoms. And each atom is made up of varying numbers of electrons, neutrons, and protons. The molecules constituting the human organism perform billions of complex interactions every minute.

This living organism must establish a constant relationship with its surrounding (environment) in order to maintain its life. It needs clean water to drink, clean air to breathe, healthy and adequate food to eat.

Environmental degradation negatively affects human life by bringing about crises on these complex relations. In addition, the cells constituting the human body have a consistent division of labor, where any breakdown in this division of labor becomes a question of life and death.

Now, how much organization and how much coordination would be needed to supply these 100trillion cells with the energy (food) they need in the required amount and the fuel (oxygen—O₂) to oxidize that energy and enable those 100 trillion cells to do their share of performance in getting rid of the resulting waste is known more to a country's leaders, but especially to military leaders.

Now that we have understood this much about the human organism, let us turn to our inanimate environment and see what it is all about.

While the Universe came into being about 15 to 20 billion years ago, our Sun (Solar system) is said to have come into being some 4.56 billion years ago, and our planet Earth about the same time, too.

Earth has a close relationship with its neighbor/mother, the Sun. The measure of this close relationship between the two bodies is that the life that gradually emerged on Earth cannot be imagined without the Sun's proximity (without the warmth and the light it provides).

Environmental problems are thus seen and understood as such when considered from vantage point of life.

How did life emerge?

At this point, citing from the works of writers who have realized the issue will save us from bafflement. Let me put the idea in the words of Tsegaye Gebre Medhin, the leading poet in Amharic and repository of a rich poetic vocabulary:

*As the story, the tale, has it
Rising, running, falling, when the
balance is disturbed,
Under the authority of the unfathomable
force of Nature,
This complex of animals, of birds and of
the whole tribe of ants,
Comes into being to labor and to
struggle,
Only to perish before it comes to
consciousness;
Its birth, its life, and its death alternate
in a continuous process;
Could this be that mysterious Alfa and
Omega?
Could this be the Word that was in the
Beginning?*

(From a poem titled "Life [as] Butterfly")

Well, let us each give the interpretation we see fit to this conception of the beginning of life and be satisfied, for the moment at last, that nature, as we know it, came into being 3.5 billion years ago.

Three fourths of this life-endowed Earth is made up of oceans (salty water) and one quarter land mass, and is surrounded by an atmosphere measuring a hundred kilometers deep. The further high the atmosphere is from the Earth's surface, the thinner and rarer it gets.

The atmosphere enveloping the Earth consists of 78 per cent Nitrogen, 21per cent Oxygen, and Carbon Dioxide and other small gases not exceeding 0.03 per cent. Although the amount of CO₂ in the atmosphere is very small, it nevertheless plays a crucial role in sustaining life on Earth. It serves as a veil preventing the heat of the Sun from escaping once it gets to the Earth, that is, it retains the heat on the surface of the planet. This is known as the 'greenhouse effect'. It is like the air in a car with all its windows closed, which is warmer than the air outside. As long as this heat does not exceed the limit, it is beneficial to life. If there were no CO₂ in the atmosphere, the temperature of the Earth would have been reduced, on the average, by 35°C; this means that the temperature would have fallen to -21°C. The oceans would have been transformed into a huge rock of ice. Consequently, the Earth would have been lifeless.

In addition to the Sun, there are other substances that are essential for the sustenance of life on Earth: namely, water, air, and soil.

It is plants that help transform the Sun's light into life-giving energy. While the 'factory' that processes the air into tangible energy by using the Sun's energy is known as chlorophyll, the process is known as photosynthesis. In this process,

plants play an important role in keeping the balance in the ratio of Oxygen to Carbon Dioxide in the Earth's environment.

Chlorophyll, the factory that makes direct use of the Sun's energy, intakes CO₂ and outputs or generates O₂. While Carbon Dioxide is a poisonous gas, Oxygen is fast combustible.

In addition to this, plants take in the poisonous Carbon Dioxide, transform it into an integral part of their constitution by using the Sun's energy, and directly or indirectly provide food to the animal kingdom as a whole. Consequently, whether one enjoys meat or satisfies oneself with a handful of water, has a small taste of *shiro* or shares a piece of bread, brews *t'ella* or makes mead, the source for all these are plants.

Revisiting the Sun from another perspective

The Sun's heat evaporates the waters of the oceans, the lakes, the rivers, in short, the water and the humidity on the Earth's surface, transforming it into vapor in the form of clouds. The clouds in turn are impregnated with rain and in their movement over the surface of the Earth become cold, in the process transforming the vapor into liquid, which they deposit on the Earth's surface as rain, which ensures life's sustenance on Earth. Rain replenishes the waters of the oceans, lakes, rivers and the underground water reservoirs.

While the source of the crude oil and fossil fuel stored in the bosoms of the Earth are plants, the basis for all this is the Sun's energy. Consequently, the Sun is the sole

source of energy for all activities and processes occurring on the surface of the Earth.

Water is one of the inputs essential for the sustenance of life. While the volume of water on the Earth is 1,400 million cubic meters, it is only 2.5% of this amount of water that is salt-free, and it is only this amount that directly goes to benefit humanity.

Water measuring an average depth of 1.4 meters evaporates annually from a 505,000-square kilometer ocean surface. In addition to this, 72,000 cubic kilometers of water evaporates from the Earth's surface. The water evaporating from the ocean and the Earth's surface is transformed into rain, of which 119,000 cubic kilometers falls on the Earth's surface and 458,000 cubic kilometers fall into the ocean. It is in this complex network of processes that life is rooted.

The Earth, consequently, is a stage on which the complex processes of Nature are played out in keeping with the mutual balance obtaining from their interaction as circumscribed by Nature's laws.

In the context of the interaction of natural phenomena, the only thing that an excessively fast pace of change brings about is destruction. The balanced relationship of phenomena in life is so composed that it cannot sustain the stresses of speedy change. Life is a treasure that came into being through a process combining a careful observation of the environment with keeping that process in accord with the existing supply of biodiversity, a process in which subtle changes take place in biodiversity resources

and experiments are carried out for new findings and, where that has not been possible, destruction has ensued. As long as the changes occurring are evolutionary, life has a fundamental capacity to accommodate those changes. What, consequently, environmental degradation results in is unexpected rapid change that life cannot sustain.

Moreover, when any living organism, whether plant or animal, disintegrates the end result of the process is the breaking up of the organism into its respective components of the atoms and molecules that were responsible for the coming into being of that organism in the first place.

For instance, when a leaf drops from its parent tree and decomposes and disintegrates through the agency of microbes, the end result or outcome of this cyclical process is the liberation of Carbon Dioxide, Nitrogen, etc. In this manner, the relationship between objective phenomena is kept in balance. That is perhaps the source for the saying that there is nothing new under the Sun.

Consequently, it is when this balanced relationship and interaction between objective phenomena, the balanced composition of life and of nature is disturbed, when the balance tips any which way, that environmental crises occur.

Now that we have grasped this much about our environment, we can now move on to concrete situations and talk about environmental phenomena.

3. Global Environmental Crises and their Causes

In this presentation I shall only address those environmental crises for whose occurrence humanity is said to be responsible.

3.1. Developing environmental awareness

All other living organisms that share the earth with us for their livelihood do so within the framework of the environment, and in a harmonious relationship with it, in accordance to the conditions and the limits the environment imposes on them. What distinguishes human beings from these other organisms is their capacity to control the environment and to turn into a source serving their interests. Consequently, we know and understand Nature not in and of itself but from the vantage point of the resources it provides for our livelihood.

The measure of the humanity (human-ness) of a group of human beings (people) is the extent to which that group (people) has been able to bring its environment under its control. People that have been able to benefit considerably from their environment are thus considered advanced, while those that have failed to bring their environment under its control will be considered as having failed to emerge victorious over the capricious forces of the environment, that is, they are considered backward.

The important point in this process is knowing, realizing one's capacity

and limits. Where is the borderline beyond which human beings cannot (or should not) go in their attempt to control the environment and make it serve their interests? And at what point does the environment begin to resist humanity's advance against it? These are issues to think about. Realizing and recognizing the extent to which we can go and when we can go as far as we do will save life from unexpected destruction.

The techniques and knowledge humanity achieved over the last 150 years, the depth of its awareness, the growth of its civilization and the pace with which it developed have all been very fast, compared to its progress during the preceding period.

The capacity to exploit the resources of the earth has grown; although the people living in the prosperous countries of the world constitute only one-fourth of the world's population, the energy and natural resources they use constitutes 80 per cent of what the world's population uses. The energy consumed is in excess of what is actually required.

For example:

The food that an American consumes at any one time is transported an average of 2000 kilometers before it is served at the American's table, whereas, by contrast, the food an Ethiopian farmer consumes at any one time can be procured from a distance only a few meters away. Preparing the food and cooking it in a microwave stove requires 10 times more energy than cooking it directly over fire.

To procure food vegetables or flowers off-season requires 94 times more energy than to do so during the season in which they are produced. Whether in-season or off-season, the developed countries have, thanks to the progress they made, appropriated the right to get whatever they want whenever they want it. The residue of the energy they use has, however, become a liability to all of us.

But when did we realize that such crises have emerged around the globe? And what exactly are these crises?

Although there was talk about the existence of environmental problems/environmental degradation much earlier, the problem was officially recognized and brought out into the open around the middle of the last century. The extent and magnitude of the problem came to light 50 years ago through a book a chemist, Rachel Carlson by name, wrote in 1962 (Gregorian Calendar). The title of the book is *Silent Spring*. The title, I assume, may have been meant as a metaphor for the silence of the environment, or, generally, to indicate the suppression of the voice of life.

The acid rain that poured down in Sweden in 1972 (G.C.) has helped draw the world's attention to the problem of environmental degradation more than ever before.

A photograph taken from space in the 1980s (G.C.) clearly demonstrated that the equatorial forests had diminished in size. The heat wave of 1988 (G.C), particularly as it occurred in Europe, threw the population of Europe into fear and anxiety. In

addition to all this, industry-related problems that occurred at various times became increasingly worrisome.

For example:

The explosion of a pesticide factory in India and the consequent loss of many lives, the nuclear power plant accident in 1958 in the Urals, and at Chernobil in 1986, the contamination of the Great Lakes in the United States were portents of bad things to come.

Because of these and similar other occurrences, the people of the world began paying attention to the problem of environmental disruption.

Although the phenomena we are talking about were not new in their substance, the proliferation and extent of the problems they created has served to foreground their magnitude. The leaps made in science and technology have clearly demonstrated the complexity of the problems.

3.2 What are the global environmental problems that have occurred heretofore?

Although, for convenience, we are talking about environmental crises in global or national terms, to make the issue easy to grasp, the consequences of the degradation transcend both national and international borders. For example, the radiation leak due to the damage of the nuclear power plant at Chernobil was first recorded in Sweden, and Sweden it was that first disseminated the news of the tragedy to the world.

The major environmental problems that occurred at the global level are the following:

1. Overuse of natural resources and depletion of natural forests;
2. Erosion of fertile soil and proliferation of desertification;
3. Depletion of potable (salt-free) water; pollution of the available water resources, posing health threat to life, especially to children;
4. Pollution of the environment due to chemical emissions; defoliation of plants by acid rain;
5. Degradation of water shores (beaches) and the subsequent destruction of plant and animal life therein, due to shortage of clean water;
6. Pollution of seas by poisonous chemicals (ocean liners dumping their waste in the seas; seeping of crude oil due to accidents)
7. Alteration in the tidal movement of the oceans' currents;
8. Change in climatic conditions;
9. Depletion and perforation of the Ozone layer protecting the earth;
10. The inappropriate handling of waste and poisonous chemicals;
11. The incursion of alien plants and animals into the environment;
12. Accumulation of poisonous chemicals, such as DDT, in living organisms (plants/animals);
13. Depletion of ocean/sea fish resources.

3.3 These are some of the problems; we now need to look into their causes.

3.3.1 Increase in the amount of Carbon Dioxide in the atmosphere:

In recent years, the amount of Carbon Dioxide in the atmosphere has increased. The main reason for this is the fact that the energy sources people use for their everyday-needs are coal, petroleum, and kerosene, which, in the process of their combustion, emit Carbon Dioxide.

The problems resulting from the increase in the amount of CO₂ in the atmosphere are many. One of these problems is:

Increase in the Earth's temperature:

Currently, an increase in the Earth's temperature, such as has never been witnessed before, is being recorded. Although only resulting in the deaths of a few children and elderly people, there are several other problems indirectly caused by the heat.

Example: the melting of polar ice (glaciers):

The water accumulated at the two poles of the Arctic and the Antarctica in the form of solid ice is continuously melting, resulting in the increase in the water level of the oceans and seas.

If the Earth's temperature continues to increase at the rate it is doing now, 200 million people in Southeast Asia, the southeastern part of North America, and Europe will be

forced to evacuate the areas they live in and migrate to other areas in the current century, for the simple reason that the areas they inhabit now will be flooded [or sub-merged in water].

Climatic change:

The recently witnessed climatic change, nicknamed *El Niño*, is believed to have occurred due to the increase in the Earth's temperature. When the temperature of the surface of the oceans that cover an area of many thousands of square kilometers increases, so does the temperature of the surrounding atmosphere. When the hot air moves into the atmosphere covered with cold air, it drags or pulls the water below with it, resulting in the speed of the water's current.

However, because the speed of the air, that is, the wind, is faster than that of the water's current, and although the two dance in tandem, while the water dances to the beat of a waltz, the air prances about to the speedier beat of the tango. As the Amharic saying has it, the result of such a marriage of incompatibles is the occurrence of environmental crisis, further resulting in storms and hurricanes on water surfaces, and tornadoes on land. The number of lives and the amount of property destroyed as a result is tremendous. This phenomenon is known by different names, depending on where it occurs as well as on its specific nature: e.g. tornado, hurricane, cyclone, etc. Conversely, the crisis resulting from the reduction in temperature of the waters of the oceans is known as *La Niña*.

Resurgence of diseases:

When the temperature of the Earth's

surface increases, the temperature of lakes and pools of water on the surface of the earth increases, resulting in the multiplying of mosquitoes, which would otherwise not be able to multiply in water with cold temperature, resulting in the proliferation of malaria.

Because the floods caused by *El Niño* combines potable and dirty water and, as a result, damages environmental sanitation infrastructure, the food and water consumed becomes contaminated causing cholera in the process.

Drought:

Climatic change has tremendous effect on agriculture. When the dry season is extremely hot, it reduces the moisture in the soil, and when seeds are sown, because the soil lacks the necessary moisture, the harvest will not be a productive or successful one.

When the soil is deprived of its moisture, it means that drought follows in its wake. When this phenomenon occurs repeatedly, the place/country/vicinity in which it so occurs is transformed into desert.

When drought occurs, forests become easily vulnerable to the hazards of fire. This phenomenon has been witnessed as prevalent in Europe only recently.

Some researchers claim that the occurrence of El Niño and that of drought are closely related. This is so because, the rain that falls in some areas as a result of the occurrence of El Niño increases in volume, so much so that the amount of rain expected to fall in other areas decreases. As the Amharic saying goes, Allah [God] can only

make one prosperous by taking from another. So with *El Niño*, in the case of which the drought in some areas results in flood in other areas.

3.3.2 Air and water pollution by chemicals

The residues of the chemicals that we use for our every-day needs, for producing grains or for sanitation purposes, as well as those of the fuels we burn, have tremendous, negative health consequences for animal as well as plant life. It is intimated that the increase in the number of people affected by asthma and other forms of allergy is a result of the pollution of the atmosphere by carbon emissions from motor vehicles. And the victims predominantly affected by these allergies are children.

Especially, the chemicals that we use as fertilizers and insecticides are responsible for rendering the salt-free water that is so essential for the sustenance of life useless.

3.3.3 Depletion of the atmosphere's Ozone layer

The chemicals collectively known as aerosols, which we use in refrigeration, as air fresheners and as insecticides, etc., have been known to be responsible for the tremendous damage they cause. They have contributed to the depletion of the Ozone layer that protects the Earth from harmful rays infiltrating the atmosphere from the Sun, and they do so by transforming the Ozone layer into something else through a process of combination of chemicals. This Ozone layer is now seen at one point with a considerably big hole in it. This

means that the harmful rays directly infiltrating the atmosphere without any protection reach the Earth, resulting in considerable disruption. While the major damaging ray is that known as Ultraviolet-B (UV-B) Ray, it has been known as responsible for the increase in skin cancer and blindness.

3.3.4 Occurrence of new diseases

New diseases are occurring in the world at different times. These diseases are said to have occurred when human beings encroached upon animal territory.

Obviously these disease-causing germs were not transported to the earth by some comet from outer space. They are indigenous to the planet. However, unless some disruption occurs in the environment, the germs do not penetrate the human body. The germs, which normally exist as parasites in animals, invade the human body when an unusual contact occurs between those animals and human beings, resulting in many deaths to human beings, something that is still happening at present. It is said, for example, that Ebola and HIV/AIDS are calamities transmitted to human beings through such contact.

3.4 Measures Taken to Alleviate the Problems

There are certain groups of scholars that believe that, if humanity continues to behave and act the way it has been doing so far, its existence on the planet would be questionable. These scholars are of the conviction that humanity must embark on a new path of

development if it should not risk extinction.

On the other hand, there are those who believe that adversity is the source of solutions to problems, so that when problems loom large on the horizon, the appropriate solutions follow in their footsteps. The human brain cannot be daunted by such occurrences.

Be that as it may, since taking precautions has its advantages, international agreements have been drawn, programs prepared and projects designed to lay down new strategies for the utilization of the Earth's resources and to alleviate the damage incurred so far on the environment (such as air/water pollution, global warming, etc.). International institutions have been set up to see to it that the agreements, programs and projects are implemented, some of which have been acted upon.

Examples:

Among the Conventions:

- **CITES: A Convention drawn for the protection of endangered flora and fauna;**
- **Ramsar Convention: A Convention for the protection of wetlands.**

Among the International Institutions: United Nations Environmental Programme.

In addition to this, developing countries have been urged to draw policies, regulations and strategies, and programmes for the protection of the environment, especially for the prevention of further desertification, the protection of biodiversity, and for reforestation. The developed countries have made

big contributions to cover the cost of preparing for such projects.

Reforestation programmes in the developing countries are being undertaken essentially to reduce/absorb the Carbon Dioxide emitted by the developed countries.

Moreover, it is believed that six major issues must be addressed at the global level. The issues are:

1. Making efforts to prevent further population growth around the world, to stabilize the population at the level it currently is;
2. Protect and nurture farm plots;
3. Cover the Earth's surface with vegetation;
4. Proper use of the Earth's resources; for instance, reduction of disposable trash, such as waste paper, plastic, etc.;
5. Energy conservation; regulating energy consumption; knowing the limits of our capacity;
6. Developing the culture of using solar, wind, and geothermal energy sources, instead of using underground energy sources, such as oil, and coal.

4. Environmental Problems in Ethiopia: What are they?

4.1 Profile of Ethiopia's Natural Resources

In order to better understand Ethiopia's environmental problems, one would do well to have an idea of the profile of the environment. The highland parts of Ethiopia have an elevation of 1800

meters above sea level, and their climate is suitable for living. While the highlands get an annual rainfall of 700-2200 mm, the lowlands get an annual rainfall of 200-700 mm. There are also regions that get no rainfall at all. In order to grow crops and plants, a region with an annual rainfall of at least 700 mm is required.

The area of the country's arable land has been estimated varyingly (indicating such wide differences as 12-60% of the country's total land mass). However, when we take into consideration the estimates provided by the Ethiopian Environmental Protection Authority, 51% of the land mass is believed to be cultivable, while the remaining 49% is said to be uncultivable.

Forty years ago, 3.37-4.4% of the country's land mass was covered with dense forest. During that period, also, the area covered with bushes and undergrowths was estimated to have been 22% of the country's total land mass.

It is known that Ethiopia has huge water resources. While 0.66 % (7500 square kilometers) of the land is covered by lakes, the country has 12 major river basins.

The total volume of water handled by these river basins annually is estimated to be 111 billion cubic meters. It is, moreover, estimated that the country has no less than 2.56 billion cubic meters of underground water. Of the water draining in the major river basins, 75% (82.5 billion cubic meters) goes to benefit neighboring countries. In other words, the annual per capita contribution of

water to these neighboring countries of Ethiopians amounts 1250 cubic meters (125,000 litres).

This draining water resource, combined with the country's topography, is believed to be the country's major wealth, since it represents a huge source for hydroelectric power generation. The slopes of the basins are also considered big resources. We all know the value of salt-free water for the development of agriculture.

Biodiversity resources (plants and grains):

Ethiopia has a huge pool of biodiversity. The plant biodiversity especially provides a rich source for the population's medicinal needs. Ethiopia also has an equally huge pool of biodiversity in grains. An example or two of the uses of biodiversity will help clarify the importance of the resources. A barley species found in Ethiopia has saved the barley species used in California's breweries from extinction. A barley species found in the Simien Shewa area in the middle of the last century was found to be resistant to a virus that almost destroyed California's barley production. The gene that helped the barley resist the virus was extracted from the Ethiopian barley species (biodiversity resource) and was grafted onto the California barley species, resulting in a healthy, California barley, thereby, saving the State's brewery from sure bankruptcy. This gene has, consequently, become the main agent in the brewery's capacity to make an annual profit of 156 million US dollars.

4.2 Ethiopia's Environmental Problems

If 85% of Ethiopia's population, which lives in the rural areas and is engaged in farming and cattle breeding, cannot feed itself, we can simply decide that the magnitude and nature of the problem has no indicator and forget the whole thing.

However, we shall be forced to look into some of the details. The main and visible environmental problems in Ethiopia, as well as in other developing countries, are the following:

- Population increase;
- Soil erosion by water and wind;
- Degradation of soil fertility and decrease in productivity;
- Deforestation and soil exposure;
- Inability to improve the contribution of the agricultural sector to growth; the sector's stagnation and, in fact, degeneration;
- Lack of appropriate policies, strategies, and regulations, or inability to implement those that are available.

In order to even better understand the problem, we need to probe into the nature of rural life in Ethiopia.

What does the life of the majority of Ethiopians look like?

Because of the poverty it wallows in, the majority of the country's population relies for its energy on wood and/or cattle dung; on forests for its supply of medicines; on rivers and springs for its water supply; on wood cut from forests, grass mowed from the fields, and mud taken from the soil in order to

build its huts; on cotton and hide for its clothing. The land on which it produces its food is farmed year in year out without any break; the animals it uses either for farming or as food sources sustain themselves through their own effort by grazing the surrounding lands, with no care and protection from anywhere. Because of such poverty, the majority of our people completely rely for their livelihood on what nature provides. Consequently, the plants that are cut down, with no replacement at all; the land that is being farmed, without any break, year in year out; the domestic animals that breed without any human care and protection; the wildlife hunted down without any compassion; all these constitute a complex of reasons for the country's environmental crisis.

Let us look into some of the concrete problems in some detail:

4.2.1 Farm and soil management

The majority of Ethiopian farmers inhabit the *dega* (highlands) and the *woinadega* (mid-highlands). The farming technology they use and the types of crop they cultivate render the land vulnerable to erosion both by rain and wind.

The water that drains in this manner from every plot of land turns into streams and rivers flowing away with a full load of fertile and rich soil. When the soil is thus washed away by flooding rivers, it is not only the soil that the country loses, but also the microbes that sustain the fertility of the soil. Because of shortage of farming land, the slopes of the river basins as well as those at the foot of mountains and hills are cultivated thereby contributing to the washing away of soil from farms.

4.2.2 Depletion the Earth's vegetation cover

Trees are cut down, without replacement, for fuel, for the construction of houses, for making farming equipment, etc.

4.2.3 Population increase (in relation to the sectors people engage in)

In reality, increase in population size does not result in environmental crisis in and of itself. If, however, a given community of people is hostage to poverty, it will negatively affect the environment. To the extent that the size of the population increases, the demand for additional farm plots, huts, and fuel wood increases. This situation will result in the depletion of the country's biodiversity resources. If the livelihood of the majority of the population depends essentially on natural resources accessed from land, every time the population increases, to the same extent will increase the grumbling and lamentation in every household, as well as the number of mouths that go unfed as the days go by.

Let us have a closer look into the ways of the country's rural life.

When the number people in rural communities increases, the commodity supplied to urban centers will be fuel wood instead of grains. The grain the farmers produce will not even be sufficient for their own consumption. The fuel wood and charcoal the rural population supplies to the market is not a by-product of trees that they themselves have planted, but gathered and cut down from natural forests. The source for the rural

population's cash needs will be naturally grown bushes and forests. The energy sources for the farmers' own cooking needs will be cow dung, manure, maize stalks and wheat stalks. If the grain stalks, dung and manure that are supposed to farm inputs are used as fuel instead, the fertility of the soil and the land will degenerate, resulting in the decrease of land productivity.

When the bushes and forests available in the different areas are completely cleared and depleted, the fuel supplied in the market will be animal dung instead of wood. The dung that ought to have been used as fertilizer will become the major source of the rural population's cash needs. When drought occurs while the rural population is in this state, the people will be exposed to the lashes of hunger. The farmers that already are shoulder-deep in the mire of deprivation will altogether sink in that mire when drought occurs. When the size of the population increases, to the same extent will the land area needed for farming expand. The land area on the slopes or river basins and the wetlands adjacent to water bodies, which were not supposed to be cultivated to begin with, will be cleared and used for farming. Grazing land will be crowded. At present, grazing land for cattle in the highlands and mid-highlands of rural Ethiopia has been greatly reduced. As a result, domestic animals do not get adequate fodder, in which case both their productivity and energy will diminish.

According to the estimates of experts and professionals in the field of natural resource management, by the year 2004

(G.C.), all grazing land in the highlands will be fully appropriated for cultivation. This area is domicile to 70 percent of all domestic animals. Any additional grazing area cannot be made available. Similarly, in the year 2017 (G.C.) all arable land in the highlands and mid-highlands will be cultivated. After that there will be no cultivable land in these regions of Ethiopia.

4.2.4 Land tenure insecurity

Because the Government runs the administration of rural land in Ethiopia, the farmers, who are the direct beneficiaries of the land, do not feel secure about their holdings. There has been much debate, and various positions have been taken, on this issue. However, the problem requires immediate solution.

Although, in some regions, better opportunities have been created for farmers to feel secure about their holdings, it has become clear that there still are some situations that need to be improved.

4.2.5 Land use

Due to the absence of regulations and mechanisms by which to prevent the cultivation of river basin slopes, lack of any effort to protect and nurture farm plots, lack of a system as to what type of particular grains and food plants should be produced/sown, and where they should be sown, it has not been possible to properly manage and use the country's natural resources, including, of course, land.

4.2.6 Air and water pollution

The fuel that we use in each household for cooking pollutes the

air inside each hut. Because of the polluted air as a result of the smoke emitted by the wood and dung fuel, many children have fallen victims of lung diseases, and will continue to do so.

Because people are left free to relieve themselves of human waste, such as excreta and urine, at any time and any place, these waste matters have been responsible for the spread of many contagious diseases. Because, especially, human excreta and urinary waste stand a greater chance of polluting our potable water, children will be exposed to dysentery. Because of the combined effects of this and other similar situations, 170 children for every 1000 births will die before they reach the age of five.

4.2.7 Damages caused by development activities (projects)

Development activities (projects) implemented at different times have caused damages to the environment. The main source of the damages is the fact that the projects were undertaken without the appropriate feasibility study.

In order to better understand the situation, let us look into the damage caused by the development project undertaken at Abijata.

Because of the production of Soda Ash at Abijata, the type and amount of the chemical contents of the water has been altered. Because of this change, some of the small plants and animals inhabiting the waters of the Lake have completely disappeared, while others have diminished in number. The number

of fish thriving on these plants and animals also has diminished. Consequently, the number of fish-eating birds has diminished. Lake Abijata, which was estimated, according to the bird count done 30 years ago, to be home to 12,000 pelican couples, thousands of fish-eating birds, flamingoes feeding on smaller fish and plant life, now finds itself in a very tragic situation. It is now said that thousands of pelicans and flamingoes have migrated and settled in Kenya.

4.2.8 Controversial solutions

One dominant issue here in Ethiopia is that of eucalyptus. Many a debate and discussion is still going on regarding the advantages and disadvantages of the eucalyptus tree. It was in the belief that eucalyptus will solve the problem of shortage of fuel that Emperor Menelik had 15 eucalyptus species imported from Australia in 1896 (G.C.). Of these 15 species, only two are seen in several regions in great numbers. While one group is of the position that, because a single, well developed eucalyptus tree consumes 400 litres of water a day, it will contribute to the depletion of the ground water reservoir of the surrounding environment, another group argues that, but for the fact that 'Mother' Menelik brought eucalyptus, presently the people of Lasta, Agame, Gayint, Berenta, and Bulga would have honed their axes and felled every tree of the Congo jungle. That eucalyptus causes damage to the environment is not a new revelation. Because of the bad news that eucalyptus depletes the water in the area it grows, Emperor Menelik had ordered every eucalyptus tree to be uprooted and disposed of.

But that was not to happen, for the tree's fundamental advantage had an edge over the Emperor's orders. I think the secret lies in how to cultivate eucalyptus. If one were to take into account where each tree is to be planted, at what distance from another plant, and when it will be harvested, the damage, if any, the tree would cause would be minimal. Whether we like it or not, at present, when considered from the vantage point of the utility the tree provides, eucalyptus still remains the exemplar as far as trees go. All farm equipments, the roofs, walls, doors of houses, beds, chairs, fuel, all these and more are products of the eucalyptus tree.

5. Solutions to Our Environmental Problems

5.1 Global Problems

The effort to solve environmental problems at the global level is made on the basis of international agreements and conventions. All global environmental problems are problems also of Ethiopia.

Let me leave the question of providing solutions to global environmental problems for the international agreements and conventions to take care of, and let me turn to the problems we face here in our country.

5.2. Solutions to environmental problems in Ethiopia

5.2.1 Implementation of policies, laws, etc.

Ethiopia has policies, laws, etc. for the protection of its environment, which is an encouraging sign. The

major ones that have been implemented so far are Environmental Protection Policy, Biodiversity Policy, Drought Prevention and Management Policy, Energy Policy, Science and Technology Policy, etc.

In addition to this, however, Government officials have to pay more attention to the implementation aspect and make sure that each concerned Government institution fulfills its mission in this regard. The tasks waiting to be undertaken are the following:

- The Environmental Protection Authority should design policies and enact laws, adopt and implement these policies and laws, gather data and conduct research on the environment, monitor environmental pollution, and keep records on environmental conditions.
- The Ministry of Agriculture has to fulfill its duties in the areas of land tenure, animal and plant life protection, use and management of grazing lands and land and water resources.
- The Ministry of Education should give more attention to environmental issues and problems and ensure that they are incorporated in the curriculum.
- The Ministry of Information has to make efforts to ensure that the people have gained the necessary environmental awareness.
- The Ministry of Industry should monitor the emission of industrial waste and ensure that

it is properly and safely disposed of.

- The Ministry of Health should do more to ensure that environmental sanitation is well taken care of.
- The Ministry of Labor and Social Affairs should ensure that dangerous chemicals are properly stored and periodically monitor their condition.
- Insecticides, on which the country's financial asset has been invested, but which, ironically, have proved to be health hazards, should be given special attention.
- Ensure that the policies currently being designed by the Government are implemented, among which the following:
 1. Land use
 2. Fish resource
 3. Cattle resource
 4. Forest resource
 5. Wildlife resource
 6. Soil resource
- The Government should enact additional policies, as necessary.
- Regional States have developed their own environmental and environment-related policies.
- Moreover, several laws have been enacted at the Federal level: Environmental, Land, Wildlife, Water resource use, Mining, policies, etc.
- The Government must see to it that these policies and others to be developed are implemented at the Federal level and encourage, at the same time, Regional States to do likewise in their respective regions.

5.2.2 Programmes

Unless any programme is designed in terms of time and extent (for example, unless one makes sure that X number of trees will be planted on Y area of land at Z period of time), the programme will not be successful. I would like to cite a few examples in this regard:

Environmental rehabilitation campaign

At a National Conference held towards the end of Sene (beginning of July) of this year, Ato Gedeon Asfaw had mentioned the importance of developing a marshall plan in order to solve Ethiopia's environmental problems. He had also urged for the translation of the plan into a programme of action and for the implementation of the latter.

- First of all, there is a need to rehabilitate and reorganize development projects that were set up but were not implemented, whether inadvertently or otherwise, and put them to good use (e.g. Alwero Dam, Beles Agricultural Project, etc.).
- Secondly, set up a national service programme and organize every physically capable Ethiopian, but especially the youth and soldiers, and deploy them on a compulsory national campaign of reforestation and soil protection on a long-term basis.
- Finally, ensure the implementation of environmental rehabilitation and protection strategies.

While I full agree with all the suggestions of Ato Gedeon, I, however, believe that it would be more appropriate for the project so envisioned and desired if we replaced the nomenclature 'Marshall plan' with that of 'Gedeon's Plan'.

Tradition-based programmes/projects

Developing a special system, through which individuals are given indigenous plants to cultivate extensively (for example, as was recently started in Simien (Northern) Shewa, by way of adopting plants). Especially convincing urban dwellers to adopt indigenous trees and cultivate them in their respective vicinities; one year after such a project has been implemented, conduct a follow-up programme to see what became of the adopted trees. Finally, make efforts to ensure that these and similar other tradition-based activities become a national culture.

Backyard gardens

Each family with a landholding should be encouraged to cultivate a backyard garden and meet its vegetable consumption needs. In order for families to gain awareness about biointensive gardening, special biointensive gardens should be set up and serve as both training and production sites. The knowledge thus gained can be applied in people's individual backyard gardens. For starters, the Biofarm at Intoto can serve as a good example.

5.2.3 Budget allocation for natural resource protection and development

No sufficient government budget has ever been allocated for the protection of natural resources (which has been one cause of the country's recurring drought).

For example, between the years 1992 and 1999 (G.C.), Ethiopia had obtained over 5000 million dollars through loans, donations, debt relief, etc. Of the amount allocated for different activities and projects, 46% went to health and education, 19% to transportation and communications, 11% to the agricultural sector, 7% for hydroelectric power generation, 6% for industrial development, and 4% to the financial sector, while there was no budget directly allocated for natural resource development.

According to the estimates of experts and professionals in the field, unless Ethiopia allocates an annual budget of 150 million dollars for natural resource development over a long period (about 50 years), her natural resources will be depleted in a short period of time. The main cause of this is the unrestricted/unchecked expansion of the land that is brought under cultivation.

Conversely, if Ethiopia allocated an annual sum of about 200 million dollars, the constant move further afield by farmers in search of additional cultivable land would cease, and it would be possible to cultivate additional grain on the already available land. Consequently, the depletion of natural resources will be checked and, eventually, cease altogether. It is further estimated, on the basis of

the foregoing, that this project can be realized within a span of a generation.

5.2.4 Appropriating lowland wetlands for agricultural development

We need to undertake feasibility study and appropriate Ethiopia's lowland wetlands for the cultivation of various grains. In order to achieve this, the Government should build communication and other infrastructure and invite investors to develop the wetlands. In this process, the Government is expected to give the necessary support and incentives to such investors. Above all, in this process, the availability of health services plays a crucial role.

5.2.5 Liberating the rural population from its chronic attachment to the farmstead

In order to achieve this, opportunities must be made available for the rural population to make a living in various professional sectors.

5.2.6 Providing our pastoralist fellow-Ethiopians with special assistance

Developing and implementing policies and programmes that would help improve the productivity of the cattle the lowland pastoralists breed. One of the programmes should be first developing a strategy by which the pastoralist producers sell their products and become beneficiaries of same.

5.2.7 Protection of wildlife and parks

Improving the conditions of the existing wildlife parks and making them suitable for the protection the country's wildlife biodiversity, in addition to which the necessary preparations must be made to make them better available as tourist attractions. Getting into agreements with neighboring countries to look for ways to make the parks better sources of income than just as sites for wildlife watchers and game hunters.

5.2.8 Involving all stakeholders in development initiatives

The Government must involve all stakeholders in all development activities, beginning with the time of their inception.

In fact, since development ideas should be generated by the beneficiaries themselves, where it is possible, all that the Government should do is provide the necessary support. In the event that problems arise in the process, they should be solved through dialogue and discussion. What the Government's 'We-know-what-you-want/need' stance and its adamant position of 'only what I say/think works' produces is, on the one hand, citizens who respond only when they are asked, and even then with permission, and who have no self-confidence and, on the other, rebellious citizens who have had enough of the Government's encroachment upon their rights. The stances assumed by both have nothing to contribute directly and positively to development.

5.2.9 Miscellaneous issues

Areas that have suffered extreme damage should be made off-limits both to human and animal encroachment and be rehabilitated. Such measures have resulted in promising signs in some areas.

Conditions should be created in which domestic animals can be fed and nurtured at stationary locations.

6. What Would Ethiopia Look Like in 25 Years If the Current State of Affairs Continued?

If we tread along the same path we have been following so far, what awaits us twenty-five years from now is disaster, and disaster alone!

6.1. First of all, Ethiopia, as we know it today, may not wait for us then. The altercation and infighting that we now witness, which is a result of deprivation, could assume a serious dimension and may lead to the country's disintegration. Each region, basing itself on ethnicity or locality, wants to be sole beneficiary of the resources it has, refusing to share it with anyone else, and such an attitude could be organized around little separate states.

6.2. In the year 2017 (G.C.) there will be no more land in the highlands to support agriculture. The majority of the farmers then will either be landless, or the plots they cultivate will be too small to support any meaningful cultivation. Even in the latter case, the food the farmers produce will not be enough even to feed themselves, for they won't be able to produce even half of what they need to stay alive.

Because, in such a scenario, farmers will migrate to urban centers, towns and cities will be flooded with destitute, jobless people, the majority of which will be the youth.

Similarly, there will not be any land where animals can be taken to graze thereby, leading to the depletion of the available cattle resource, as a result of which there won't even be any oxen left with which to plough. Farmers will, consequently, be forced to hoe what little land they have left. This represents a regression in technological terms. Because both the culture of and energy for hoeing will not be there, the yield of the labor thus invested will be almost nil.

6.3 If the rural population in these areas can move about freely, the farmers will migrate to the south in great numbers. And as they are won't to do, they will render the areas to which they migrate exposed environmental hazards. Thus, in less than 25 years, the land in the south will be as bleak and barren as that in the north. The dominant proportion of the country's land mass will assume the barrenness that we witness in today's Wollo and Tigray.

6.4 The available biodiversity of the country, which could have saved many lives and yielded much wealth, will diminish over an extended area.

6.5 In this complex process, the majority of Ethiopians will become destitute beggars—if there is anyone left to afford alms, that is!

6.6 Because of destitution, all poor people will be unable to withstand

the effects of diseases. In addition to this, the unclean environment will render them vulnerable to further infection by other diseases. Many people will be infected with HIV/AIDS and succumb helplessly to death in due course. The pandemic will take its greatest toll among children.

6.7 All the jobless youth will resort to indiscriminate stealing and robbery, just to make it through a day. This process will lead to the loss of many lives.

6.8 Whoever happens to have some property left in their homes will live in permanent anxiety and harrowing fear as prisoners in their own houses.

It is thus that we currently find ourselves at the edge of a whirlpool. If we do not somehow manage to escape the dangerous, sucking inertia of this whirlpool, we shall, once and for all, be dragged into it, never ever to return.

7. What Could Ethiopia's Environment Possibly Look Like 25 Years from Now?

If the solutions suggested above are implemented without further procrastination, we can hope to see the light at the end of the tunnel. What however we must bear in mind, however is that there is no such thing as development in any isolated area of life. Development is all embracing and comprehensive. To be sure, natural resource development and protection is but a fantasy where people are starving. Unless the economy is developed, the campaign to rehabilitate the

country's natural resources will not succeed. Unless the prospect in the here-and-now is promising, tomorrow is but a far-off whimsy; it will prove extremely difficult to think about where one's food will come from tomorrow. In order for us to be able to rehabilitate and develop our natural environment, the country's economy must grow first. And in order to achieve this, a considerable amount of foreign capital should be allowed for investment in Ethiopia.

If sufficient effort is made to create an auspicious environment for foreign investment, it is possible to attract quite a considerable size of capital to Ethiopia.

What I am going to itemize below are based on good wishes, but they also are visions that can be realized. If we so choose as to call them prophecies, then they are prophecies only in a cauldron of optimism constituting only the good. But I also raise them as wishes.

7.1 I believe that there will be in place equitable governance, a system of governance that will trail the blaze of hope and optimism for a new generation, a new generation liberated from the desire to emigrate elsewhere, a generation, that takes its concerns as the concerns of us all, a generation for which an auspicious environment to think and believe so has been created, all of which determine the outcome of our efforts. Conversely, basing my vision on Fekade Azeze's insightful writing, I have decided to believe the following two types of Ethiopians will not be here 25 years from now. The first one, extracted from a poem titled "Among the

Gallant Cavaliers of Addisaba," is the following:

O! My muscle man of a Rambo,
my cavalier of Addisaba
Fearful of no one,
Climbs into his car, turns on his
music to a thundering blare
Opens the windows left and right;
Cuddling his lady love close by
his side,
Throws about orange rinds while
proudly driving,
Spits out his offering--a blob of
saliva,
As if entreated to clean the streets
of the town.*

This is one type of Ethiopian that I have decided I will not see in the Ethiopia I envision 25 years from now.

The second extract, also taken from the same poem, depicts the second type of Ethiopian that will not be there 25 years from now:

*While his mother patiently waits
in a queue line at the idget[§]
shop
Bustling and hustling
To buy a container of oil on
which to make profit;
Hustling and bustling at the
Qebele cooperative*

* The word used here in the Amharic version is 'tex', probably after 'Texas', referring, in the lingo of Addis Ababans in the 50s, to the 'good' hero in Westerns, who is so full of himself and invariably never defeated, whether in fistfights or shootouts (trans.).

[§] *Idget* was the name of a store during the *Derg* period where people had to line up in long queues for their rations of coffee, sugar, oil, bread, etc., the destitute among which resold their share for what little profit they could make. The 'Mother' depicted in the extract represents such destitute residents of Addis Ababa at the time, of which there were many. The store still stands in the building housing the German Cultural Institute at Arat Kilo, having retained the same name, as a 'supermarket' (trans.).

*To make profit on her quota of
sugar;
Behold my swift, ingenious
valiant
Proudly strolling, so full of
himself
Having sprinted out of his full-
day slumber
Goes to the neighboring shop
Procures his daily ration of chat,
matches and cigarettes on
credit
Promising the shopkeeper prompt
payment, when "Mother"
returns!*

7.2 It is possible to see, 25 years from now, a system put in place by means of which Ethiopia's natural resources are known and recorded in detail, their content assessed periodically, their values properly known and understood, and the people will know what they have and use them accordingly. This must be a sustainable project.

7.3 Ethiopia can use the rivers that start on its highlands and drain into its lowlands for the generation of hydroelectric power. For example, if we take the Blue Nile and its major tributaries, they can be dammed, and the water resource that can be harnessed at 1000-meter river basin slopes can be used to generate hydroelectric energy for electricity, for cooking, for running industrial plant, for railway and tram locomotion, while what remains of the energy so generated can be sold to neighboring countries. It is my wish to see many thousands of experts and professionals actively engaged in this energy-generating project.

To begin with, the rivers flowing west from Addis Ababa to Debre Berhan can be harnessed about the

Debre Libanos escarpment, using Aleltu as a major drain, and using the 1200-meter slope extending to the Blue Nile, it is possible to set up generators at various points, possibly every 100 meters on the slope, and solve once and for all the problem of electric power shortage. Then the electric power crisis we now have will be something we will hear about as a story of days gone by.

Generating electric power using our water resources contributes greatly toward the country's environmental protection, particularly when compared with generating the same power by other means.

Our river basins should be covered with vegetation, and all stakeholders must participate in this project.

It is my wish to see that neighboring countries, but particularly Egypt and the Sudan, fully participating in activities undertaken for mutual development and prosperity, while the world's prosperous countries recognize this good neighborliness and provide the loans, aid, and political support necessary for this project. When there comes into being a people capable of purchasing commodities from the developed countries, and the market for this is set up, the world's governments should realize that the benefits so gained from such development projects, but particularly from such a natural resource as water, are of mutual interest to everyone concerned, and because using such a resource by mutual agreement for common benefit contributes to bringing about world peace, they should support the project. If sufficient

diplomatic/political work is done, it is possible to concretely realize this.

Moreover, because trees planted along the slopes of river basins can serve as agents for absorbing the Carbon Dioxide emitted into the atmosphere by the industries and cars of the developed countries, and because this process is one that would help solve problems common to all, it is possible, with the support earned from the said countries, to use our trees for the said purpose.

7.4 It is my wish to see 25 per cent of Ethiopia's river basin slopes planted with trees (fruit trees, trees for fuel, construction, etc.) and part of the water from the rain falling in the area surging underground to replenish the water reservoirs therein and the remaining part draining into rivers and strengthening their capacity. It is my wish to see the trees planted on Ethiopia's river basin slopes providing a variety of fruits, logs for industries, boards, etc., millions of people engaged in producing different products from those trees, and our natural resources making the mainstay of Ethiopia's economy and the major source of its foreign currency needs. I say this taking into consideration the treeless state of the Middle East and North Africa. Experts and professionals in the field have testified to the possibility of such a project.

7.5 It is my wish to see plants that can be used for food and other purposes cultivated in the lowland wetlands of Ethiopia, and Ethiopians numbering in the millions engaged in industries that use these plants as inputs of production. The products thus produced can satisfy local

consumption needs and the surplus obtained can be exported. It is possible to develop at least 50 per cent of the land that should be developed.

There are some studies undertaken pointing to possibilities of how we can use our water resources. For instance, Engineer Tadesse Haile Selassie has given extensive reports at various forums on how to use and manage the waters of the Nile River basins. I believe that the Government will, and must, give due attention to such studies as important pointers for development.

7.6 It is my wish to see that programmes focusing on raising awareness about the country's natural resources developed for all schools, colleges and universities and incorporated into school curricula, and that the education so provided will be such that it enables our students to be adequately equipped with awareness about natural resource management, use, and protection as well as about the ecological balance of those resources. This, too, can be done.

7.7 I want to see a National Service Programme set up for the rehabilitation of Ethiopia's natural resources. Every Ethiopian that has come of age must participate in this programme. It is my wish to see barren mountains that are deprived of their vegetation covered with trees, and unproductive land plots once again becoming productive through this programme. My wish could become a reality through the broad participation of the Government, religious institutions, non-governmental organizations (both existing ones and those to be established in the future). In this

manner, it is possible to rehabilitate those damaged areas within a 50-kilometer radius of heavily populated settlements.

7.8 It is my wish that engineers, architects, and other experts put their heads together and come up with a plan that will help in the building of residences for families with modest incomes, and manufacture the necessary materials for building the residences.

In the course of this project, the Government must provide adequate funds for research and remuneration for the individuals involved in the project. In addition to this, it must set up other incentive mechanisms, for example, awards, etc. Doing this, as well, is not beyond our reach.

7.9 I wish to see tourist attractions built on our natural resource sites, hotels and motels that fit into the ecology of the sites set up and provide efficient services, thereby making our natural resources become sources both of enjoyment and finance. This can become a reality by soliciting the expertise and co-operation of foreign companies with the necessary experience in the field. In this process the full participation of the people inhabiting the areas around the sites is crucial.

7.10 It is my wish to see each and every Ethiopian, but particularly children, free from parasites, worms, etc. Do you know that our country's poor children contribute 20-30 per cent of the food they consume to parasites that they live with? Even then, this much comes out food that was not adequate for the children in the first place.

And there are tested solutions for this problem, and we can put them to good use. We can at least include school children in the programme set up for this purpose.

7.11 I wish to see the culture of settling problems, both internal and external, through dialogue/without war develop. In any war both parties to the conflict are losers. As the saying goes in our country, a person who wrestles his adversary down to the ground will end up soiling his own clothes as well. Poisons sprayed and landmines buried during wars will become part of environmental crises after the wars are over. Because settling problems and solving conflicts without having to resort to war will become an international convention, Ethiopia should be an adherent of this position. And I do not think it has much other choice, anyway.

7.12 I wish to see a youth that has great respect for life, not one that regards it as nothing important and exchanges it for a short, momentary pleasure for which it has not taken the necessary precaution; I wish to see a youth that does not exchange life for anything at all, except for protecting an honorable human dignity/right.

Neighboring countries have demonstrated that it is possible to do so, and Ethiopia, too, can do it.

7.13 It is my wish to see us properly using the highland farming lands and, at least, producing enough food for the farmers' consumption. It has been proven that, because of its proximity to the equator and the high-altitude regions it has, it can produce flowers that are in high demand.

I wish to see the Government pay special attention to this natural resource, relax its claim to the right of land ownership and administration it so zealously protects, and invite individuals with the capital to invest in this sector. I also wish to see hundreds of thousands of Ethiopians engage in the sector, from growing the flowers to supplying them to markets. As long as the prosperity of Europe and North America lasts, it is a sure thing that markets for our flowers will be available. Experts tell us that this, too, can be done.

7.14. I wish to see vegetables produced in abundance in backyard gardens of homes, and small edible animals bred through the use of appropriate technology; solar energy being put to good use; and the people making appropriate use of rain water as well as water from the rivers and keeping themselves adequately clean (both themselves and their clothes). 75 per cent of the people can develop this habit into a sustained culture within 25 years.

7.15 I would like to see forests/parks built, consisting of indigenous trees, which indigenous wild animals inhabit. And these parks will be legacies bequeathed to coming generations as lessons in national consciousness. Each city with more than 100,000 residents should have a park with indigenous trees on it and which the population considers as its own wealth. Moreover, forests with trees for fuel must be developed. And doing this, too, is not beyond our capacity.

7.16 I would like to see recreation, cultural and sports centers established in big numbers. The

establishment of centers in different areas, where the youth relaxes and does workouts, will help the youth turn to sports, music, theater, etc. as sources of relaxation and entertainment instead of numbing its senses with *chat* and alcohol.

Each Qebele should establish a moderate-size entertainment/sports location, while each city region establishes fully equipped entertainment/sports centers. And both can do so.

7.17 I would like to see public rest rooms built in each city and town. And this can be accomplished within 25 years.

7.18 I would like to see educational centers, particularly those at Addis Ababa, to be newly built resting on plots with considerable area, with football fields, volleyball, basketball and tennis court, fully equipped with the appropriate facilities that would whet the interests of the youth to extricate itself from the prison-house mentality with which it lives presently. There are large, open spaces everywhere, including Addis Ababa. So I don't see why this cannot be done, beginning even tomorrow.

7.19 Let us turn to our own community

I would like to see four tasks accomplished in Addis Ababa:

- I would like to see the five medium sized streams of the city cleaned, with an open space measuring no less than 50 meters on both banks of each, and be used for clean water drainage. I would like to see, in addition, dams erected at

confluences of rivers, for example, south of the Bole Bridge, and recreational lakes built. There is no doubt that such an undertaking will endow the city with the beauty that it needs and deserves. I would also like our country's other cities following Addis Ababa's example and attempting to clothe themselves in beauty. And 25 years are enough to attain this.

- Turning now to Government officials and other civil servants, they should realize that governments are there to serve the interests of the people, not those of individuals, and, accordingly, develop the culture of appropriating public funds for public purposes.

The parade of Toyota land cruisers bought with loans obtained from abroad and cross-country vehicles that can accommodate ten people hitting the streets of cities and towns with only one passenger certainly are not evidences of using public funds appropriately. It may be argued that such vehicles are appropriate to the honor and dignity of the people driving them. But where lies the honor and dignity in cruising in vehicles bought with money obtained through begging? Truly, does one need anything more than small sedans, in

cities and towns, and pickups, in rural areas, for running current government activities and errands? I am saying this in light of the country's energy consumption and the services rendered. One can get rid of this convention as an aspect of the corruption we are trying to fight.

- I would like to see the necessary sanitation stalls set up in the city.
- I would like a single sheet newspaper published in each of Addis Ababa's several communities (qebelles), with a theme such as: "I have been watching you". The news that such a newspaper carries will read: I saw the driver of a vehicle with license plate No. .. such and such a make, around such and such time of the day, driving on such and such street throw through the window banana peels, dirty napkin, an empty cigarette packet, corn cob, spitting, etc.

If we embark on such a task, it would be possible to teach those of our fellow Ethiopians that can learn about the proper disposal of waste matter. It is my wish to see *Gashe* [Brother] Aberra Molla, alias Sileshi Demissie, serving as the chairman of this mini newspaper. This, too, can be done.

7.20 Well, before I disappear under the weight of my own wishes, I would like to say something as my final wish. As you have heard me, I have cited from the writings of Tsegaye Gebre Medhin and Fekade Azeze. I have, in addition, mentioned Tadesse Haile Selassie and Gideon Asfaw, as well as Sileshi Demissie.

I did this not without reason. Unless we say of those who are ours are there for us, who else would claim them for us as ours? Would it not be the appropriate thing to do to acknowledge and claim them as ours? In these and similar other conditions, and in other areas of activities, we have to give recognition to such people as we have, to claim them as ours. Before our identity and self-confidence completely vaporizes into nothing, we should encourage and join company with such heroes of ours, such as *Gashe* Aberra Molla, who have emerged now, and who will emerge tomorrow, as achievers in different areas and fields. Then we can alleviate the environmental problems confronting us. Such heroes as we have will provide us with the courage and hope that we need. By so bringing ourselves together, let us bequeath to our children, our children's children, and so on, nature's rich legacy, not the bitter lament of poverty and destitution.

Thank you for your attention.

Next "Vision 2020 Ethiopia" Schedule

W/o Zenebework Tadesse – September 26, 2003

Ato Kebour Gena – October 31, 2003

Prof. Mesfin W/Mariam – November 28, 2003