

POVERTY

AND ENVIRONMENT NEWSLETTER

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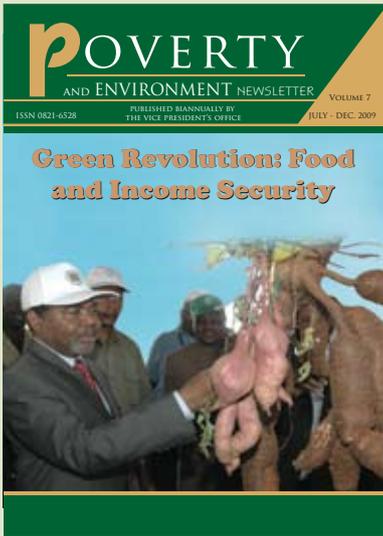
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Green Revolution: Food and Income Security



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COVER PHOTO: Vice President HE. Dr. Shein officiating Farmers' Day in Dodoma, August 2008.

Goal of Poverty and Environment Newsletter

This newsletter is published by the Vice President's Office, Division of Environment, with funding from Poverty-Environment Programme. The Objective is to enhance awareness among various stakeholders on the Relationship between poverty and environment. Articles in this newsletter are geared towards imparting knowledge, new ideas and skills to individual and communities that will eventually subscribe to sustainable environment management in the course of implementing the National Strategy for Growth and Poverty Reduction (NSGRP), Tanzania's Medium term framework for sustainable development.

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Green Revolution: Food and Income Security - Hon. Dr Ali Mohamed Shein

By Our Staff Writer

'Peasant Day' commonly referred as Siku ya Wakulima: Nane Nane is marked on August 8 every year in Tanzania to acknowledge the central role/contribution made by peasants/farmers to agricultural development as well as national economy. This year, at the national level, the celebrations were held at the newly built Nanenane Grounds situated in Nzunguni Village about ten kilometers from Dodoma Town. Vice President, Hon. Dr. Ali Mohamed Shein graced the occasion, at which he expanded about the green revolution, food and income security. Our Staff Writer highlights key issues raised by Dr. Shein in his address to the nation.

In his speech Dr. Shein underscored the importance of holding this annual event which has now reached its 16th year since it was first held in 1993. He noted that the annual Nanenane Exhibitions provide opportunity to both government and other stakeholders in agriculture and livestock sectors to learn and exchange experiences on the new developments which would help in smooth implementation of sectors' national development plans.

He acknowledged the investment made by stakeholders in preparing Nanenane exhibitions and emphasized his optimism that participants would make their best to benefit from their participation.

"Every year the government and other stakeholders have been putting a lot of resources in educating and sensitizing the use of better and new methods in agriculture. Our expectation is that you will take what you have seen and learnt during these exhibitions and make use of them to increase productivity" he said, and commended all stakeholders, participants, organizers and facilitators of the event from both

public and private sectors.

The Vice President used the occasion to reaffirm government's commitment to agricultural promotion development in the country hence elaborated different plans and initiatives being undertaken by Fourth Government to bring agricultural revolution which aims at moving agricultural sector from the present state of low productivity to high productivity through the use of better agricultural methods and inputs.

"Agriculture is our key economic sector; majority of our people depend on agriculture for their survival in terms of food, exports and raw materials for our industries. In this regard it [agriculture] will remain so for many years to come" he elaborated.

He assured Tanzanians that as highlighted in the Ruling Party Election Manifesto, the government would continue to increase budget allocations for agricultural sector as was the case in this financial year where Tshs. 666.9bn was allocated which was 30 percent increase from 2007/2008 budget.

Dr Shein acknowledged the fact that such increment is still below the target set by African Union-AU leaders in 2003 which was 10 percent of national budget of each member country.

"We have shown our commitment to set aside more money for agricultural sector development. For example this year we have allocated Tshs. 666.9bn; an increase of 30 percent from last financial year's allocation" he told the well attended event and stressed that although the amount was still short of AU's target but said where there is will there is always a way.

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Biofuel Projects Development in Tanzania: A Situational Analysis

By: K. P. Luteganya & R. K. Mukandala

Production of biofuel is rapidly expanding all over the world. The major driving force being unpredictable rising prices of fossil fuels that includes coal, natural gas, and oil (petrol and diesel). Fossil energy resources are finite and it has been reported that they may become depleted before 2050. Biofuel project development is also accelerated by the desire of countries to have independent sources of energy to avoid dependency on fuel imports.

Biofuel production and consumption can considerably reduce greenhouse gases and other harmful emissions; and if the initiative is properly implemented, it can contribute towards sustainable development by promoting rural development. This means it has a potential to create employment and new opportunities for farmers, contribute to poverty reduction and increase security of energy supply.

Biofuel is a liquid fuel produced from biomass for transport, running machines or burning purposes. It can be produced from agricultural, forest products or biodegradable portion of industrial and municipal waste. Biofuel is obtained from lifeless or living biological material, various plants and plant-derived materials. These differentiate it from fossil fuels which are non-renewable energy sources and are derived from long dead biological materials.

Biofuel includes solid fuels such as wood and charcoal, liquid fuels such as ethanol and biodiesel, and gaseous fuels such as methane. They are renewable energy sources which serve the purpose of solving environmental and security of energy supply problems. In many cases

biofuel can substitute conventional sources of a fossil origin. The use of alternative fuels has been approved as one of the technical solutions for reducing emission of pollutants in the transport sector.

In determining efficient production of biofuels, there has been discussion and research aimed at figuring out which crop species are likely to be the most efficient at producing sustainably large quantities of biomass with minimal inputs. These crops need to be capable of generating high biomass on a sustainable basis, have a high ratio of energy output to input, and high proportions of constituent materials that are suited to the downstream processes of conversion to biofuels. But currently, most liquid biofuels are produced from various species of biomass depending on the type of biofuel produced.

The major crops used for production of biofuels are wheat, corn, sugar beets, sugar cane, molasses and sugar, these are used in production of ethanol. Vegetable oils, animal fats, soya, rapeseed, jatropha, mahua, mustard, flax, sunflower, palm oil, hemp, field pennycress, pongamia pinnata and algae are used for production of biodiesel.

Global production of liquid biofuels has grown exponentially in recent years. In 2007 production was three-fold greater than that of 2000. Production targets for biofuels vary from country to country. However, many governments have already adopted goals to substitute 10% or more of transportation demand for liquid fossil fuels with biofuels within the next 10 to 20 years. The ambitious biofuels targets set by many countries in recent years reflect the new optimism on

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the potential of biofuels. Global biofuel production in 2006 was estimated to be over 55 billion litres. This figure is, however, small considering that in terms of gasoline, some 1,200 billion litres are produced annually worldwide.

Ethanol made up 93% of global biofuels production in 2006, while the remaining 7% was biodiesel. Although ethanol is produced around the world, its production and consumption is strongly concentrated in America. Biodiesel production and consumption is still strongly concentrated in the European Union. Almost all biofuels are used in cars and trucks, though small quantities of ethanol are used for aviation purposes. The increased production and use of biofuels have led to growing international trade, although the bulk of production is still consumed domestically. However,

international trade is expected to grow very rapidly in the coming years.

Brazil is the first country to start major biofuel production programme. It started in the 1970's. The United States of America and Malawi followed in the 80's. Europe began its biodiesel program in the 1990's. Since then many countries including India, China, Thailand and Egypt have initiated biofuel production programmes. As countries are pressurised to improve domestic energy supply security and combat global climate change, they are forced to turn to ethanol and biodiesel to meet the demands. In 2005, the United States of America pledged to nearly double ethanol production by 2012 and the European Community

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A section of Jatropha plantation in Kilwa. Jatropha is used to produce biofuel.

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committed to make biofuels meet 10 percent of their transportation fuel needs by 2020.

In Tanzania, biofuel production is growing so fast that there are fears of diminished food production as farmers join the lucrative energy sector. An Oxfam report on biofuel production and its effects in Tanzania states that food supply to the nation could be in jeopardy and the environment endangered if the government continues to support haphazard production of biofuel. Recognising that danger, the government issued a decree in mid-2008 putting on hold biofuel development projects until guidelines for their development were put in place. It was however indicated that the government would not stop the ongoing development, but projects that are yet to start will be deferred as it prepares a national policy on biofuel production.

Before this decree, the government was considering to accommodate a Swedish investor looking for 400,000 hectares of land in the Wami Basin, one of the country's major wetlands, to plant sugar cane for ethanol. Various proposals and land allocations for jatropha and oil palm cultivation including combinations of plantations and out growers have been reported from different parts of the country. These involve investors from Sweden, the United Kingdom, Germany, Malaysia and other countries.

Large-scale jatropha cultivation is associated with significant negative impacts, particularly land grabbing from local communities. A multimillion dollar jatropha project managed by a British firm in the Kisarawe district in Tanzania has been reported to acquire 9,000 hectares of land and remove 11 villages which, according to the 2002 population census is home to 11,277 people. Some US\$ 632,400 have been set aside to compensate a total of 2,840 households.

Furthermore, Sun Biofuel Tanzania Limited (SBF) signed a memorandum of understanding with Dar es Salaam and Kisarawe district authorities for the production of biofuel. Under the memorandum of understanding, the company is allocated a total of 18,000 hectares of land. The company will use the land for planting jatropha curcas the seeds of which will be crushed to produce biodiesel.

A total of 38 companies are engaged in biofuel production in Tanzania. Eight of them are foreign investors who have been certified by the Tanzania Investment Centre. The rest are locally owned institutions. Areas being used to farm biofuels include Coast region, Ruvuma, Tabora, Kilimanjaro, Tanga, Morogoro, Kagera, Arusha, Mpanda and Shinyanga.

Some of the crops that are being harnessed for biofuel production in Tanzania include coconuts, Jatropha, sugarcane, wheat, cassava and sunflower. Most of the activities have been directed towards the use of Jatropha curcas L, an indigenous plant whose seeds can be pressed to obtain oil. The water and nutrient requirements of the plant are modest while its oil yield is relatively high.

Liquid biofuels can provide a much needed substitute for fossil fuels used in the transport sector. They can contribute substantially to minimizing climate and other environmental problems, increase security of energy supply and promote economic development. However, if biofuel production programmes will not be implemented with care, they can escalate food prices, increase greenhouse gas emissions, exacerbate degradation of land, forests, water sources, ecosystems

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What Does Self Identity Mean to Environmental Conservation

By B. Cheche

Human beings have been interacting with nature and changing the natural landscape for a long time. Realizing that this state of affairs can't continue indefinitely, different theories have been put forward to explain why different people see, behave and have contributed differently to this change as a step towards understanding the individual perception as part of environmental management. Patterns both

in human social activity and interrelations between societies and their biophysical environments have led sociologists to recognize the complexity of the social world and therefore, included biophysical, psychological or economic reasons in their explanations for such events or activities. A group's cultural perception of nature reflects definitions of them and their relationship with nature, which in turn determines how they interact with it. Sociology

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Whereas logging is fun to some people, others nurture trees to grow.

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Indeed he said currently the government, in collaboration with other stakeholders, was implementing Agricultural Sector Development Program-ASDP which targets to increase production and productivity in the sector, ensure good prices and reliable markets for agricultural products.

The program, he said which was in its fourth year of implementation, centered on increasing irrigation, use of better seeds, improvement of extension services and marketing and strengthening key agricultural infrastructure.

“In principle these targets concur with those identified by stakeholders during the meeting to discuss *Kilimo Kwanza*” Dr Shein added.

He mentioned *Kilimo Kwanza*'s stakeholders' concerns as among others increasing more funds in agriculture, building more agro industries to add value to agricultural products, using new technology and development in human resource, strengthening agricultural

infrastructure and formulating proper management system which suits current agricultural needs.

Having that in mind, according to Vice President, the government during the current financial year - 2009/2010, has directed its efforts in spearheading the implementation of ASDP, increasing access, availability and use of farm inputs, strengthening capacity of research centres to produce better seeds, increasing productivity in irrigation schemes, improving extension services, ensuring quality of both major agricultural products as well as horticulture products and strengthening cooperatives.

Dr Shein elaborated that the program was involving all stakeholders in agriculture and livestock sectors to ensure its success as well as to attain maximum and efficient utilisation of resources.

“On the government side ASDP is implemented

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Vice President HE. Dr. Ali Mohamed Shein in one of the pavillion during Nane Nane Day in Dodoma, August 2009.

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and anthropology can be used to illustrate the social construction of nature and the changes imposed to the environment by different people.

Analysis of environmental management by taking an example of Tanzania, shows that during past generations people who lived in and around the country were much more connected to their local ecosystems than they are now. Environmentalists in urban areas are concerned by the significant increase in human ecological footprint with increasing detachment of people from their local ecosystems. More changes have been introduced to the natural landscape, a situation that has made people more detached from their environment.

There is a close link between self identity with environment and ones actions on the environment. In some localities in Tanzania, natives protected their ecosystem including mountains, forests, wetlands, big trees and caves by practising various cultural and religious myths. The life of taboos and religious rituals is based on the belief that self esteem is the ability to participate in the process of creation, hence making all things sacred. To immigrants, in contrast to most natives, their faith is based on separation. The natives consider themselves as part of nature while immigrants do not. Some sociologists argue that the current ecological and psychological crises in modern society are deeply intertwined and at their base is a loss of connection with nature. Lack of connection show that social issues compete with one another, as a result, some immigrants concentrate on economic development at the expense of the environment. Judgments of land based on how useful it is for humans rather than its spiritual and ecological value have led to the disconnection between human beings and nature. We need to maintain the connection between nature and human beings for sustainable development to take place.

The early childhood experiences form much of our environmental awareness, based on our immediate interaction with the natural environment. These memories are carried to future broader land use. Self-identity has been grouped into different categories:

- **Protectionist vision** - Focuses on protecting nature but not managing the ecosystems. The group believes that human beings are a threat to nature.
- **Humanist vision** - like Protectionist, humanists differentiate culture and nature, suggesting that nature is to be useful for human purposes. Human actors use nature for pleasure and profit.
- **Conservationists** - these put environmental policies to protect human interests. On the other hand, anti-humanism believes that humans lack the soul of nature.
- **Mushroomers** - justify their use of the wild by minimizing the extent of harm and differentiates between those who over pick. Good mushroom pickers are moderate while the greedy pick all the mushrooms. Like all groups who justify the wise use of nature, good pickers believe by picking moderately they conserve it for future use.

Nature is delicate and vulnerable to ecological change. The ecological destruction is not recognized until after the damage has been done. Therefore, habitat loss makes protection inevitable.

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Air Pollution and its Effects on the Economy

J. Kilabuko and A. Madete

Air pollution is the introduction into the air of chemicals, particulate matter or biological materials that damage the environment and cause harm or discomfort to living organisms. The environment is made out of three media namely air, soil and water. Clean air is important for life to exist and function properly. Air pollution has long been recognized as a threat to human health as well as to the earth ecosystem including recent recognition that it contributes to global warming which leads to climate change.

There are many substances in the air which may impair the health of animals including humans, plants and affect the quality of man-made materials. These

pollutants arise from both natural processes and human activity. Air pollutants can therefore be classified as either primary or secondary pollutants depending on how and where they are formed.

Primary air pollutants are substances directly emitted from a process. Such pollutants include sulphur oxides; nitrogen oxide; carbon monoxide; Volatile organic compounds; particulate matter measured as smoke and dust; toxic metals such as lead, cadmium and copper; ammonia and methane emitted from agricultural processes; odors and radioactive pollutants such as the radioactive decay of radon.

Secondary pollutants include ground level ozone - one of the many secondary pollutants that make up

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Air pollution from industrial processes

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photochemical smog and particulate matter formed from gaseous primary pollutants and compounds in photochemical smog, such as nitrogen dioxide. Some pollutants may be both primary and secondary.

Sources of air pollution can be classified into two major categories namely anthropogenic and natural sources. Anthropogenic sources relate to burning of different kinds of fuel and can further be categorized as stationary sources which includes smoke stacks of power plants, manufacturing facilities, burning wood, fumes from paint, hair spray, varnish, aerosol sprays and other solvents. Natural sources include dust from natural sources, methane emitted by the digestion of food by animals, for example cattle, radon gas from radioactive decay within the Earth's crust, smoke and carbon monoxide from wildfires and volcanic activities, which produce sulphur, chlorine and ash particulate.

Air pollution impacts are multifaceted. Air pollution is known to have effects on human health, ecosystem, agriculture and man-made materials.

Scientific studies show that air pollution is one of the risk factors for mortality and morbidity. The World Health Organization (WHO) estimates that about 2.4 million people die each year from causes directly attributable to air pollution. Estimates also show that air pollution causes more death per year than automobile accidents. Direct causes of air pollution related deaths are aggravated asthma, bronchitis, emphysema, lung and heart diseases, and respiratory allergies. Premature deaths reduce the much needed manpower for economic growth, hence affecting its pace. Premature deaths leaves a number of orphans who fail to get basic care and support including the right to education which exacerbates poverty.

The health effects caused by air pollutants range from subtle biochemical and physiological changes to difficulty in breathing, wheezing, coughing and aggravation of existing respiratory and cardiac conditions. Studies also show that air pollution cause cancer and compromise body immunity. Individual reactions to air pollutants

depend on the type of pollutant a person is exposed to, the degree of exposure, the individual's health status and genetics. Due to their high metabolic rates and lower immunity, children are more affected of air pollution than adults. These effects can result in increased medication use, increased doctor or emergency room visits, more hospital admissions and premature death. Old people are also at high risk due to their low body immunity.

No scientific studies have been conducted in Tanzania to assess economic impacts of air pollution. However, it is obvious that treating diseases attributable to air pollution such as coughs, tuberculosis, asthma, pneumonia, etc., costs the country dearly and retards the pace of our economic growth. These costs include the cost of employing more medical professionals, costs of admission of patients and lost working days by the patient and the person taking care of the patient. If air pollution is reduced, occurrence of these diseases would be significantly reduced and the country could save a significant amount of its financial resources for use in other areas of development.

Air pollution has also been associated with loss of biodiversity and reduction in crop yield through interference with natural processes such as photosynthesis and pollination as a result of deposition of pollutants on vegetation and water systems. Loss of biodiversity affects agriculture and tourism sectors, hence affecting the economy of the country.

Air pollution is also known for its effects on man-made material through corrosion, rusting and acid rain formation. Corrosion and rusting affects the quality of materials and hence negatively impact the economy.

Tanzania has committed to transform herself from a developing country to a middle income country by the year 2025. For this ambitious goal to be achieved, embracing environmental conservation and management is of paramount importance. Control of air pollution is an integral and important aspect of this endeavour in order to reduce deaths, diseases,

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biodiversity loss and deterioration of materials to bolster economic growth. The government, therefore, has taken several steps to address this challenge.

One of the most important steps to air pollution control taken by the Government is the enactment of the Environmental Management Act in 2004. Sections 130-132 of the Act call for control of air pollutants in human settlement, industries and vehicles. The Government, therefore, has formulated regulations on environmental standards for air quality. The regulations prescribe permissible levels of air pollutants for ambient air and emission sources as well. Under the regulations, the National Environmental Management Council (NEMC) is required to identify major air pollution sources and take required actions.

African countries attending the Dakar conference in June 2001, agreed to launch national programs to phase

out leaded gasoline by 2005 in the gasoline importing countries of Sub-Saharan Africa. Committed to the Dakar declaration, Tanzania has managed to phase out importation of leaded gasoline into the country.

Efforts to reduce air pollution cannot be well gauged without knowing levels of pollutants in the air. Cognizant to this, the Government, through NEMC implemented a project on Air Quality Monitoring and Capacity Building in Dar es Salaam City. The project installed air pollution monitors to measure the air quality of the city. Dar es Salaam City is working on Rapid Transit project which, among other things, will phase out small buses in the city centre and introduce big ones. The big buses will reduce traffic congestion on the city roads and will operate on compressed natural gas thus reducing exhaust emissions and congestion.

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Air pollution from vehicles leads to unhealthy human habitat.

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through Agriculture sectoral ministries. It is also involving our development partners such as European Union, IFAD, ADB, WB, Japan, Ireland and some United Nations agencies” he named and further added that they are all contributing to agricultural development fund.

He mentioned that in order to make use of this fund the government from 2006/2007 was setting aside funds to finance projects initiated by people through District Agricultural Development Plans-DADPs.

Vice president indicated that despite ongoing government’s investment in agriculture and livestock sectors which was aimed at creating enabling environment for farmers/peasants and entrepreneurs in the sector to achieve their goals, the later were the main investors.

“The aim of ongoing investment by the government in these sectors is to create enabling environment for peasants, farmers and entrepreneurs in the sector to achieve their goals” he hinted and emphasized that the main investors were peasants, Livestock keepers and entrepreneurs in the sectors.

Explaining further on the program he said it was unique since it was the first program of that kind to simultaneously involve all districts in the country.

“This is the first program to be implemented in all districts at the same time and it is the first to provide opportunity to farmers and livestock keepers in the country to identify obstacles which hinder development of their activities and initiate and implement programs to address them” he stated.

Dr Shein added further that the main challenge facing this program was to ensure its smooth implementation and in this regard he urged farmers country wide to effectively take part through District Agricultural Development Plans.

“It is very crucial for all stakeholders; farmers, livestock keepers, extension workers, members of Parliament and other leaders from village to national level to be aware of

this program” he emphasized.

Elaborating this year’s theme *Green revolution for food and income security* Vice President told the audience that the thrust of the theme was that Green Revolution is key to eradicate poverty among peasants in the country.

He also called upon leaderships at regional and district levels to formulate comprehensive agriculture programs which would provide self employment opportunities to young people and also to create enabling investment environment for both local and foreign investors. He however cautioned that all should be done according to the existing rules and regulations.

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At sub-regional levels, Tanzania participated in the formulation and is committed to implementing the Lusaka and Nairobi Agreements on Better Air Quality for southern and Eastern African Countries. The government through Tanzania Bureau of standards is working on fuel standards for petrol and diesel to reduce air pollution. The diesel currently in use in the country had sulphur level of about 500ppm. The government intent is to reduce sulphur in diesel and petrol to 50ppm to reduce air pollution.

Air pollution is a big challenge in the country for both urban and rural areas. Air pollution in rural set-ups is mainly from reliance on woodfuel for source of energy while for urban areas is mainly caused by increasing industries and vehicles. Tanzanians have to join hands and support the government initiatives to combat air pollution. We can start our support by reducing the use of private vehicles, increasing the use of non-motorised transport such as bicycles and walking, and using environmentally friendly technology such as the use of catalytic convertors in our vehicles. By doing so, we will not be just reducing air pollution, but we will also be fighting poverty.

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An organic vision believes that humans are not outside nature, but part of the organic whole. This vision was propounded by Gaia who stated that, "... Our species with its technology is simply an inevitable part of the natural scene. Unlike others, inter ideologies erases the division between nature and culture." Therefore, environmental personal forms are a core of one's self identity, bringing ones wants and needs of nature identifications. Fine, on the other hand states that, "... to connect oneself to the world out there justifies ones place in cosmos: preserving the wild is thus an act of faith."

Environmentalism needs identity shift from humanist self to nature connected self. Humanist should try to see how far humans have gone by dominating nature and in turn see the relation to non human nature as equals. They should work on nature as participating,

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and jeopardize the livelihoods of local communities. Countries must make informed decisions before they embark on biofuel production. There is need to fit biofuel production within country's development strategies, policy and institutional framework. When a decision is made in favour of biofuel industry, implementation mechanisms must be put in place to address investments in inter-sectoral research and technology access, provision of incentives and policy coherence over time.

interdependent members of the web of nature, not as a master of it. The importance of experiences especially if reinforced by cultural beliefs, in early childhood show strong connections particularly with physical surroundings and is part of self and social connection. Individuals who are attached to the environment react strongly to its destruction. The change in attitude is needed in society for communities to engage in positive relationship with the planet and make personal changes. What was taken as progress by altering nature is now seen as destruction.

People need to make the environment cleaner and safer for both current and future generations. They also need to rethink the social view of self search for social solutions, through structure in social action, in order to understand that such actions are built upon social relations and as part of the process of socialization of many cultural and group collective dimensions. These are important forces behind social changes. It is a pity that some groups perceive environmental protection as a hindrance to economic growth.

Self identities define how people interact for purpose of managing the natural environment. As a result different societies have different conceptions in managing environmental systems and may vary within and between societies. Every human being is affected by social and biophysical environment in which they live. The process of managing it can be facilitated by understanding both the people involved and the processes leading to such identities. At the same time, the idea of intergenerational transmission of the best environmental management attitudes as part of education should be encouraged.