Educators' Views about the Use and Protection of Natural Resources in Ethiopia: The Case of Teachers and School Administrators

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ABSTRACT: *Resource degradation is an insidious problem threatening life of millions in Ethiopia. It has been underlined time and again that education would be one of the main contributors to the campaign against the problem of resource degradation in the country. This study was based on the premise that the contribution education could make to the campaign depends, among others, on the view educators have about resource use and protection. A questionnaire was thus administered to investigate views held by teachers and school administrators on the issue.* Analysis of the results indicates that educators duly appreciate the value of natural resources and the seriousness of the problem of resource degradation in Ethiopia. They have also appreciated the need to consider the interests of the future generation *in general*. With regard to Ethiopia, however, as many as half of the respondents agree to the statement that 'one should be worried more about satisfying the needs of the present generation than talking about preservation of resources'. Views different from those of experts (conservationists) have been expressed in other areas of resource use and management as well. A recommendation is made to involve educators in debates and discussions underlying the benefits of careful use and management of natural resources.

Introduction

> It is in the *minds of men* that radical changes will have to be made in order to ensure sustainable development and maintain optimum quality of life for all without endangering the environment. (Sharma, 1995:30).

Resource degradation (particularly of soil and vegetation) *is one of the most serious problems* threatening life of millions in Ethiopia. Fortunately, both the magnitude and seriousness of the problem have been well recognised by experts and government institutions (EPA,

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1997a, 1997b). Efforts to alleviate the problem and curb the rate of its spread have also been made for decades both by governmental and non-governmental institutions (Daniel, 1988).

Due emphasis has been given to the role education plays in the attempts to protect further deterioration of the natural resource base of the country. It is, in fact, argued that *sustainable development is unachievable without environmental education* (Kifle, 1995:10). The recently promulgated 'Federal Policy on the Environment' has also underlined the role of education. One of the cross sectoral objectives of the policy is thus *to provide education, training and awareness programmes to increase public awareness and understanding of the need for the sustainable use and management of the natural, human-made and cultural resources and the environment, ...* (EPA, 1997b:55).

The major contribution education can make is preparing future farmers, administrators, planners, political leaders, etc. in such a way that they make conscious and responsible decisions concerning the use of environmental resources. Hence an interesting argument is that it is the responsibility of the present generation to educate the *presidents, ministers, decision-makers and industrial managers of the year 2030* who *are about to start or are already sitting in primary school today* not only to make them literate but also environmentally literate (Carlsson, 1992:8).

Bakshi's point on the importance of education to bring about the desperately needed change in hitherto prevalent attitude and behaviour regarding the use and management of resources is worth quoting in greater length.

> Rising expectations of increasing populations are threatening the very survival of *Homo Sapiens*, a name which attributes wisdom to us. I am afraid that the *wise one* is no longer living up to his name so that he has to be reminded of his wisdom. He has to be shaken out of his lethargy through education, to conserve his resources, to control his population, and to plan for not just mankind, but *all kind*. (Bakshi, 1980:13).

The essence of this view seems to have been shared by the Ethiopian Ministry of Education. It was properly stressed that environmental education in the Ethiopian context should be strongly linked to the need for and realisation of conservation based agricultural development; and be framed in such a way that it assists the efforts to bring about sustainable use of resources (MOE, 1988). Accordingly, the new Education and Training Policy has two objectives directly related to the role education plays in the use and protection of natural resources (TGE, 1994:11):

> To provide education that can produce citizens who possess national and international outlook on the environment, protect natural resources and historical heritages of the country.
>
> To provide education that can produce citizens who have developed attitudes and skills to use and tend private and public properties appropriately.

Varied Views About The Environment

Surveys on knowledge and attitude of students about issues related to environmental protection and natural resource management indicate mixed results. Some showed encouraging findings (Szagun and Mesenholl, 1993; Huck, 1993) while others indicated rather disappointing findings (Stranisstreet et al, 1993; Mansary and Ajiboye, 1997).

Szagun and Mesenholl (1993:37), after assessing the views of 12, 15 and 18 years old adolescents about nature, emphatically reported that participants *of all age groups judged harm done to an ecosystem as immoral and more unacceptable than harm done to humans*. Huck (1993) also reported a remarkably favourable attitude towards environmental protection. More than four-fifth of the pupils included in the study showed willingness to engage in activities related to environmental protection. What is more, 68% suggested that anybody mistreating the environment be severely punished.

A study by Stranisstreet et al (1993) on the attitude of children to the uses of animals revealed, to the contrary, that less than half (46%) of the pupils responded positively to the statements about conservation of animals and, to their surprise, nearly one fifth of the pupils thought that conservation of animals was a 'waste of time'. The trend with regard to students' responses to the statements about conservation of plants was known to be more or less the same.

Another study assessing the Nigerian students' knowledge, attitudes and practices (KAP) showed results that could be equally or even more disappointing to environmentalists. Students in the senior classes of the selected secondary schools *demonstrated a remarkably low knowledge of the concepts involved. Out of a maximum possible score of 60, males obtained a mean score of 13.0, while females scored 12.2* (Mansary and Ajiboye, 1997:320).

The issues that made up the KAP items included solid waste disposal, environmental pollution and degradation; ozone layer depletion and global warming; selected cultural practices and their environmental effects; and population, environment and development. The Nigerian study disclosed a negative attitude on the part of the students towards environmental issues. The adverse effects of bush burning, a common aspect of traditional farming in the study area, were, for instance, not considered as serious by the majority.

Knowledge about the environment has been widely regarded as a factor influencing views on issues related to natural resource management and environmental protection. Researchers have, for instance, reported a substantial correlation between students' knowledge of environmental issues and their attitudes toward the environment. The researchers have thus argued that a good background in environmental knowledge could eventually lead to the development of positive attitudes toward the environment.

Both the knowledge and attitude of students about the environmental issues are, in turn, dependent to a greater extent on the kind of teachers they have. That teachers play a decisive role in the overall

process of teaching and learning has been duly underlined (UNESCO, 1988:15):

> Today's education is highly structured and organised activity through which necessary knowledge and understanding, mental and physical skills, and attitudes and values, are imparted to pupils. In the teaching/learning process no factor, other than the curriculum, is more important than that of the teacher.

Rationale and Aim of This Study

As indicated in the preceding sections, teachers (and school administrators as well) play a key role in enabling schools address issues related to 'sustainable use' and protection of resources. The community of educators, such as teachers and school administrators, are, for instance, considered to be *a means for bringing the struggle for sustainable development into communities and local institutions around the world which, in the final analysis, is where the cause of sustainable development will either triumph or fail* (UNESCO and the Government of Greece, 1997:15).

Success in 'bringing the struggle ... into communities and local institutions' depends, among others, on the educators' attitude towards the issue to be brought into and then 'diffused'. If they are convinced themselves, it will be easier for educators not only to transmit the issue (whatever it is) but also persuade others to accept it. It is, therefore, essential to investigate the attitude of educators towards the issue concerned so as to predict the potential role they play.

The aim of this study was to investigate the views of educators (primary school teachers and prospective school administrators) about the use and protection of natural resources in Ethiopia. Issues considered included the value of natural resources in general, degree of seriousness of resource degradation in Ethiopia, sustainable use and management of natural resources, role of the community in resource use and protection, and contribution of education to the attempts in resource management and environmental protection.

Procedure

Study Participants

Primary school teachers and prospective primary school administrators form the study population. Forty five teachers from five primary schools in Kembata-Alaba-Tembaro Zone, Southern Ethiopia, took part in the study. One school was selected from each of the five *Woredas* (districts) on the basis of proximity to the capital of the respective *Woreda*. To make the educational background of the participants similar to that of the second group, only teachers with a TTI (Teachers Training Institute) certificate were included.

The second group, prospective primary school administrators, was made up of 142 first and second year students of the Department of Educational Administration, Addis Ababa University, who appeared for lecture classes on the day the questionnaire was administrated. These students were admitted from all regions of the country and were being trained mainly to manage and direct primary schools in their respective regions. They all had a TTI certificate and they had served as primary school teachers for at least 2 years.

Data Collection and Analysis

Data Collection

The data collection instrument used for this study was developed for a more extensive study meant to assess '*Students' knowledge of and* attitude towards the problem of natural resource degradation and famine in Ethiopia. The first of the two parts used for this paper had a list containing ten environmental problems that were considered to be among the most serious in Ethiopia. Participants were then requested to categorise the problems as 'very serious', 'serious, but not very much' or 'not serious'. They were also asked to identify the three most serious out of the ten.

The other part used for this paper was the scale developed to measure, among others, attitude towards the use and protection of

natural resources. Some of the statements in the scale were worded in such a way that agreement to them would mean a favourable attitude towards use and protection of natural resources. Others were worded such that disagreement to the statements would mean a favourable attitude. Statements related to the use and protection of natural resources were randomly placed among the other statements in the scale. Attempt was also made to avoid both neutral and extreme statements, and keep the statements moderately positive or negative.

The initial version of the scale was administered to students of Durame Senior Secondary School, Southern Ethiopia. Item analysis was then conducted so as to check the internal consistency of the statements. The best statements were selected by using adjusted or corrected item to total correlation index, i.e. by correlating score on each statement with the total score minus the score for the statement in question (McIver and Carmines, 1983). Statements with the lowest index were then eliminated as they have low correlation with the other statements making up the scale. Cronbah alpha coefficient, used to assess the reliability of the final version of the scale, was computed to be 0.67. It is argued that alpha coefficients of upwards of 0.50 are sufficient for scale reliability in the early stages of research (Albrecht, et at., 1982:43).

Extensive review of literature was undertaken to make the instrument sample the subject matter under discussion and thereby enhance the content validity of the instrument. Rao (1990:313) argues that *the most direct evidence of content validity is obtained from examination of test itself by a competent judge*. Such an examination was made on the instrument by geographers and geography educators at Addis Ababa University, Ethiopia and Flensburg University, Federal Republic of Germany.

Data Analysis

The directors of the five primary schools administered the questionnaire to the teachers. In the case of prospective school administrators, the questionnaire was administered during regular

lecture classes by the researcher with the help of the lecturers of the respective classes.

Scoring was made by assigning values of 5,4,3,2 and 1 for 'strongly agree', 'agree but not very much', 'undecided', 'disagree but not very much' and 'strongly disagree' respectively for statements written in such a way that agreement meant a 'favourable' attitude. For those statements where disagreement meant 'favourable' attitude, scoring was done simply by assigning the above points in the reverse order. Thus a score of five means the most favourable attitude towards the use and protection of natural resources; and a score of one means an attitude which is least favourable. Frequency counting was used to analyse data and results are reported in percentages.

Results

Value of Natural Resources

Unlike the affluent in the technically advanced parts of the world, the overwhelming majority of people in the Third World still depend on the provisions of the natural environment to sustain life. It is for these people, who subsist on nature's provisions – on organic soil fertility

Table 1: Views of educators about the value of natural resources

Statements Number	(I) SA	(II) ABNVM	(III) UD	(IV) DBNVM	(V) SD	Total N=187*	I+II	IV+V
1	72.19	17.65	1.07	4.28	4.81	100.0	89.84	9.09
2	83.96	10.16	2.67	2.14	1.07	100.0	94.12	3.21

All figures are given in percentage.

- * 45 teachers and 142 prospective school administrators
- SA= strongly agree; ABNVM= agree but not very much; UD= undecided; DBNVM= disagree but not very much; SD= strongly disagree
- *STATEMENT 1*: 'The quality of life in Ethiopia is to a greater extent dependent on the quality of such resources as natural vegetation and soil'.
- *STATEMENT 2*: 'Careless use of the land means damaging the very basis of human life'.

for food, on stable hydrological cycles for water, and on forests for fuel (Durning, 1989), that resources like land and vegetation have a

decisive role to play. Anything that adversely affects the quality of these resources would lead to starvation of millions and death of hundreds of thousands as witnessed in many poor nations one of which being Ethiopia.

Participants of this study seem to appreciate the pivotal position natural resources (soil and natural vegetation) have in the life of Ethiopian population – about 90% agree to the statement that 'the quality of life in Ethiopia is to a greater extent dependent on the quality of such resources as natural vegetation and soil' (see Table 1). Furthermore, there is almost unanimous agreement (94%) among teachers and school administrators that careless use of the land means damaging the very basis of human life. Major Environmental Problems Facing Ethiopia

The degradation of natural resources (particularly soil and vegetation) is one of the most serious problem threatening life in Ethiopia (Belay, 1995; EPA, 1997b). Erosion of the most fertile soil, owing mainly to indiscriminate deforestation and bad farming practices, is dramatic in the country with a loss of up to 400 tones per hectare in some crop lands (Hurni, 1994).

With an alarming rate of deforestation of 160,000 hectares annually (UNDP/World Bank, 1988 cited in Tegegne, 1995), the country is now left with a forest cover of only about 2.7 per cent (Kebede, 1995 cited in Fisseha, 1996). In the most degraded areas of the north, wood has already received the status of a 'precious' resource. Farmers are facing difficulty even to get it for making farming implements (Mesfin, 1991).

Grazing land is following the same path of degradation as a result of the large number of livestock population in the country and poor management (Daniel, 1988). The uneven distribution of the livestock (with a high agglomeration in the highlands) led to a tremendous pressure on the existing resources. This, together with the tendency of livestock owners to increase the number of their livestock has made the future even gloomier.

A list containing ten environmental problems, most of which are directly related to the use and management of natural resources, is presented to be categorised by educators as 'very serious', 'serious but not very much' or 'not serious'. Soil erosion, deforestation and overpopulation are not only considered to be 'very serious' but also put in the list of the top three most serious by a vast majority of the respondents (see Tables 2 and 3). These three environmental problems are considered as very serious by more than 80% and put in the list of the top three by more than 55% of the respondents.

Table 2: Views about the seriousness of major environmental problems of Ethiopia

Environmental Problems	Very serious	Serious but not very much	Not serious	Total
Soil erosion	93.41	5.49	1.10	100.0
Deforestation	89.56	10.44	0	100.0
Over population	81.87	17.58	0.55	100.0
Famine	43.96	51.65	4.40	100.0
Low productivity of farm land	42.31	45.06	12.64	100.0
Variability of rains	38.67	48.07	13.26	100.0
Drought	32.42	56.59	10.99	100.0
Shortage of farm land	32.42	38.46	29.12	100.0
Shortage of grazing land	30.22	48.35	21.43	100.0
Desertification	28.24	57.63	14.12	100.0

All figures are in percentages.

Seen separately, 93% of the respondents considered soil erosion as very serious and 81% made it at least one of the top three environmental problems. Furthermore, 52% of the educators think that soil erosion is the most serious problem in Ethiopia. Over population and deforestation are also considered to be very serious by 82% and 90%, and to be among the three most serious problems by 69% and 55% of the respondents respectively.

Famine and low productivity of farm land are regarded as very serious problems by 44% and 42% of the respondents respectively. It is also worth noting, at this juncture, that a good proportion of the respondents thought that the problem of shortage of farm land (29%) and of grazing land (21%) as not serious. In fact, shortage of grazing

land and desertification are put at the bottom of the list of the top three problems (see details in Table 3).

Table 3: Environmental problems categorised as one of the three most serious in Ethiopia

Environmental Problems	Most serious	Second most serious	Third most serious	Total*
Soil erosion	52.22	17.22	11.11	80.55
Deforestation	14.44	27.22	13.33	55.00
Over population	22.78	25.56	21.11	69.45
Famine	6.67	8.33	8.89	23.89
Low productivity of farm land	1.11	2.22	13.89	17.22
Variability of rains	3.89	3.33	7.22	14.44
Drought	2.22	5.56	12.78	20.55
Shortage of farm land	2.22	6.11	2.22	10.56
Shortage of grazing land	0	2.78	3.33	6.11
Desertification	0	1.67	5.56	7.23

All figures are in percentages.

* 'Total' refers to the percentage (out of the grand total) of respondents who considered the given environmental problem as one of the top three.

Use and Protection of Natural Resources

The controversy on the economic, ethical and legal aspects of the use and management of natural resources is one of the issues high on the agenda for academic debates and political discussions. This is also reflected in the Ethiopian 'Federal Policy on the Environment' (EPA, 1997b) where 'sustainability' has been used as a core concept unifying discussions on almost all aspects of natural resource use and management.

It has been underlined that the concept of sustainable development acknowledges the interdependence of human needs and environmental requirements thereby rejecting the single-minded pursuit of one objective at the cost of others (UNESCO and the Government of Greece, 1997). A pursuit for development cannot, for instance, be accepted at the cost of inflicting irreparable damage on the environment. Neither can the preservation of the environment be achieved at the cost of maintaining half of the humanity in poverty.

A list containing ten environmental problems, most of which are directly related to the use and management of natural resources, is presented to be categorised by educators as 'very serious', 'serious but not very much' or 'not serious'. Soil erosion, deforestation and overpopulation are not only considered to be 'very serious' but also put in the list of the top three most serious by a vast majority of the respondents (see Tables 2 and 3). These three environmental problems are considered as very serious by more than 80% and put in the list of the top three by more than 55% of the respondents.

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This study tried to present views reflecting the two sides of the debate underlying the use and management of natural resources. Unlike the responses with respect to the value of natural resources, a remarkable division is noted in educators' views on the use and protection of natural resources (see Table 4, columns I+II and IV+V).

Table 4: Views about the use and protection of natural resources

Statements Number	(I) SA	(II) ABNVM	(III) UD	(IV) DBNVM	(V) SD	Total N= 187*	I+II	IV+V
1	36.36	21.93	6.42	12.3	22.99	100.0	58.29	35.29
2	78.08	14.44	2.14	2.14	3.21	100.0	92.52	5.35
3	29.41	20.86	3.74	10.16	35.83	100.0	50.27	45.99
4	21.93	23.53	6.42	13.90	34.22	100.0	45.46	48.12
5	12.83	4.81	6.42	16.58	59.36	100.0	17.64	75.94

All figures are in percentages.

- * 45 teachers and 142 prospective school administrators
- SA= strongly agree; ABNVM= agree but not very much; UD= undecided; DBNVM= disagree but not very much; SD= strongly disagree
- *STATEMENT 1*: 'The earth has a limited resource base and hence can support only a limited number of population'.
- *STATEMENT 2*: 'One should always take into consideration the needs of future generation while using natural resources'.
- *STATENENT 3*: 'In Ethiopia, one should be worried more about satisfying the needs of the present generation than talking about preservation of resources for the future generation'.
- *STATEMENT 4*: 'One should not blame people who sell fuel wood by using trees forests from community land because that is the only choice they have to sustain life'.
- *STATEMENT 5*: 'Clearing of forests to get more land for cultivation is better than having the forests'.

About 58% of the respondents agree to the view that 'The earth has a limited resource base and hence can support only a limited number of population'. More than one-fifth strongly disagree to this view often advanced by environmentalists to justify the need for conservation of natural resources. The majority of the respondents positively agreed with the ethical question that forms the core of debates and discussions on sustainability, that is, the concern for the future generation. Nearly 93% of the respondents agree that 'one should

always take into consideration the needs of future generation while using natural resources'.

Half (50.27%) of the educators agree that: 'In Ethiopia, one should be worried more about satisfying the needs of the present generation than talking about preservation of resources for the future generation'. The participants of this study thus seem to approve that *willingness to defer satisfaction is a virtue reserved to the affluent* (Wolff, 1972:19).

Two issues of great importance in discussions regarding resource use and protection in Ethiopia were also presented to educators. These were the cutting of trees from community land by poor people as a means of living; and clearing of forests to secure a farm plot. In the first case, the view of educators was highly divided. Forty five percent agreed that 'one should not blame people who sell fuel wood by using trees from community land because that is the only choice they have to sustain life' (see Table 4 for details). In the second case, four-fifth of the respondents (76%) disagreed that 'clearing of forests to get more land for cultivation is better than having the forests'.

Community Participation in Resource Management

Community participation is believed to be a key to the success of all kinds of activities aimed at resource management and environmental protection. It is, in fact, argued that *participation is a sine qua non for conservation, and it must be used as the core of any planning on conservation* (EPA, 1997b:12). Once the idea of conservation is accepted by the people, there will, according to EPA, be the ingenuity of almost each of the members deployed in finding measures to put it into effect.

Issues related directly or indirectly to the participation of rural population in the management and protection of natural resources were raised and educators seemed to be optimistic in all cases (see Table 5). Nearly 91% the respondents believe, for instance, that 'it is possible to turn a rural village green by planting trees on private and public land'. As to the role of the community, 94% support the view

that 'the local communities have to take the initiative themselves to protect natural resources rather than waiting for governmental directives and instructions'.

Table 5: Views about community participation in natural resource protection and management

Statements Number	(I) SA	(II) ABNVM	(III) UD	(IV) DBNVM	(V) SD	Total N= 187*	I+II	IV+V
1	70.59	20.32	3.74	2.67	2.67	100.0	90.91	5.34
2	77.01	17.11	1.60	1.07	3.21	100.0	94.12	4.28
3	56.68	27.27	5.88	6.95	3.21	100.0	83.95	10.16

All figures are in percentages.

- * 45 teachers and 142 prospective school administrators
- SA= strongly agree; ABNVM= agree but not very much; UD= undecided; DBNVM= disagree but not very much; SD= strongly disagree
- *STATEMENT 1*: 'It is possible to turn a rural village green by planting trees on private and public land'.
- *STATEMENT 2:* 'The local communities have to take the initiative themselves to protect natural resources rather than waiting for governmental directives and instructions'.
- *STATEMENT 3:* 'The local communities can work out and implement mechanisms to stop the misuse and overuse of natural resources'.

When it comes to the practicability, the percentage went a little bit down, however. Even with regard to the question as to whether this is attainable, 84% of the respondents still believe that 'the local communities can work out and implement mechanisms to stop the misuse and overuse of natural resources'.

Contribution of Education to the Use and Protection of Resources

Much has been said about the actual and potential contribution of education to resource management and environmental protection. Education, formal and non-formal, is often expected to be *a vital part of all efforts to imagine and create new relations among people and to foster greater respect for the needs of the environment* (UNESCO and the Government of Greece, 1997:15).

Nearly every participant of this study (96%) agrees that 'students at all levels have responsibility to inform their families and neighbours about the need for protection and careful use of natural resources (see Table 6). However, more than half (55%) of the educators think that 'education of the community can bring little improvement with regard to the protection of natural resources' thus communicating a clear message, among others, that education alone cannot be the solution to the complex problem of resource degradation.

Table 6: Views about the Contribution of Education to the Use and Protection of Natural Resources

Statements Number	(I) SA	(II) ABNVM	(III) UD	(IV) DBNVM	(V) SD	Total N= 187*	I+II	IV+V
1	86.10	10.16	1.60	1.60	0.53	100.0	96.26	2.13
2	37.43	17.65	2.14	8.02	34.76	100.0	55.08	42.78
3	19.25	26.74	5.35	17.11	31.55	100.0	45.99	48.66

All figures are in percentages.

- * 45 teachers and 142 prospective school administrators
- SA= strongly agree; ABNVM= agree but not very much; UD= undecided; DBNVM= disagree but not very much; SD= strongly disagree
- *STATEMENT 1*: 'Students at all levels have responsibility to inform their families and neighbours about the need for protection and careful use of natural resources'.
- *STATEMENT 2*: 'Education of the community can bring little improvement with regard to the protection of natural resources'.
- *STATEMENT 3*: 'Knowledge gained at Ethiopian schools does not help to improve the quality of land and thereby increase agricultural production'.

What is more, the respondents seem to downplay the value of education in Ethiopian schools to the improvement of the quality and productivity of land. About 46% think that 'knowledge gained at Ethiopian schools does not help to improve the quality of land and thereby increase agricultural production'.

Conclusion and Recommendations

The study was aimed at assessing the views of primary school teachers and prospective school administrators about natural

resource use and protection in Ethiopia. Many of the teachers now teaching in Kembata-Alaba-Tembaro Zone have a teaching experience in other parts of the country as well. The prospective school administrators are actually selected from all corners of the country.

What is more, both groups have a similar level of training on physical and socio-economic features characterising Ethiopia. The sample size is, however, admittedly low. All this and the technique used to select the sample (see methodology section) should be taken into consideration while reading the following sections on conclusion and recommendations.

Conclusion

On the whole, educators manifested favourable views regarding the use and protection of natural resources with an average score of 3.95 on a scale running from one to five. They seemed to appreciate the pivotal position natural resources have in the life of the poor and the need to consider the interest of the future generation while using resources. The seriousness of the problem of resource degradation in Ethiopia was also appreciated.

As to the role local communities can and should play in resource use, management and protection, educators seemed to be highly optimistic. They believed that the community could and should take the initiative to work out and administer measures for protection and proper use of resources. Moreover, students at all levels were believed to be responsible to inform the community on the need for protection of the environment. It can, therefore, be argued that teachers and school administrators could make up good partners in the various efforts to use and manage natural resources in the country.

The concern educators indicated for the interests of the future generation has, however, evaporated all of a sudden when the case was specifically related to Ethiopia. They had a great difficulty to decide on the point as evidenced by an average score of 3.0 to the

view that 'one should be worried more, as far as Ethiopia is concerned, about satisfying the needs of the present generation than talking about preservation of resources for future generation. In other words, half of the educators agreed to the view.

Though it is difficult to fully explain such an abrupt twist in the view of educators, the prevailing state of poverty in Ethiopia might have magnified the agony of the present generation to the neglect of the future. Response with regard to 'cutting of trees by the poor' (average of 2.9 on a five point scale) is another indicator that educators seem to favour satisfaction of the needs of the present generation even at the expense of environmental deterioration. It is therefore necessary to take the stand educators have on such fundamental points into consideration during future plans to enhance the contribution of education to use and protection of resources in Ethiopia.

It is also worth noting that education, by and large, is considered to be insufficient to bring about improvements in resource use and protection. This is in accordance with the view often advanced by experts that the complex problem of resource use and management requires measures like political, legal and economic in addition to education. Educators have also expressed reservation (3.1 on a scale of five) as to the contribution of knowledge gained at Ethiopian schools to improve the quality and productivity of land. The thin connection hitherto existing between school curricula and local realities may, at least partly, explain the pessimism educators manifested in this regard.

Recommendation

Educators have thus manifested a divided view (between favourable and unfavourable) regarding the use and protection of natural resources. A noticeable gap is observed between what educators think and what is advocated by the proponents of the philosophy of 'sustainability' or 'sustainable use of natural resources'. It is, therefore, essential to involve educators in the debates and discussions underlying the short- and long-term benefits of proper use of natural resources particularly for poor countries like Ethiopia

where present hardships tend to defeat the ethics of preserving for the future.

One of the most effective ways to attain this is, in the writer's opinion, to design an interdisciplinary course on *Education for Proper Use and Management of Natural Resources in Ethiopia* to be given, in its first phase, to prospective teachers and school administrators enrolled into higher institutions throughout the country. It would also be necessary to think of giving the same course (or a modified version of it) to all students of higher education as this is one of the most crucial national issues worth the attention of the future scientists, managers, medical doctors, political leaders, etc.

In view of the findings of this study and the absence of a course on environmental education (Kifle, 1995; Assefa and Yohannes, 1995), the value of such a course in creating a forum for debates and discussions on the problem of resource degradation at national and global levels would be immense. The course, if materialised, will also help the attainment of the goals of all institutions – governmental (e.g. Ministry of Education and the Environmental Protection Authority) and non-governmental (e.g. LEM- the Environment and Development Society of Ethiopia) – which have been striving to make education address the real problems facing the Ethiopian people and environment.

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