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## **Environmental Attitude of Young Nepalese and its Comparison with the Attitude of Environmentally Developed Costa Ricans**

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# **Environmental Attitude of Young Nepalese and its Comparison with the Attitude of Environmentally Developed Costa Ricans**

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## **Abstract**

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Cognition surveys on environmental attitudes were carried out in Costa Rica and Nepal for university students, and they were compared to each other from the viewpoint of cultural background. The surveys were made in classrooms using questionnaires consisted of about 60 questions. Summed results were shown for both nations on the view of values and knowledge regarding environmental problems, attitudes to the environmental deterioration, ethical responsibility to the problems, probable outcome of environmental condition in future, and so on. From the comparison between two nations, Nepalese were found to hold moderate attitudes to almost all environmental problems without expressing any clear opinions, whereas Costa Ricans have distinct and unified opinions common to all members indicating strong internalization of environmental thought.

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**Keywords:** environmental attitude, cognition survey, Nepal, Costa Rica, university students, environmental education



# **Actitud Medioambiental de los Jóvenes Nepaleses y su Comparación con la Actitud Medioambientalmente Desarrollada de los Costarricenses**

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## **Resumen**

Se realizaron encuestas cognitivas a estudiantes universitarios sobre actitudes ambientales en Costa Rica y Nepal, y fueron comparadas entre sí desde el punto de vista de los antecedentes culturales. Las encuestas se realizaron en las aulas utilizando cuestionarios consistentes en aproximadamente 60 preguntas. Se mostraron resultados resumidos para ambos países sobre los valores y conocimientos acerca de los problemas ambientales, las actitudes hacia el deterioro ambiental, responsabilidad ética de los problemas, el pronóstico de condiciones ambientales en el futuro y así sucesivamente. De la comparación entre las dos naciones, los nepaleses parecen mantener actitudes moderadas en relación a casi todos los problemas ambientales sin expresar una opinión clara, mientras que los costarricenses tienen opiniones comunes a todos los miembros que indican una fuerte internalización del pensamiento ambiental.

**Palabras clave:** actitud ambiental, estudio cognitivo, Nepal, Costa Rica, estudiantes universitarios, educación ambiental

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It has been a long time since environmental problems not only in a local scale such as the deterioration of rural and urban environment but in a global scale have grown to be an important issue in every country. Such a situation is never exceptional even for Nepal where it has been pointed out the environmental degradation of national land originating from the growth of population (Bhattari & Conway, 2008; Shrestha, Huang & Silanpaa, 2011; Wikipedia 2012a) and the increase of mountain tourism (Pandey, Chettri, Kunwar et al., 1995; Steven, 2003). United Nations General Assembly declared in 2002 a concept of sustainable development which makes us notice the significance of global environment, setting ten years from 2005 as the decade for the education of sustainable development. Since then, positive activities have been made for the formation of public attitude to protecting natural environment by many international organizations as OECD environmental directorate, UNESCO, United Nations Environmental Programme, and European Union. Under such circumstances, Nepal has also constructed a firm policy to be conducted for the environmental education (Higher Secondary Education Board, 2012). Information is now needed on what extent of effect has appeared in the public attitude to environmental problems by the education hitherto performed.

No surveys or researches have been done on the attitude of Nepalese to the environment, though there exist some on the political and educational cognition of young Nepalese (Tanigawa, 2003a, 2003b; Ayabe & Khanal, 2009), along with the values on every day life of general Nepalese (Ohno, Hirai, Asano et al., 2001). The purpose of our research is, therefore, to obtain information on environmental attitude of Nepalese and compare it with the attitude in some appropriate country, where environmental education is well developed, to estimate the effect of the education. Costa Rica is selected here as such a country, which is world-widely known as an environmentally developed country. We have already carried out in 2009 a cognition survey on the environmental attitude for university students in Costa Rica. To compare the Nepalese attitude with Costa Ricans, we have made a survey for university students in Nepal with the same contents and manners as those used in Costa Rica. As we could not find any publications which inform us of the environmental cognition of not only

Nepalese but also Costa Ricans as of the time of our survey, our results shown here are the first of this field for both countries.<sup>1</sup>

In what follows described are the results and implication of our surveys carried out in Costa Rica in 2009 and in Nepal in 2012. In the next section cultural backgrounds which have possibly directed the public attitude towards the present state are described for both Nepal and Costa Rica. In Section 3, methods and processes for the surveys are given, followed by the results and a comparison between them in Section 4. Concluding remarks are made in the last section.

## **Cultural Background of Environmental Cognition**

### **Nepal**

Nepal, surrounded by India and China, is a multi-lingual republic composed of more than 70 races. Indo-Aryan and Tibet-Myanmar races are dominant in respective regions of southern Tarai plane and northern mountain region. Cultures from these two regions, combined with the caste system, intermingle in the central Kathmandu valley to result in the realization of quite complex society. According to some published statistics (Central Bureau of Statistics, 2009; Wikipedia, 2012b), the Buddhist accounts for 5% of the total population, the Muslim for 3%, the believers of the other religions for 2%, and all the remainder of 90% is set as the Hindu. Although almost all the young think delusional beliefs and present-day society full of caste and feudalism as matters to be demolished, some part of their values is forced to be old-fashioned with religious coloring, being subjected by and influenced from the religion which their family members and guardians embrace (Upadhyay, 2001). Generally speaking, Nepalese have a tendency to avoid an individualistic behavior, obeying the group's rule and amalgamating their identity to the group's one (Dhungana, 2008; Bista, 2008).

After the eras of regulation by King under the system of constitution monarch and multi-party politics, politically confusion have been continued during these two decades due to the struggle for power among King, the national assembly and Maoists, though there have been no religious conflicts in this country. Although in 2008 the first President was selected and the constitutional assembly was convened, this

assembly was dissolved in May 2012 without any attainment of its goal. At the time of our survey, Nepal politics was again in a state of confusion, and schools and colleges were closed during a long time because of strikes.

The population of this country is 29million, its main industry being agriculture and tourism. The GDP per capita is 465\$ in 2008, the annual income of a farming family is less than 300\$ in average, Gini coefficient is 47.2, the unemployment rate is 42.1%, and the poor with the income less than 2\$ per day exceeds 70% of the nation (Department of Economics and Social Affairs, 2010; Wikipedia, 2012b, 2012c; U.S.Department of States, 2012). The rate of landowner is low in agriculture and the sanitary condition of the nation is bad (Wikipedia, 2012b). Although the potential hydropower is quite abundant, the electricity generation by hydropower is only 1% of the total energy consumption in Nepal (Nepal Economics Forum, 2011). The electricity is constantly in short supply, and its outage was lasted for 18 hours per day in the past (Nepal Economics Forum, 2011). The 91% of consumed energy is of the form of bio-energy, which brings the pollution and deforestation.

In Nepal, after graduating from the compulsory period of primary education for 5 years, a period for secondary education continues for 5 years. After these educations, there exists School Leaving Certification examination which must be cleared for students to enter colleges, but a considerable fraction of students drop out before the examination. Students seem to make a main purpose to get the Certification, rather than to obtain an education of high quality (Wikipedia, 2012c). The literacy of the person older than or equal to 15 is 48.6% (Wikipedia, 2012b).

The environmental education in Nepalese school is conducted as part of social studies as health and population education in the primary and lower secondary levels, and science and independent environmental education in higher secondary school levels (United Nations, 2012). Curriculums are considerably influenced by the United States. In those curriculums, educated are the consideration of natural environment, environmental policy, legislation and regulation, sustainable resource management, public responsibility, and so on, the time for this education being 7 to14% of the total time (Higher Secondary Education

Board, 2012; United Nations, 2012). To perform the education as such in the primary and secondary stages, it is important to train the teachers as specialists for its education. In a course to bring up the teacher in high school grades 11 and 12, it aims at the cultivation of teaching ability for environmental education for the lower level pupils as one of its purposes. In that course, education is made on ecology and ecosystem, resource conservation, natural disaster, the awareness of environmental problems, practical measures to mitigate the environmental degradation, educational materials and media for the use of environmental education, and so on (Higher Secondary Education Board, 2012). At the time of 2006, there exist no technical journals of the specific field of environmental science and environmental conservation in Nepal, so that UNESCO recommended Universities to advance the research project of global climate change by using the advantage of high altitude of this country (Bajracharya, Bhujju & Pokhrel, 2006).

Regarding eco-tourism, conservation education is performed in schools, not nation-widely, but independently in every conservation region (Bhato, 2006). Adding to these public educations, there exist non-formal educational activities operated by NGOs (Ohta, 2007; Shrestha, 2012). As for an example we can point out the CEC (Conservation Education and Communication) performed by WWF (World Wildlife Fund) Nepal Program (Shrestha, 2012). The purpose of this project is to change the behavior and attitude of teachers, students and community members to the environment towards the conservation and sustainable development through non-formal education and communication. This, however, is not in a scale of nation wide.

## **Costa Rica**

The republic of Costa Rica abolished standing armed forces by the constitution in 1948. Since then it has changed its course to an educational nation by replacing the educational expenditure with the military expenses, putting itself under an obligation to allocate the national budget to education by the amount of 6% or more of the gross national product. Since 1970 Costa Rica has poured more than 28% of

the national budget into the primary and secondary education. Educational expenses have been free in public schools. In 1983 Costa Rica declared its unarmed permanent neutrality, this leading to national stability which in turn brought the economic growth along with the industrialization by the introduction of foreign capital.

In 1949 Catholicism is determined as a state religion, and therefore 85% of the nation is now Catholics. The population is 3.8 million people, and the GDP per capita is 6600\$ in 2008 (Department of Economics and Social Affairs, 2010). The Gini coefficient is as high as 49.9 so that the disparity in wealth is quite remarkable in this country. Costa Ricans are pointed out to be high self-respect and high pride (Biesanz, Biesanz & Biesanz, 1999), or ostentatious (InfoCostaRica, 2009) in their characteristics. The area of woodland amounts to 40% of the territory, and the area of national parks and nature conservation area, where inhabits about 5% of biological species of the whole world, exceed a quarter of the country (Wikipedia, 2012d, 2012e). In 2008 Costa Rica declared to be fully carbon neutral by 2021. Costa Rica is now considered to be one of the most developed countries in the sense of environmental conservation.

After 1980, Costa Rica has adopted the school education, the environmental conservation and the ecotourism as important three issues for the environmental education, taking a policy to realize them in parallel. Although the literacy is 96% and the attendance rate in the primary school is 92.6% in 2001, the failing and drop-out rate is as high as 30% (Blum, 2008). Prior to the primary school during 6 years, there exists pre-school education for 1 to 2 years. After the primary stage it continues the junior high school for 3 years followed by the senior high school for 2 years (liberal arts course) or 3 years (vocational course) (Division de Planeamiento y Desarrollo Educativo, 2009). Environmental education up to the compulsory stage of junior high school is very dense. For instance in a textbook of “science” for the upper grade 4 in the primary school (Viquez, 2009), which is consisted from four chapters, a whole one chapter is allocated for environmental education together with the matters related to environment also in other related chapters. Moreover throughout the whole chapters, pages specialized in environmental education, “Educacion Ambiental”, are provided. Such a style is applied also in higher grade textbooks. At the



time of graduation from high school, students are imposed a Bachillerato Diploma examination, and without passing it they can not obtain a certification for high school graduate. This examination is conducted of the fields of language, science and etc. along with the environmental field. To cope with that examination, students make effort to obtain the standardized knowledge of environment and the fundamental way of thinking in environmental ethics common to all members. To enter University they must pass, furthermore, the entrance examination. Because of such successive examinations, it is pointed out (Blum, 2008) that students become only to copy information from notes and dictionaries and lean it by heart before examinations, and moreover that teachers also take only a routine way of teaching along textbooks. Such repeated and mechanical memorization, however, leads the internalization of common values regarding environmental problems within the mind of students, which leads, in turn, a feeling of guilty when they do not obey the internalized objective.

In Public Education Initiative of the social education for general public (Blum, 2008), environmental problems of the times have been widely and frequently reported through the national media like newspapers, television, and radio broadcast so that the information environment has been quite rich regarding various problems of environment. NGOs and state agencies have also developed public education in a local scale through workshops and seminars, and contributed to solve local environmental problems (Blum, 2008). On the side of ecotourism, possible realization to hold balance between environmental protection and profit has been examined among stakeholders who tried to form a network between the public and private support (Blum, 2008).

### **Cognition Survey**

A cognition survey in Costa Rica was carried out during March and May in 2009 for the university students of one of the four national universities in Costa Rica, Universidad Nacional in Heredia. Those subjects were selected randomly from the fields of natural sciences, engineering, social and human sciences, and from the first to fourth grade of the University. Using a questionnaire in Spanish, they were

asked by about 60 questions on environmental problems together with the extent of scientific knowledge, recognition of their society, view of values, and moral norm in Costa Rica. Almost all responses for questions were made by choosing one option from seven grade choices, which are extended from “do not agree it at all” to “agree it strongly”. Questionnaires filled in classrooms by 296 subjects were gathered together to make a statistical treatment. In this case the reliable width of results is about  $296^{-1/2}=6\%$ . Although the home towns of the subjects were distributed throughout the country, the neighboring districts to Heredia and San Jose were dominated over the others. The average age of the subjects was 19.8 with 28 and 17 of the maximum and minimum ages, respectively. The fraction of male was 47% and 56% of the subjects was belonging to the field of natural sciences and engineering.

Cognition surveys in Nepal, the preliminary and the final ones, on the other hand, were carried out for the students of a University and Colleges in Kathmandu region. The preliminary survey was made in English in the latter half of May in 2012 for the 463 students in their classrooms of Tribhuvan University in Kirtipur. The fraction of male in the subjects was 71.7%, and their average age was 24.5. The final survey was made, by referring the preliminary results, on three days from the end of June to the beginning of July in 2012 for the students of three colleges as subjects with the six page printed questionnaires in Nepalese by the same method as the preliminary one. The style and contents of questionnaire were made identical to those used in Costa Rica for comparison. The total number of subjects was 288 and the average age is 20.8 with the respective maximum and minimum ages of 28 and 18. The male held 68.4% of the subjects and their 50.6% belonged to the courses of natural sciences and engineering. Though the native districts of subjects were distributed throughout Nepal, those from Kathmandu, Rupandehi, Chitwan, Bhaktapur, and Dhannsa were relatively superior.

In the next section we describe the features of final response of Nepalese for some 20 environmental questions and compare them to the state of Costa Ricans.

## **Results and Discussion**

### **General Values**

Although they are not directly related to the environmental attitude, view of values and the way of living of the subjects are firstly examined. The abscissa of all figures hereafter is the choice of response, while the ordinate represents the fraction of subjects in percent who selected the choice. The statement of question to which the subjects responded is given in the caption of respective figure.

Figure 1(a) is of the question whether the thought of equality is superior to the individual freedom in their country. The right half of the figure corresponds to the superiority of individual freedom, whereas the left half to the equality. Those thoughts are supported by Nepalese with almost the same enthusiasm, suggesting that there exist two or more than two components of subjects with different sensitivities from each other. Their support, however, is not extremely positive nor negative but moderate for both thoughts. Although Costa Ricans judge the freedom slightly superior to the equality, a third of them chooses “not agree it nor do not agree it” so that the distribution of response has a peak around the center. The distributional feature, therefore, shows clear difference between two countries.

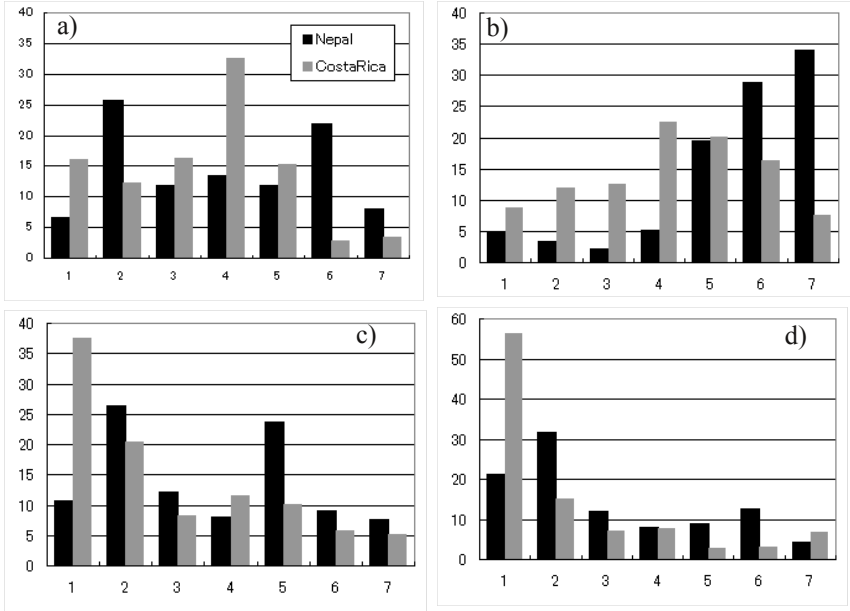


Figure 1. Distribution of a sense of life style and values for Nepalese (with black columns) and Costa Ricans (with gray columns). The abscissa corresponds to the choice; 1: not agree it at all, 2: not agree it, 3: not agree it slightly, 4: not agree it nor do not agree it, 5: agree it slightly, 6: agree it, and 7: agree it strongly, and the ordinate to the percentage of subjects who select the choice for the question (or statement) as (a): Ideologies of equality prevail over ideologies of individual freedom in our country, (b): People in our country have strong nationalism, (c): I become very uneasy when I make an action different from the other people’s one, and (d): Richness in material is more significant than richness in mind in our life.

Figure 1(b) asks whether or not the public in respective country are of nationalism. The nationalism becomes strong with shifting towards the right of the figure. Nepalese, being clearly different from Figure 1(a), strongly recognize their nation to be of nationalism. Generally speaking (as will be seen in figures later), Nepalese have a tendency to choose a moderate response without expressing an extreme reaction. In this question, however, the subjects who select an extreme choice “agree it very strongly” exceeds a third of all so that the distribution of response

has exceptionally a feature of rising towards the right. In case of Nepalese, the appearance of such a triangular pattern is limited only to this and Figure 2(g) (which will be shown later). During the period of our survey in Nepal, mutual consent among the members of constitutional assembly could not be formed on the contents of constitution to be amended. The assembly was dissolved and general strikes were repeated. Every political party was busily engaged in coping with it, and such a situation was continuously reported by the media every day so that the amount of domestic news in Nepal well dominated over the international ones. Such a social background probably became one of the causes which brought the clear response in Figure 1(b). On the other hand, the reaction of Costa Ricans is unclear which is quite different from Nepalese.

Figure 1(c) shows the extent of restlessness of mind when the subject takes a different action from others. In case of Nepalese, two peaks of affirmation and negation appear on their response, whereas only one remarkable peak of negation for Costa Ricans, thus each showing characteristic distribution to each nation. Since the subjects who regard the individual freedom as important may have confidence on their action, they are considered not to be so unsettled in their mind even if they take an action different from others. If this really is the case, this figure is not inconsistent with Figure 1(a), although they have almost reverse features to each other due to different types of question.

Figure 1(d) asks the relative importance of material and mind.<sup>2</sup> The right half of figure corresponds to more importance of material than mind. Although both nations attach more importance to the mind than the material, the response of Nepalese is relatively weak and unclear comparing to Costa Ricans. Moreover in case of Nepalese, decisive existence of subjects who regard the material as important would not be overlooked. The GDP per capita in Nepal is only 7% of that in Costa Rica. Purchasing power relative to desire, therefore, can not grow high in Nepal so that the feeling of insufficiency for materials may constantly remain in Nepalese. On the contrary to Nepalese, the reaction of Costa Ricans is extremely sharp and clear as if the subjects wrote down the memorized answer, indicating the results of the internalization of the thought in their mind by repeated education regarding the importance of mind.

### **Extent of Knowledge on the General Environmental Problem**

We firstly compare the extent of understanding about scientific facts as a measure of recognition regarding environmental problems. Figure 2(a) shows the result for the question of chemistry which asks the weight of solution which dissolves sugar. The right answer is “not agree it at all”(=1). The rate of right answer in Nepalese is 33%, and the wrong answer (the right half of the figure) 41%. In case of Costa Ricans, they are respectively 42 and 21%. A similar behavior to this figure appears also for the question on physics. Exact knowledge of fundamental sciences seems insufficient for both nations, especially for Nepalese, to accurately grasp environmental problems.

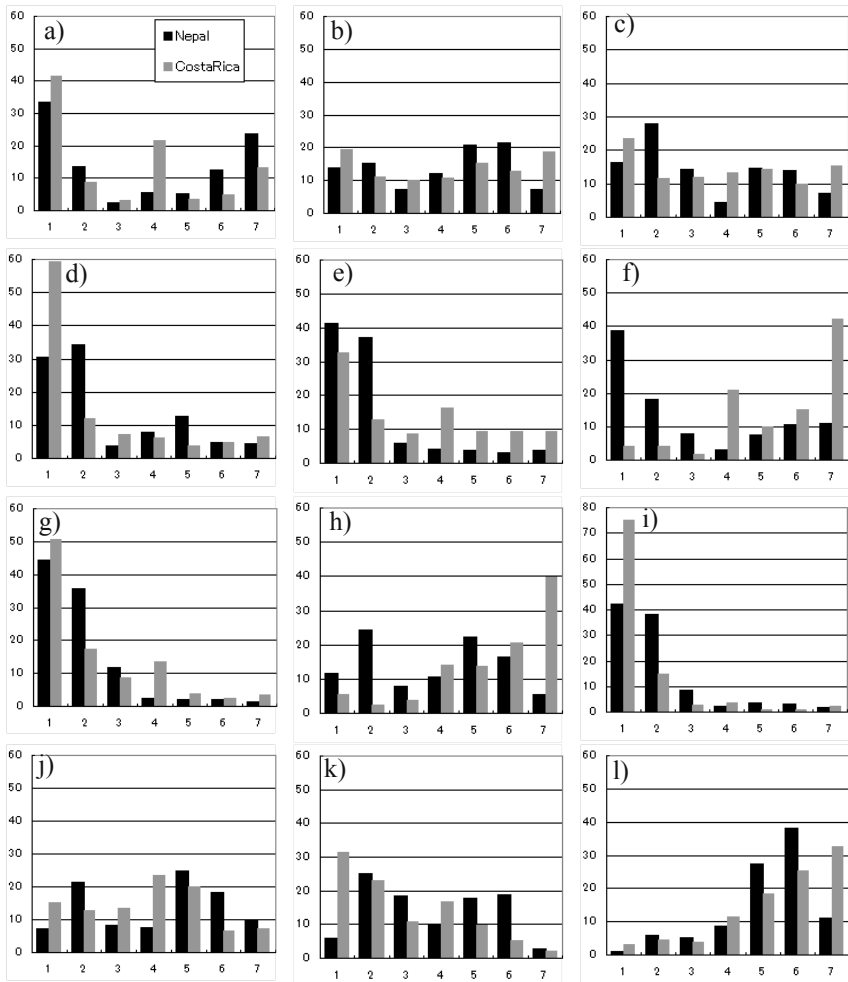


Figure 2. Distribution of attitude to environmental problems for Nepalese (with black columns) and Costa Ricans (with gray columns). The abscissa and ordinate are of the same meaning as in Figure 1, but the questions (or statements) are respectively (a): The weight of solution remains 1000 gram when we dissolve the sugar of 100 gram in the water of 1000 gram, once it is dissolved completely, (b): I roughly know the contents of Kyoto Protocol regarding the global environmental problem, (c): The consumption of energy in any form causes bad influence on global environment, (d):Environmental

deterioration in our country should be tolerated as it is a resultant thing of social advancement, (e): It does not link to the settlement of global environmental problem even if I alone reduce the consumption of electricity, (f): I never agree the construction of waste disposal facility very near my house, (g): I never want to pay any amount of money to prevent environmental deterioration in our country, (h): Car owners should pay some special expense for environmental conservation, (i): There exists no responsibility to me for the environmental deterioration as it owes to the other people's activities, (j): Our country will become a developed country under a comfortable, wealthy and safety condition of environmental problem, (k): Our country will almost sustain the present state of condition for environment and society only with its minor change in future, and (l): Environmental and living condition in our country will be gradually aggravated in future.

Figure 2(b) asks whether they know the contents of Kyoto Protocol. Since this does not ask its details, there is some doubt as to what extent such a self-declaration-type answer represents the real situation. We may be able, however, to guess a rough trend of it by using an answering pattern. The distribution of response shows respective pattern of characteristics for each country, that is, the selection of moderate choice, avoiding a clear and extreme answer in case of Nepalese, while the selection of clear answer with avoiding moderate choice in Costa Ricans. Selecting an inconspicuous and moderate answer may be interpreted as due to a historical mentality of subordination in Nepalese (Shrestha, 2009), or due to deep immersion into the strong collectivism (Bista, 2008). The clear and uniform reaction seen in Costa Ricans, on the other hand, reminds us a sort of conditional reflex reaction, and makes us imagine an origin of a specific training for something as examinations.

Figure 2(c) is for the question whether energy consumption causes bad influences on global environment. The right half of the figure corresponds to the affirmation to this question. Although the distributional feature of response roughly follows the above-cited characteristics respective to each nation, the fraction of subjects, who consider all energy not to be necessarily so, exceeds the affirmation in both countries. This may partly be due to relatively high use of renewable energy in Costa Rica like hydropower, wind and geothermal



energy, and somewhat enthusiastic proposition in Nepal for returning to the natural energy use (The Kathmandu Post, 2012a; Republica, 2012a, 2012b).

### **Attitude towards Environmental Deterioration**

Figure 2(d) represents the attitude to an opinion such that we must endure environmental deterioration which is an evidence of social progress. Though the percentages against this opinion are respectively 69 and 78% in Nepal and Costa Rica, their features follow the respective patterns characteristic to each country. Especially in Costa Rica, the appearance of a sharp negative peak is quite remarkable. This indicates complete internalization of such a thought in the mind of young Costa Ricans, which now becomes firm values common to all young people.

Figure 2(e) is the response to a statement that no contribution will be made to the resolution of environmental problems even if one restrains oneself in the use of electricity. Although the fraction of subjects who deny this opinion is high in both countries, it is conspicuous especially in Nepal as 84%, where electricity outage continues for many hours in every day because of its shortage.

Figure 2(f) is of the attitude in yes or no for constructing a waste disposal facility very near one's own residence. The distributional feature of response represents clear and contrastive difference between two nations. Strong emphasis is posed on the denial against the construction in Costa Rica, whereas in Nepal the affirmation of its construction dominates in the subjects. The psychology to shirk the construction of some sort of facility near one's house, which brings various disadvantages and inconveniences to the neighboring public though they admit its usefulness in their society, is called NIMBY (Not In My Back Yard).<sup>3</sup> The public generally oppose to the construction of waste disposal facility near their neighborhood because of the noise and malodor brought by the facility itself and by vehicles driving in to and out from it, and of its bad esthetical impression. In the region where the awareness of individual right is stronger among the public, more violently they have opposed to the advance of NIMBY facility. The activity for gaining public acceptance is, therefore, an important issue

for the side of project promotion. Although Costa Ricans are not exceptional to NIMBY, such a feeling is scarcely seen in Nepalese. Rather they seem to welcome its construction. This may be because the recognition of individual right does not yet become to mature in Nepal,<sup>4</sup> or because the waste disposal facility is so keenly needed as it surpasses the aversion to it. Otherwise Nepalese may not sufficiently know the reality of the facility.

### **Ethical Responsibility regarding Environmental Problems**

Figure 2(g) asks the subjects the willingness to pay as a form of environmental tax to prevent environmental deterioration. The right half of the figure corresponds to the payment of money. Many subjects represent their assent in both countries. On the other hand, Figure 2(h) shows yes or no on whether the car owner should pay money for environmental conservation. Although these two questions are different in the subject on who pays money, they are on the same viewpoint in replacing the compensation of environmental deterioration into money. Hence we can well understand similar response patterns of Costa Ricans between two questions (g) and (h) (though their features reversed because of dissimilar styles of questions). In case of Nepalese, however, they seem to be contradictory because the response patterns are different between these two questions. We understand the consent of Nepalese to the payment by themselves in question (g) as the recognition of “public” environment. As for the question (h), a consensus seems to be generally established in the society full of cars in that the car owner should pay the social expense to compensate bad influence exerting to society (as air pollution, noise, and road degradation) as an external cost. In case of Nepalese, however, they do not consent positively the payment of such social expense, disapproving it as high as a fraction of 44%.<sup>5</sup> This highly indicates the concept of social cost not yet pervaded in Nepalese society.

Figure 2(i) asks the responsibility for the environmental deterioration. The right half of the figure corresponds to the subjects who feel the responsibility. In both countries they are well responsible, but in the response pattern there appear the characteristics to each country such that Nepalese avoid an extreme answer whereas Costa Ricans show

clear and unified reaction. Similar reactions appear also to the question such that “we people have no obligation for conserving natural environment as it is the duty of the Government or of local municipalities” and “our country has no responsibility on the various problems on global environment because they are owed to the activities of developed countries”.

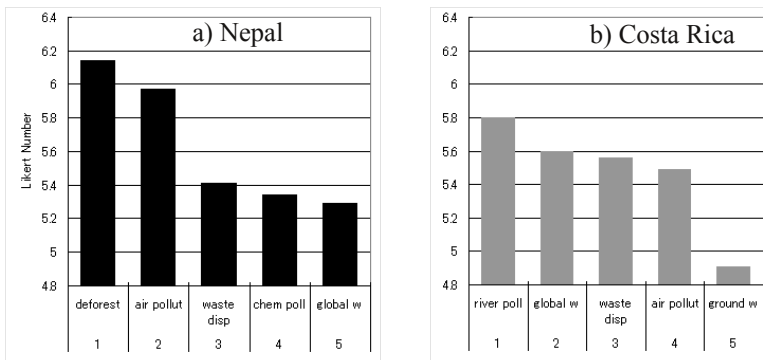
### **Conjecture of Future Environment**

How do the subjects image on the future environment of nature and society of their own country, and how do they expect it to be changed in future? Figures 2(j), (k) and (l) respectively give the distributions of response for optimistic, status-quo-continuing, and pessimistic guesses. The guess by Costa Ricans is quite obvious, because the response patterns of (j), (k) and (l) collectively indicate a definitive direction to the future, namely an absolute majority of Costa Ricans imagine natural and social environment to be necessarily aggravated in future. In Nepalese, however, we can not extract any coherence from their response. Although almost all subjects estimate the future pessimistic, Nepalese change their attitude optimistic or status-quo-continuing depending on the type of question so that their guess lacks clear directions. This implies that the environmental problems are never the issue of central awareness for Nepalese. It seems quite unnecessary for their everyday life to make clear the state of future environment. In fact, according to our preliminary survey carried out in May 2012, the subjects responded the environmental destruction as the least important problem in 14 choices of social issues in Nepal, with the expansion of jobless state as the first, the political instability as the second, and the rich and poor gap as the third.

### **What Environmental Problem is Considered to be Important?**

We examined the ranking of seriousness for various types of problems. The statement is “A given problem is the most important issue in the environmental problem in our country”, where “a given problem” is (1) chemical pollution of national land, (2) air pollution from the gas

discharged by the increased number of cars, (3) global warming and its related phenomena, (4) deforestation by falling trees, and (5) waste disposal for Nepalese, and (1) pollution of river water by agricultural chemicals and other various origins, (2) air pollution from the gas discharged by the increased number of cars, (3) global warming and its related phenomena, (4) ground water and the disputes related to it, and (5) waste disposal for Costa Ricans. Likert numbers corresponding to those five problems are (1) 5.34, (2) 5.97, (3) 5.29, (4) 6.14, and (5) 5.41 in case of Nepal, and (1) 5.80, (2) 5.49, (3) 5.60, (4) 4.91, and (5) 5.56 in case of Costa Rica, respectively. Here the Likert number is an average of the choice weighted by the fraction of the subjects who select the choice. These are shown in Figure 3(a) and (b). Nepalese recognize the importance in order of deforestation, air pollution, waste disposal, and chemical pollution with the global warming as the least important issue, whereas it is in order of river water pollution, global warming, waste disposal, air pollution, and ground water in case of Costa Ricans.



*Figure 3.* Likert number for the environmental problems considered to be important in (a) Nepal and (b) Costa Rica

### Concluding Remarks

Although our sample size may be insufficient to statistically make precise discussion, we could present the environmental attitude and its related values of young Nepalese and Costa Ricans at a first time. These data will become useful in reviewing anew the environmental education

after this in those countries. For Nepalese, suggestions may be obtained by comparing their data with Costa Rican data, together with the data of other countries (Ohnishi, Tyfour & Ito, 2005, 2012). When we compare them to Costa Rican's ones, the non-uniformity of environmental education with region together with its incompleteness, which are well indicated from comparatively complex distribution of response, seems to be the largest weakness in Nepal so that it does not make any common values internalized in each Nepalese. It also seems insufficient for Nepalese in recognizing the inter-relation between one's action and the resultant problems of environment, namely, the cause and effect relation.

We have, however, certified serious awareness and sense of responsibility for the environmental deterioration in Nepalese. On the other hand, although their reactions generally follow the environmental morals and ethics common to all countries, they still show such an intrinsic and characteristic behavior to their country as a non-NIMBY feature. Moreover in Nepal, the global environment is found just to be a circumferential problem among various problems which usually annoy Nepalese.

Our survey implies that, although some part of the attitude is formed following environmental ethics common to all people, the remainder is seemed to be formed according to the view of values of the society where they live. As for the intrinsic causes which bring such a difference in values, we think of the following three factors. The first would be the education. The recognition in what manner the disturbance by humankind to nature feeds back to ourselves is cultivated by the scientific education. According to the opinion survey by [European Commission \(2008\)](#), public attitude to the environment positively correlates to the extent of education for all classes of age. Since such a trend of positive correlation must not be restricted only to the environmental problem, the importance of public education in the developing countries with low rate of school attendance but also in developed countries.

The second is the intrinsic nationality or culture which depends on the historical background. In case of Nepalese, obscurity appears in attitude, which may be the manifestation of colonial mind or blind follower mind ([Shrestha, 2009](#)), or due to the weak individualism

relative to collectivism, whereas in Costa Ricans, decisive individualism is indicated from a response such as “I am never uneasy when I differ from others”.

The third factor is the extent of information environment which is formed by the media. In Nepal, although the information on the environment is offered to the public, it seems quite limited such that it is positively reported only on the events held on the environmental day (*The Kathmandu Post*, 2012b) without any serious criticism, for instance. This makes us imagine that the nation of itself has only a weak interest in the environmental policy. In Costa Rica, on the other hand, during the first half in 2009 when we exerted our cognition survey, the amount of information on environment provided by the media, especially newspapers, was quite large and moreover a major part of the articles were from the negative side of the problem or of its mitigation measure. Difference in the strength in information environment as such must necessarily lead the difference of public attitude between two countries. It will be of interest if quantitative analysis and discussions are made from the viewpoint of what difference in those factors leads what difference in attitude on environment.

## Notes

1 Ohnishi, Tyfour and Ito (2005, 2012) already carried out international surveys on the environmental cognition of university students in Jordan and Japan with almost the same contents as those of our case, so that we can compare our result also with their results.

2 In connection with this, the percentage of subjects who approve the opinion as “dominant values in our society are material success and progress” is respectively 65 and 56% in Nepal and Costa Rica.

3 Installations such as nuclear stations, military bases, air ports, some sort of factories, high ways and so on are all NIMBY facilities which bring some risks and pollutions around them together with negative esthetics and stigma.

4 At the time of survey in Nepal, the public in mainland China opposed to the construction of a pipe line for draining polluted-water and drove it to cancellation. According to a newspaper (*Republica*, 2012c), a report is written with a nuance that the Chinese society becomes to mature as to provoke a NIIMBY movement.

5 The 3.5% of gasoline rates in Costa Rica is used for compensating for the bad influence of cars on the environment, especially on the woodland. This, however, is not the case in Nepal.

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