



University seminar–workshop on strengthening climate change in planning education

March 1-5, 2010

University of Philippines School of Urban and Regional Planning, Diliman, Quezon City, Philippines

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PROCEEDINGS OF THE UNIVERSITY SEMINAR AND WORKSHOP

Background

Universities can help cities solve their complex problems and realize their development potential. In many countries, however, the research and training priorities of universities are not in line with the emerging priorities for sustainable urban development. At the same time, the findings of university researches are not usually disseminated amongst practitioners, and the knowledge acquired by university staff is rarely mainstreamed in the university curricula, and thus future urban practitioners are not sufficiently exposed to these key issues.

Recognizing this vital yet underutilized role of universities and education in addressing the challenges of sustainable urban development, UN-HABITAT initiated the Habitat Partner University Network. The Network is aimed at enhancing cooperation between UN-HABITAT and universities worldwide in the facilitation of exchange of knowledge, expertise, and skills among universities in developing and developed nations.

The Network also forms part of the Cities in Climate Change Initiative which addresses the collaboration with universities covering sub-regional meetings, the exchange of researchers and students, the development of university curricula, and action research in the pilot cities.

A key output of the Cities in Climate Change Initiative states that "HABITAT partner universities, local universities and local continuous learning institutions will adapt their teaching curricula and research to incorporate the issues of cities in climate change and exercise action-research in Cities in Climate Change Initiative partner cities". It also aims at linking the Habitat Partner University initiative with activities relating to Climate Change and Urban Planning.

In relation to this, representatives of higher learning institutions and urban planning practitioners from around the world gathered in a Workshop on Climate Change and Urban Planning "to reach a common understanding on how urban planning and design schools can better address climate change as an integral part of their curricula." The workshop came up with agreements on the following expected outputs: setting up of a virtual Cities in Climate Change Academy (Cities in Climate Change Academy) and Cities in Climate Change Research Clearinghouse; and mainstreaming of climate change in planning degree programs, specializations, curricula, and courses.

An initial step towards the Cities in Climate Change Academy would be the conduct of seminar-workshops in Asia-Pacific, Latin American, and African regions. University of Philippines - School of Urban and Regional Planning was selected as member-university representing the Asia-Pacific Region that was tasked to coordinate the first seminar-workshop among university professors and students in the region, while other universities in Esmeraldas/Quito, Ecuador and in Kampala, Uganda will hold similar activities for Latin America and for Africa, respectively.

The seminar and workshop are designed to be conducted back-to-back and will comprise of a three-day seminar for university students and a workshop for university lecturers. The seminar will be divided into various sessions with lectures, group exercises, paper presentations on climate change-related topics, while the workshop is aimed at standardizing the sessions towards the Cities in Climate Change Academy and conferring on how the universities can benefit from and contribute further to the Cities in Climate Change Academy. The outcomes of these activities are deemed to be the basis of the Cities in Climate Change Academy modules.

Following are the proceedings and relevant documents of the University Seminar-Workshop held in the Philippines for the Asia-Pacific Region.

Proceedings

The United Nations Human Settlements Programme (UN-HABITAT) in cooperation with the University of Philippines School of Urban and Regional Planning hosted an International University Seminar-Workshop with the theme “*Strengthening Climate Change in Planning Education*” on March 1 to 5, 2010 at Diliman, Quezon City, Philippines. This event was supported and funded by UN-HABITAT.

This seminar-workshop specifically sought to mainstream climate change into the existing syllabi and curricula of University of Philippines School of Urban and Regional Planning and to eventually provide Continuing Professional Education/Development for urban planners and practitioners at the local level, particularly among local government units and at the regional level, the Asia-Pacific, in particular.

Mr. Bernhard Barth of the Training and Capacity Building Branch of UN-HABITAT and Dr. Mario R. Delos Reyes of University of Philippines School of Urban and Regional Planning, represented their respective institutions in coordinating the event. Workshop participants included professors from the following universities: 1) Asian Institute of Technology, [Bangkok, Thailand]; 2) Civil Engineering School of the Mongolian University of Science and Technology, [Mongolia]; 3) Diponegoro University Department of Urban and Regional Planning, [Indonesia]; 4) Hanoi Architectural University, [Vietnam]; 5) Institute for Housing and Urban Development Studies, [The Netherlands]; 6) Royal Melbourne Institute of Technology, [Australia]; 7) University of Moratuwa, [Sri Lanka]; 8) University of Papua New Guinea, [Papua New Guinea]; 9) Ateneo de Manila University, [Philippines]; and, 10) University of Philippines School of Urban and Regional Planning, [Philippines].

The workshop participants and 24 university seminar participants discussed emerging issues and topics related to climate change and planning in several seminar sessions, namely: 1) Climate Change and Urban Planning; 2) Conducting Climate Change Vulnerability Assessments; 3) Conducting City Climate Change Footprint Assessments; 4) Cities and Climate Change Mitigation; 5) Cities and Climate Change Adaptation; 6) Developing Local Climate Change Action Plans; and, 7) Mainstreaming Climate Change into Existing Statutory Plans. The sessions proceeded with lectures from resource persons, group workshops and exercises, students' presentation of climate change-related research proposals, review of the proposals by other students and the professors.

On the last day of the International Seminar-Workshop, the professors came together to evaluate the final proposal drafts as part of the selection process for research grants. As a result, five University of Philippines School of Urban and Regional Planning graduate students were selected by the UN-HABITAT as grantees for their Climate Change-related research proposals. They are: George D. Esguerra (PhD Urban and Regional Planning), Proscoro Ervin A. Mundo (PhD Urban and Regional Planning), Mark Anthony M. Gamboa (MA Urban and Regional Planning), Michelle Ann M. Santillan (MA Urban and Regional Planning), and A.S.M. Saifullah, (MSc Regional Development Planning). The students will undertake their respective researches for six months with financial support from the UN-HABITAT. The implementation of the climate change studies will, in turn, be monitored by the University of Philippines School of Urban and Regional Planning.

The final activity comprised of a site visit of international delegates to one of the climate-vulnerable cities (Marikina City) in Metropolitan Manila, Philippines.

Day 1 - March 1, 2010 (First Day of the Workshop)

Morning Session

On behalf of the School of Urban and Regional Planning Dean Candido A. Cabrido, Jr., Dr. Mario R. Delos Reyes, the College Secretary and Project Co-coordinator, opened the program by giving a brief background of the International University Workshop and Seminar.

University of Philippines Diliman Vice-Chancellor for Academic Affairs, Dr. Lorna I. Paredes delivered a message on behalf of the University. She welcomed the participants to the Seminar-Workshop and expressed her gratitude to all the international participants who made their way from their respective countries to participate. She likewise thanked the UN-HABITAT for the opportunity to collaborate with the University, and remarked that the activity was especially significant for the School of Urban and Regional Planning, as it is about to celebrate 45 years of contributing to nation-building and development. It is hoped that the activity will bring more opportunities for international linkages to the university and to School of Urban and Regional Planning as it continues to fulfill its four-fold mandate of graduate education, research, training, and extension services. She expressed hope that the partnerships would prosper between the organizations present and the University of the Philippines.

The participants were then asked to introduce themselves to the rest of the group. **Annex I** provides the list of workshop participants and their respective organizations and contact details.

The following persons were recognized as members of the organizing team and of the Seminar-Workshop:

Mr. Bernhard Barth, UN HABITAT *Coordinator*
Dr. Mario R. Delos Reyes, University of Philippines School of Urban and Regional Planning *Coordinator*
Ms. Annlouise Genevieve M. Castro – *Technical Assistant*
Ms. Angelina D. Caluag – *Administrative and Finance Assistant*

The following Lecturers of the University Seminar were also introduced:

Mr. Bernhard Barth - UN HABITAT
Dr. Edsel Sajor - Asian Institute of Technology, Bangkok
Prof. Ralph Horne - Royal Melbourne Institute of Technology, Australia
Dr. Iftexhar Ahmed - Royal Melbourne Institute of Technology, Australia
Dean Candido A. Cabrido, Jr., - University of Philippines School of Urban and Regional Planning, Philippines
Dr. Mario R. Delos Reyes - University of Philippines School of Urban and Regional Planning, Philippines
Prof. Alex Ramon Q. Cabanilla - University of Philippines School of Urban and Regional Planning, Philippines
Dr. Ogenis Brillhante - Institute for Housing and Urban Development Studies, The Netherlands

Session 1: Introduction to Cities in Climate Change Initiative, the university partnership, and Cities in Climate Change Academy

For the first session, Mr. Bernhardt Barth of UN-HABITAT's Training and Capacity-Building Branch gave an overview of the University Seminar and Workshop. He discussed the Cities in Climate Change Initiative in terms of tool development and its goal of documenting good practices and lessons learned through the experiences of cities. Mr. Barth highlighted the role of universities, as partners of UN-HABITAT, in this project, particularly in the development of modules by four pilot universities in the different regions of the world. He was happy to note that the Philippines was chosen as Asia's pilot area, and was in fact, the first city to host the University Seminar and Workshop.

He then discussed the activities lined-up for the week. To the inquiry on whether the afternoon session would see changes in the schedule of activities listed in the program, Mr. Barth clarified that no major changes would be made to the flow of the seminar. He said, however, that the international

workshop participants would devote time to fine-tune some contents of the seminar and to define the particular roles of each of the lecturers and the respective sessions that they would handle.

He added that if need be, changes would only be made to the order of the lectures to complement related topics. He also stated that more importantly the workshop lecturers and participants would work on identifying the overlaps in the contents of the lectures and suggesting any helpful additions to improve of the presentations. In addition, Mr. Barth said that part of the afternoon session would be devoted to discussion of criteria for review, evaluation, and selection of students' research proposals which would be granted funding by the UN-HABITAT as best concept paper.

Mr. Barth informed the group that the University Seminar would be held from March 2 – 4 and discussions would be divided into the following climate change-related sub-topics: (1) Climate Change Vulnerability Assessment; (2) City Climate Change Footprint Assessment; (3) Climate Change Mitigation; (4) Climate Change Adaptation; and (5) Climate Change in Local Development Planning. He further stated that lectures, discussions, exercises, paper presentations, review and selection of five proposals for the UN-HABITAT Student Research Award would form part of the Seminar. It was explained that the students were instructed to sign up under a preferred subtopic, and were each tasked to prepare a proposal, which would then be presented to the body for review by their peers and by the professors from various universities. The previously agreed upon set of criteria for the selection process would be applied to identify one awardee for each subtopic.

He mentioned that on the fifth and last day of the activity, another workshop would be held for lecturers and international workshop participants to evaluate the seminar and give recommendations for further improvement of future similar activities. Lastly, he said the workshop participants would then select the five research proposals which would be awarded the grant.

Session 2: Introduction to the University Seminar

Dr. Delos Reyes gave the group a brief introduction to the three-day University Seminar, its objectives and structure, as well as the preparations done by the students prior to the seminar. Twenty-four University of Philippines School of Urban and Regional Planning graduate students were able to attend the University Seminar with around 30 selected students invited. Being the School's Project Coordinator, he met the student participants twice before the seminar to discuss and level off on the conduct of the Seminar.

During the preparatory phase, the students' commitment was encouraged in terms of preparation of their concept papers and participation in the discussions and exercises. Dr. Delos Reyes also mentioned the creation of an electronic group (Cities in Climate Change Academy-surp@yahoogroups.com), which was activated one month before the seminar-workshop, as a venue for seminar participants to share resources, experiences, and discussions by lecturers and students that would eventually be consolidated to enrich the University Seminar and Workshop experiences.

He then requested the participants, particularly the lecturers, to post copies of reading materials in the Files Section of the e-group and to add or update their profile and contact details in the Database Section. He reported that 45 members of the e-group receive messages and updates on the seminar-workshop.

Dr. Delos Reyes briefly went about the details of Student Research Awards to be given by the UN-HABITAT to five best research concept papers. He reiterated the process that the students and workshop participants would undergo with the presentation, evaluation, and selection using the following criteria:

1. Contribution to practice
2. Consistency: methodology-activities
3. Work and financial plan, feasibility and time
4. Compliance with guidelines
5. Relevance to teaching/specific module
6. Contribution to theory
7. Achievable-financial
8. Oral Presentation

It was agreed that the first seven criteria, with the first three criteria counted as double, would make up 70% of the total score, while the Oral Presentation would make up the remaining 30%. The Oral Presentation, which would give the students the chance to “sell” their ideas, was given a bigger weight percentage.

The professors were assigned to evaluate proposals under a particular topic. The topic assignments were as follows:

Vulnerability Assessment

Dr. Edsel Sajor (Asian Institute of Technology, Thailand)
Dean Palpola Mahanama (University of Moratuwa, Sri Lanka)
Dr. Maria Lourdes T. Munnariz (University of Philippines School of Urban and Regional Planning, Philippines)
Prof. Jose Edgardo A. Gomez, Jr. (University of Philippines School of Urban and Regional Planning, Philippines)

Footprint Assessment

Prof. Ralph Horne (Royal Melbourne Institute of Technology, Australia)
Dr. Georgina Numbasa (University of Papua New Guinea, Papua New Guinea)
Dr. Gloria G. Teknomo (University of Philippines School of Urban and Regional Planning, Philippines)

Climate Change Mitigation

Dr. Iftekhar Ahmed (Royal Melbourne Institute of Technology, Australia)
Dr. Phuong Nguyen Vu (Hanoi Architectural University, Vietnam)
Dr. Crispin Emmanuel D. Diaz (University of Philippines School of Urban and Regional Planning, Philippines)

Climate Change Adaptation

Dr. Robert Martens (University of Hamburg/ Ateneo de Manila University, Philippines)
Dr. Mario R. Delos Reyes (University of Philippines School of Urban and Regional Planning, Philippines)
Mr. Ershuu Purev-Erdene (Mongolian University of Science and Technology, Mongolia)

Climate Change in Local Planning

Dr. Ogenis Brilhante (Institute for Housing and Urban Development Studies, The Netherlands)
Prof. Rukuh Setiadi (Diponegoro University, Indonesia)
Dr. David Leonides T. Yap (University of Philippines School of Urban and Regional Planning, Philippines)

Afternoon Session

Session 3: Finalizing the University Seminar

The third session tackled the topics to be covered in the lectures during the University Seminar. Each of the lecturers presented the outline of their assigned topics, brief overview of their presentations and corresponding exercises for the student participants. The rest of the participants were invited to give their observations on the lectures, particularly on the contents. The lecturers were encouraged to comment, especially if they expected any overlaps in their presentations.

Mr. Barth commented that the presentation on Introduction to Climate Change, which could serve as general overview to most of the lectures, could be part of the first day module. He added that if, however, there was a different entry point to Climate Change in a lecture then the lecturer could retain it in her/his presentation.

Due to the scheduled blackouts during the week, it was decided that printed copies of the lectures would be distributed to the participants. This way, the lectures could still push through should there be a blackout in the course of the lectures.

Day 2 - March 2, 2010 (First Day of the University Seminar)

Morning Session

Opening and Introduction

For his welcome remarks, University of Philippines School of Urban and Regional Planning Dean Cabrido acknowledged the presence of the guest lecturers, international participants from the different universities, representatives from the UN-HABITAT, and the student participants of the University Seminar. He expressed his gratitude to the UN HABITAT for having chosen the University of Philippines School of Urban and Regional Planning from among the different universities in the Asian Region to be its partner in the implementation of this particular project, and in the eventual setting up of the Cities in Climate Change Academy. He hoped that this project would be the start of strong linkages, not only between the University of Philippines School of Urban and Regional Planning and the UN-HABITAT, but with the other universities represented in the seminar. Once more, he welcomed everyone to the seminar and wished everyone a most productive week ahead.

Ms. Eden Garde, Programme Manager of the UN-HABITAT Philippine Office, gave the audience a brief background of the UN-HABITAT Philippines, emphasizing on the organizations's projects in the Philippines. She particularly mentioned the on-going work of the UN-HABITAT in Sorsogon City. Ms. Garde shared that while this was a relatively new activity, the University of Philippines School of Urban and Regional Planning and UN-HABITAT Philippines had an earlier collaboration in 2005 when Dr. Delos Reyes led a team in mainstreaming the Sustainable Cities Programme/Environmental Planning and Management (SCP/EPM) in Tagbilaran City.

She further stated that the initiative on addressing climate change may be new, but was building on previous work of the UN-HABITAT. Ms. Garde shared that the Philippines was one of the first countries in Asia to be a part of UN-HABITAT's Cities in Climate Change Initiative. This project, she said, coincided with a pilot project currently being implemented in Sorsogon City, where an approach demonstrating how coastal communities in second-class cities can be built to be resilient to climate change was applied. The pilot project not only capacitates Local Government Units in coping with the effects of climate change, but also aims at coming up with similar tools that can be used at the national, regional, and even at the international level.

Ms. Garde also presented to the group the initiatives and the accomplishments of the UN-HABITAT at the national and local levels in the Philippines, to date. She shared that the results and learnings of this particular seminar would be documented and would eventually be shared with the other chosen universities which would also undertake curricula enhancement. Likewise, it is hoped that eventually, after a series of trainings held by the universities, a core of Climate Change experts would be formed, who would be able to offer their expertise to smaller municipalities in mainstreaming Climate Change into their planning activities.

Ms. Garde then congratulated the University of Philippines School of Urban and Regional Planning and the UN-HABITAT on this partnership, and wished everybody a fruitful seminar.

Introduction of Participants

The lecturers and the international participants introduced themselves and gave a brief background of their particular areas of specialization, after which introduction of the student participants followed.

The University of Philippines School of Urban and Regional Planning graduate student participants and their corresponding contact details are listed in **Annex II**.

Session 1: Climate Change and Urban Planning

Lecture: *The Cities & Climate Change Initiative, Background, University Partnership, Continuous Education for Urban Planners* – Mr. Bernhard Barth, UN-HABITAT

Mr. Barth gave a presentation on the UN-HABITAT's Cities in Climate Change Initiative which included UN-HABITAT's mission and vision, as well as the organization's role as the United Nations'

agency for the built environment. Mr. Barth presented the challenges and concerns surfacing regarding the effects of urbanization on climate change, and the objective of the Cities in Climate Change Initiative in enhancing climate change mitigation and adaptation capacity of cities in developing & least developed countries. The presentation likewise showcased the four initial Cities in Climate Change Initiative pilot areas, with Sorsogon being the pilot area of the Philippines. Mr. Barth also discussed the ultimate goal of the project in setting up the Climate Change Academy.

Discussion:

Professor Ernesto Serote, former University of Philippines School of Urban and Regional Planning Director of Training, inquired as to how the City of Sorsogon was chosen to be the project's pilot area. Mr. Barth replied that one of the major factors considered was the local government unit's strong political will, as well as the interest shown by the unit in the project. He also shared that the UN-HABITAT already had previous involvements with Sorsogon, which made them confident that the project would be carried out.

Prof. Cabanilla commented that urbanization does have a significant impact on Climate Change, but this was more so in unplanned urban areas. He also informed the group that the urban areas in the Philippines could be grouped into three categories: the highly urbanized; the urbanized; and, those in the process of urbanization.

Prof. Serote then shared his thoughts on the connection between poverty and vulnerability. The recent flooding in the Philippines in September spared no one in the economic sphere, but it could be said that the wealthy people were able to adapt better and easier than the poor people.

With regard to how cities develop in countries like the Philippines, Prof. Serote highlighted the roles of the private builders. He identified two types of private builders: 1. The Self Home Builders, who are more vulnerable, and 2. The Formal Subdivision Developers, who are more enlightened, and should, in fact, be the target partners of public policy makers. Prof. Serote observed that the poor were always being blamed for putting themselves in harm's way, but in reality, they did not have any other place to go.

Another query was made on whether non-governmental organizations were tapped to participate in the project activities in Sorsogon. Mr. Barth replied that the NGOs are, in fact, stakeholders in the project. A number of consultative meetings were held with NGOs who willingly participated.

On the topic of urbanization in the Philippine setting, Dr. Zenaida A. Manalo, a professor at University of Philippines School of Urban and Regional Planning, shared that the landscape of the Philippines had largely been influenced by private builders. It is in the highly urbanized areas where one can find planners who are highly capacitated. Dr. Manalo opined that the CEOs and other heads should be where they can reach out to so as to determine the development of a certain area.

Adding to Dr. Manalo's statement, Prof. Serote felt that the elective officials are the ones that they have to reach out to. He shared that the University of Philippines School of Urban and Regional Planning had conducted many trainings, but the people they have been training over the years were the technical people, and not those at the higher level. There should also be a need to reach out to the decision makers, not only those at the lower level of an organization.

Lecture: Climate Change and Urban Planning – An Overview – Dr. Mario R. Delos Reyes, University of Philippines School of Urban and Regional Planning

Dr. Delos Reyes presented an overview on Climate Change and Urban Planning. The lecture started off by showing the gradual increase in publications on climate change and climate change and planning from the years 2000 to 2008. From there, a discussion ensued on Climate Science which covers the Climate System and Climate Variability. The lecture also covered Climate Change in the Global Aspect as well as in the Philippine Setting.

Dr. Delos Reyes also gave the audience a picture of the direct impact of Climate Change worldwide (i.e., on food, water, ecosystems, extreme weather events, and so on), zeroing in on the Philippines, where the effects of Climate Change have been particularly felt in the number and intensity of tropical cyclones. Indirect impacts of Climate Change were also shown, such as the increase in occurrence of certain diseases. Dr. Delos Reyes concluded his lecture by stating that climate change mitigation should be a planned act. A brief film clip on waste to energy in Payatas Dump Site entitled, "From Tragedy to Opportunity" relating to climate change mitigation was shown after the lecture.

Discussion:

Mr. George Esguerra, a student participant inquired if the Philippines should focus more on adaptation rather than mitigation, considering that the country is only a minor emitter of green house gases. He also wondered how the two initiatives in the Philippines – the Climate Change Act of 2009 and Disaster Risk Management – work hand in hand, considering that two different organizations have been tasked to handle each initiative.

Prof. Serote shared that in the case of the Philippines, Indonesia, and even Japan, Climate Change has been identified as one of three major triggers of natural disaster, - with volcanism and earthquake being the other two triggers. On the average, twenty-seven typhoons visit the Philippines per year. According to Prof. Serote, Disaster Risk Reduction is a more generic concern, while Climate Change falls within the framework of Disaster Risk Reduction. One of the projects initiated by the World Bank is to prepare local governments to be more disaster-risk sensitive in the local governance process. It was argued that the approach to disaster risk management should serve as a way to classify high-risk and low-risk areas. For the low-risk areas, local government units should integrate disaster risk consciousness into the local planning process, instead of pushing for immediately preparing the local government unit for disaster preparedness. The reason for this is that as the local government units implement these plans, they are also able to address, in the long term, the potential risks they face. Adaptation is more relevant in high-risk areas. In such areas, mitigation and adaptation may be used, depending on the situation in the area.

One of the participants commented that measures taken by local government units are mostly regulatory. Other market-based measures, most of which are handled by the private sector, complement these regulatory measures. Market-based interventions come in the form of direct development measures such as building structures (e.g., those implemented in coastal areas), but the local government units normally cannot afford such large-scale projects. One option is for the local government units to explore Build Operate Transfer arrangements to finance such projects.

Dr. Sajor observed that real estate developers tend to be influential in Southeast Asia. He cited the example of cigarettes, in which consumer behavior is easily altered due to massive information dissemination of cigarette companies. He emphasized that the same kind of massive information dissemination should be applied to housing projects by real estate developers. It was pointed out that real estate developers in the Philippines, such as Ayala Land Incorporated use Climate Change for marketing purposes by banking on the “eco-friendliness” of their projects.

In addition to strategies of the university, Prof. Mark Anthony M. Morales of University of Philippines School of Urban and Regional Planning suggested offering trainings on changes in building codes and the like to municipal building officers, especially those tasked to implement or enforce laws.

A student participant inquired if there are any plans to cascade these Climate Change information to common people/citizen. To this, Dr. Delos Reyes answered that the feedback may be done by way of trainings. The training division of the University of Philippines School of Urban and Regional Planning, for instance, could develop a training module or program that can be offered to local government unit officials and staff.

Prof. Serote then replied to one of the queries made by a participant on the mandate, instead of being optional, establishment of Environment and Natural Resources Offices in the local government units. According to Prof. Serote, the optional nature of the office is no longer valid, especially with the enactment of a number of legislations (such as the Clean Air Act, Clean Water, Ecological Solid Waste Management Act, etc.) identifying/authorizing the Environment and Natural Resources Offices as implementing units of these laws. Due to these recent developments, Environment and Natural Resources Offices have become mandatory in local government units.

On another note, Prof. Serote, however, cautioned against the suggestion of warning real estate developers' potential clients on the dangers of a particular project (e.g., its location along a fault line or within a hazardous area). He cited the experience of the late Dr. Raymundo Punongbayan, then Director of the Philippine Institute of Volcanology and Seismology, who warned the public about buying houses located along fault lines. As a result, real estate developers came after him. Prof. Serote maintained that any entity should be prepared for the consequences, such as court actions, etc., of giving out warnings/advisories to the public.

Another query was made on how to influence the behavior of citizens with regard to environmental issues. It was determined that awareness, alone, does not effect behavior change; rather, a mix of tools is needed to accomplish this kind of change. Dr. Ogenis Brillhante of Institute for Housing and Urban Development Studies, The Netherlands shared that the institute's approach in terms of influencing behaviors of organizations towards environmental awareness is through a mix of soft and hard instruments.

Dr. Delos Reyes then asked the student-participants to share what they, as planners, policy makers, or even as ordinary citizens, could contribute in helping address the issues, concerns, and challenges brought about by Climate Change.

Some of the responses were as follows:

- Conservation of energy and water;
- Integrating Climate Change in elementary school curricula;
- Networking for awareness;
- Maintaining a vegetable garden at home;
- Use of carpool;
- Minimizing the use of non-biodegradable materials such as plastic bags;
- As part of an NGO network, assistance in disseminating information at the community/grassroots level;
- Be involved in volunteer work for ecotourism programs; and,
- As an ordinary citizen, adopt alternative sources of energy such as the use solar panel at home and converting methane gas, etc.

Afternoon Session

Session 2: Conducting Climate Change Vulnerability Assessment

Lecture: *Climate Change Vulnerability Assessment for Cities: Some Important Issues* – Dr. Edsel Sajor, AIT

Dr. Edsel Sajor of the Asian Institute of Technology, Bangkok, Thailand conducted Session 2, by giving a lecture on climate change vulnerability assessment for cities. Dr. Sajor presented the different definitions of the term “vulnerability” and focused on the social dimension of vulnerability and its two types: the Individual and the Collective. Determinants and causes of vulnerability in the individual and collective as well as the data and tools that may be used to analyze each type of vulnerability were likewise identified. Dominant vulnerability assessments have been observed to be largely focused on the physical impact, more focused on rural systems, more focused on the macro scale, purely quantitative and maintained a positivist approach, and ignored local knowledge.

Discussion:

The discussion started off with a query of one student participant on what composite indices can be best used. Dr. Sajor replied that one may use composite indices to simplify his assessment, but only to a certain extent. He warned against oversimplifying, as this may distort the real picture.

Another question on whether a combination of the individual and collective vulnerability assessment could be made was posed. Dr. Sajor answered that this is possible, but the assessments may not be finished at the same time; sometimes, the assessment will have to start at the top or city level, and other times, it has to commence from the bottom, or the individual level. He added that vulnerability assessment may be used for prioritization in planning activities, and so one has to take care that the instruments/methodologies used are accepted by the community.

Prof. Serote inquired if both the scientific method and the local/community-based assessment methods may be used. He shared that while the local methods were highly dependent on local knowledge, the problem lay in finite human memory. On the other hand, the scientific method may not be understood by the locals if applied to the community. He asked if there was a way to integrate the two methods.

Dr. Sajor said it was possible to combine the two methods in making an analysis, especially since the results produced by both instruments show plenty of intersections. He warned though that it may be difficult to combine the tools.

Ms. Laidis Mamonong, a representative from the UN-HABITAT Manila, and Program Coordinator for the Cities in Climate Change Initiative Project in the City of Sorsogon shared that the vulnerability assessment tools used in the projects were those on qualitative assessments of adaptive capacity.

Student Paper Presentations:

1. *“Assessing the Vulnerability of Coastal Communities in the Municipality of San Juan, La Union in the Face of Climate Change”* by Janina Karla R. Domingo
2. *“Understanding the Vulnerabilities of Urban Poor Communities and their Ways of Coping with Floods: A Case Study of Communities along the Tullahan River in Quezon City”* by Lorraine S. Mangaser
3. *“Vulnerability Assessment of Hundred Islands National Park to Climate Change”* by Genevieve Grace P. Ranchez
4. *“Vulnerability Assessment and Hazard Mapping of Climate Change-Induced Flooding in Angono, Rizal”* by A. S. M. Saifullah

Group Exercise:

The group exercise was tied to the students' paper presentations. The student participants were divided into four working groups and were tasked to do a “peer review”. Each group was assigned to give constructive critique based on Dr. Sajor's presentation to one research paper. The following questions guided the groups in their review:

1. Identify and specify the principal focus of this proposal in terms of dimension of vulnerability:
 - a) Bio-physical/nature dimension
 - b) Built environment/infrastructural dimension
 - c) Social dimension
2. What particular dimension will complement in a big way the present principal dimension focus of this proposal? Why?
3. If you like to strengthen further the component of social dimension of this proposal, what data-gathering or data analysis tool will you add? Justify. (Only 1 or 2).

Paper Evaluation:

1. “Assessing the Vulnerability of Coastal Communities in the Municipality of San Juan, La Union in the Face of Climate Change” by Janina Karla R. Domingo

Group 1 gave their critique and the following comments on Ms. Domingo's paper:

- **Primary: Bio-physical**
The study talks about the accelerated sea level rise which greatly affects the coastal areas of the study area.
- **Secondary: Social-dimension**
The research should have focused more on the social aspect of the study. Climate Change vulnerability studies prove more significant if they are related to the impacts to the people than to the physical environment. The study should have also considered national and local political realities.
- **Methodology/recommendations to improve the research**
The research can benefit from:
 - a. More primary data gathering *i.e.*, face-to-face interviews, stakeholder consultation, roundtable discussion or focus group discussion with *barangay* officials (given that the research proposal indicates gathering secondary data from government agencies);
 - b. More (intensive) demographic data on the affected communities. *i.e.*, livelihood, number of people dependent on fishing, tourism, etc;
 - c. Comprehensive review of the Comprehensive Land Use Plan (if any) or recommendation to prepare one (if none); and,
 - d. Increase the proposed budget to reflect realistic costing.

2. “Understanding the Vulnerabilities of Urban Poor Communities and their Ways of Coping with Floods: A Case Study of Communities along the Tullahan River in Quezon City” by Lorraine S. Mangaser

Group 2 assessed Ms. Mangaser's proposal, and the comments of the group were as follows:

- The research proposal focused solely on the social aspect of vulnerability.
- There should have been more focus on the built environment scene as the study area is situated in an urban area and not in the wilderness.
- To further strengthen the proposal, certain aspects may be included:
 - a. In terms of individual vulnerability, look at household level data, such as age composition, gender, and literacy rate.
 - b. With regard to collective vulnerability, the methods proposed were appropriate but should also include participatory approaches, social mapping, and the like.

In addition to the comments made, Dr. Sajor also suggested the introduction of a dynamic perspective that would look at where the community envisions itself to be in the future in terms of development. That way, he emphasized, an assessment may also be made in terms of the vulnerability of the next generation.

3. "Vulnerability Assessment of Hundred Islands National Park to Climate Change" by Genevieve Grace P. Ranchez

Group 3 rendered evaluation on Ms. Ranchez' paper, and the following points were raised:

- The principal focus of the proposal is on the biophysical aspect as the scope of the research is ecotourism in the study area;
- It was observed that the framework had taken into consideration all the aspects (i.e., social, biophysical) but the group recommended that more factors pertaining to the social dimension must be added;
- The group recommended including visitors and boatmen as respondents to have a holistic perspective of the area as the proposal stated limited respondents in terms of sectoral coverage. Tapping additional sectors of respondents, it was stressed, would strengthen the research methodology.

Dr. Sajor agreed with the last point made by the group. In addition, he suggested that the study might have a spatial angle to it, and the researcher may also look into this.

4. "Vulnerability Assessment and Hazard Mapping of Climate Change-Induced Flooding in Angono, Rizal" by A. S. M. Saifullah

Group 4 evaluated Mr. Saifullah's research proposal, and gave the following comments:

- The paper is about the hazard/exposure only. Sensitivity and adaptive capacity (the other two elements of vulnerability) are not covered. It would have been better if the preparedness of the people and other institutions were discussed as well.
- The research focuses more on the spatial dimension, i.e. mapping of the hazards, but the assessment of the potential damage is not included in the session.
- The recommendations of the group are:
 - a. For the researcher to focus on the social dimension because Angono is mostly a residential area;
 - b. Other tools that may be used are qualitative data analysis and institutional mapping;
 - c. The portion on economic impacts should be deleted. This may be the subject of a separate research. The economic impacts may be difficult to assess if the research will be focused on vulnerability assessment.

Dr. Sajor also agreed to the suggestion of institutional mapping. He commented that this may not be easy, and would have to be done properly.

Day 3 - March 3, 2010 (Second Day of the University Seminar)

Morning Session

Session 3: Conducting City Climate Change Footprint Assessments

Lecture: Session 3.1: “*Conducting Climate Change/Carbon Footprint Assessments: Overview*” - Dr. Iftekhar Ahmed

Dr. Iftekhar Ahmed of the Royal Melbourne Institute of Technology, Australia gave an overview on conducting climate change/carbon footprint assessments. He shared that one of the main sources of carbon footprint is greenhouse gases. He stated that, in the year 2004, there was a recorded 49 billion tons of global CO₂ emissions, of which the major greenhouse gases were: CO₂, CH₄, N₂O, SF₆, PFCs, and HFCs. In terms of regional greenhouse gases emissions, the amount of daily waste disposed to landfills/dumps was 6000 tons and the rate of solid waste generation was 7% increase per year which is estimated to double in 10 years. Given this, potential CO₂ reduction is estimated to be 250,000 tons CO₂ per year and potential Carbon Emission Reduction is \$2.5 million per year (at a rate of \$10/tons).

He also informed the session that individual carbon footprint pertains to the amount of carbon emissions that result directly and indirectly from daily activities and lifestyle. He added that calculating carbon footprint could identify which activity generates more carbon emissions and in turn could encourage lifestyle changes that would help reduce emissions.

Dr. Ahmed drew attention to several online carbon footprint calculators that help calculate emissions and compare with the rest of the world. However, carbon footprints may vary according to the calculator as they vary by country, by activity and by the methodology behind the calculations. One idea is to calculate carbon footprints using different calculators and take the average, or use a calculator that is targeted for the local context. He enumerated the following carbon footprint calculators that are available online: The GreenAsia Group; Earthlab; FightingGlobalWarming; and ZeroFootprintOffsets.

He suggested some helpful tips in using online carbon footprint calculator, such as the following: 1) Check the electricity consumption from utility bills or use the monthly national average; 2) The average amount of domestic waste generated per person per day in 2008 was 0.84 kg; 3) Check distances between countries; 4) Use local databases to check vehicle distance. He shared some additional information, in that most websites offer carbon offsetting schemes, where carbon offsets to neutralise carbon emissions can be bought and that payment is used to fund carbon-reducing projects such as for renewable energy, energy efficiency, and reforestation. He, however, emphasized that there was an imperative to first find ways to reduce carbon footprint before offsetting remaining emissions.

Discussion:

One of the student participants asked if the methane produced by mangroves and rice paddies makes them “harmful”. Dr. Ahmed answered in the affirmative. He added that the reason Indonesia, for instance, has very high methane contribution is because of their palm oil industry.

Lecture: Session 3.2: “*Conducting Climate Change Footprint Assessments: Whole of Life Approach to Buildings Sustainability*” - Prof. Ralph Horne

Prof. Ralph Horne of the Royal Melbourne Institute of Technology, Australia lectured on holistic approaches to buildings sustainability. He stated that ecosystems need sustainability strategies and these strategies need actions, which in turn need tools. He briefly discussed the important elements of environmental management “toolbox” which should be considered in any interventions: policy and planning, decision-making; environmental management system; community engagement; and behavioural change.

Life Cycle Assessments as part of the decision-making component was also discussed. ISO 14040 or Environmental Management defined Life Cycle Assessments as the “compilation and evaluation of

the inputs and outputs and the potential environmental impacts of a product system throughout its life cycle” while Weidema (Life Cycle Assessments Consultant) has this definition of Life Cycle Assessments, “The purpose of life cycle studies is to assess the environmental impacts of potential product substitutions (the choice of one product instead of another)”.

Prof. Horne stressed the value of Life Cycle Assessments in that it provides a systematised procedure for impact assessment. He elaborated on the four components of undertaking a Life Cycle Assessments: a) Goal and scope definition which involves establishing function units for the study, selecting relevant system boundaries, and identifying indicators and data requirements; b) Inventory and analysis by describing the system in terms of interconnected unit operations, collecting data on environmental exchanges for each unit process, and summing the environmental exchanges across the whole product system; c) Impact assessment and comparison of indicators from the inventory table and, d) Interpretation and analysis of data in relation to various factors, such as social welfare, human health, ecosystem health, etc.

He presented a case sample of Life Cycle Assessments by looking at the elements of houses in Victoria, Australia. He pointed out the Victorian conditions in terms of energy and greenhouse emissions influence building of houses in the area. He identified that the goal was to provide a transparent energy evaluation of the materials used to construct a house, of the operational energy required to heat and cool a house, and of maintenance required for the house.

He stated that for a typical house to be considered functional, it has to have a 50-year life span, including construction, operation, and maintenance. The assessment applied the following methods: modelled operational heating and cooling energy results from AccuRate inputted into SimaPro to allow calculation of the total energy demand; single common plan for a relatively ‘standard’ single storey 3-4 bedroom house; and four options for materials, i.e., brick veneer and concrete slab, mud brick and concrete slab, weatherboard and concrete slab, weatherboard and timber floor.

The **Life Cycle Assessments** generated the following findings: although not a good insulator, mud brick has high thermal mass and performs well in summer when solar gains are limited through shading and heat transfer is slowed, and diurnal temperature changes allow stable inside temperatures and in early autumn/winter when thermal mass still provides temperature stability; but performs less well in cool climate winters, when deep eaves block out winter sun and poorly insulated thermal mass results in high winter heating loads. Prof. Horne cited too that Isaacs (2004) concluded that design, window orientation, and floor type are important factors in determining the performance of a passive solar earth house. According to a study by Isaacs (2004), if the heating system was changed to wood-fired, then the mud brick house would perform very badly on total energy requirements but could perform well on greenhouse gases, provided wood sources are used.

Next, Prof. Horne discussed Environmental Auditing, which measures performance systematically and based on objective evidence and generates a fair, repeatable, and documented evaluation report. He added that in order to reduce the energy overhead, an effective audit needs to cover the purchasing, management, and engineering. He differentiated environmental audit with environmental impact assessment as the latter is applied with current/proposed impacts and with environmental management system, which is a systematic way of responding to interactions with environmental issues.

He then discussed the implementation of Environmental Management System and ISO14001. These tools, he maintained, offer means to improve energy efficiency systematically. He stated that all management systems should follow the basic steps: write down what you know; do what you have written down; audit to demonstrate you are doing what you have written down. He also mentioned that ISO14001, a fundamental management tool for quality/environmental standards is based on the Denning Cycle and proceeds with the following steps Plan; Do; Check; Act/Modify.

Prof. Horne concluded his presentation with the following points:

- Environmental aspects of construction and buildings are too complex to be managed *ad hoc*.
- There is a toolbox for managing environmental impacts across different projects and situations.
- Impacts occur throughout the life cycle and Life Cycle Assessments is a useful tool to understand and compare total impacts.

- ISO14001 is a key tool for environmental management of projects, buildings, organisations, etc.
- Embodied energy is not dominant but can be expected to become more so as H+C performance improves
- Environmental impact rating tools need more rigorous Life Cycle Assessments underpinning
- The next phase of Building Regulation should include embodied energy and other Life Cycle Assessments impacts

Discussion:

A student participant inquired if the total area and population of a particular country have to be considered when conducting carbon footprint assessment. Prof. Horne replied that these data are taken into account if the assessment to be done is on a per country basis.

Prof. Cabanilla added that there are other simpler tools for assessing carbon emissions, such as input-output analysis. Simpler and more indigenous techniques such as this, he emphasized, should also be introduced in the country so that the people can appreciate the tools, especially if these are to be used at the community/cultural level. He asked that some concepts be clarified as well; he wanted to compare if some concepts that were presented are understood/interpreted in the same way in different countries.

As regards the ISO14001 tool, Mr. Barth agreed that the whole process is expensive and relatively complex. But there are cities that have been strongly pushing for the development of ISO standards for Life Cycle Assessments and for Vulnerability Assessment as well. There have been debates, too, on whether these tools are necessary, or if there are other inexpensive methods which can be used.

Dr. Robert Martens of the University of Hamburg/ Ateneo de Manila University opined that it would be interesting to compare types of houses/structures in the country, such as the traditional *Nipa* hut, as against a hybrid version of the *Nipa* hut, and concrete houses. Dr. Ahmed shared that he was involved in a study similar to this in Indonesia, where four types of houses were compared.

Student Paper Presentations:

1. *"An Assessment of the Carbon Footprint of the Tourism Industry in Boracay Island, Philippines"* by Maria Carmela M. Ibañez
2. *"Examining the Adaptation of Green Design Strategies in Mitigating the Effect of Urban Heat Island in Central Business Districts: The Case of Makati and Ortigas"* by Louwie A. Gan
3. *"Visioning and Backcasting for Sustainable and Low Carbon Transport Planning: Case Study for Metro Manila"* by Herbert G. Fabian
4. *"Greenhouse gas Emissions Accounting for the Ayala Center, Makati City, Philippines: GIS-Based Inventory with the Participation of Building Administrators and Locators"* by George D. Esguerra

Group Exercise:

Once again, the students were asked to do a peer review on the research proposals that were presented. They were provided the following guide questions:

1. What is the system proposed for the study and how realistic is the goal and scope for the project?
2. Is the proposed method appropriate and to what extent is it likely to help address the question?
3. What data and analysis is proposed and is this available and appropriate to the scale of the study?

1. "An Assessment of the Carbon Footprint of the Tourism Industry in Boracay Island, Philippines" by Maria Carmela M. Ibañez

The group evaluating the research proposal of Ms. Ibañez gave the following comments:

- The system covered by the proposal is the assessment of carbon footprint focused on transport, accommodation and aqua sport facilities, more particularly on energy and fuel use. It will study the operational aspects of these facilities and will not cover the pre-construction/investment phase.
- The proposed method is appropriate but not adequate.

- The group identified the following issues:
 - a) The period covered by the study (April-May 2010) coincides with Philippine election period which could pose a constraint in terms of data gathering;
 - b) The availability of baseline data (for the years 2008, 2009, and 2010);
 - c) Concern on the accuracy of data that would be gathered from the respondents (mostly, tourism suppliers). Some would be hesitant to provide accurate data and would have an inclination to paint a good picture of their respective businesses;
 - d) As to the survey of visitors, there is a concern as to how the results of the survey from the visitors would fit into the results of the survey of the tourism suppliers;
- There was no mention of how the researcher planned to analyze the data gathered. The group suggested that, for instance, techniques such as triangulation be used to confirm/verify the survey results.

Dr. Sajor added that there was no statement on how the baseline data was organized in 2008. He said this could pose a problem if the student plans on doing a diachronic study. Another potential problem lies in the data gathering and conduct of surveys with the corporation/private firms regarding the subject matter. He cautioned the researcher that the corporations would not want to be politically incorrect in their claims. If so, it would be difficult to make the triangulation with other hard facts.

Prof. Horne suggested that the study be scaled down. The researcher would have to determine where to put emphasis, and to state the scopes and boundaries of the study to make it more doable/manageable. He also suggested that the student use the information in the Review of Related Literature to help put focus on the study.

Dr. Ahmed added that the researcher should likewise state how the lessons from the local level (Philippines) can be applied in the wider region (Asia-Pacific).

2. “Examining the Adaptation of Green Design Strategies in Mitigating the Effect of Urban Heat Island in Central Business Districts: The Case of Makati and Ortigas” by Louwie A. Gan

The second group gave the following comments on Mr. Gan’s paper:

- The system proposed is to come up with an inventory. The group noted that the paper identified too many parameters/objectives, but was not clear on what it seeks to achieve in the end. Also, the area covered was too large.
- Taking into consideration Question 2, the paper should show the impact of heat islands to greenhouse gas emissions, describe further the transect method, identify the sample size (taking note of the size of the population in the study area), and as a result determine the costs for the survey.
- Concerning the statistical treatment of the data, the outcome should be compared with the areas (this should be clarified as well), as this would affect the budget of the study.

Prof. Horne added that the researcher should clarify how the heat island effect fits into the green building master plan. For this, there should be more explanation on the analysis. He also asked if the causality had been established. Lastly, the study should also be clear on how factor analysis would attribute to the researcher’s analysis.

3. “Visioning and Backcasting for Sustainable and Low carbon Transport Planning: Case study for Metro Manila” by Herbert G. Fabian

The third paper that was critiqued received the following comments:

- The research focuses on visioning using backcasting approach for the transport system of Metro Manila. The conventional method is forecasting, as backcasting is new phenomena. As such, the involved stakeholders considered in this research should be clear about the terminology.
- There may be some difficulties in getting complete sets of data relevant to the research.
- In Focus Group Discussions and surveys of transport users, representatives from CBOs and NGOs can be included as stakeholders with officials. The tools for analyzing quantitative data should be clarified. Indicators should also be set to show whether the researcher is hitting his targets.
- The research is outcome-oriented and may be useful for policy formulation and planning.

Dr. Delos Reyes commented that the conceptual framework will need to be modified. The researcher will likewise have to expound on the tool that will be used (such as the one developed by the Clean Air Initiative), as this is not yet clear in the proposal. Also, the researcher may consider a smaller study area.

Prof. Horne asked whose vision it would be, and who would be involved in the study. He maintained that while the proposal showed promise in terms of method and technique, it did not amount to a PhD dissertation proposal. He suggested drawing more broadly on critiques of the application of backcasting (looking into critical literature). Likewise, the researcher should look at what implications this particular case study shall have to other similar studies in the future (how would the researcher argue that this application is valid).

4. "GHG Emissions Accounting for the Ayala Center, Makati City, Philippines: GIS-Based Inventory with the Participation of Building Administrators and Locators" by George D. Esguerra

The final group critiqued Mr. Esguerra's paper, and gave the following comments:

- While the study may be realistic, the questions that the study posed may not be as easy to answer;
- Likewise, the proposed method for the study may not be appropriate. More discussion/ elaboration should be done.

Mr. Barth maintained that while the study may be ambitious in terms of its scope, it was still a good entry point for a PhD dissertation. He advised the researcher to elaborate on how Geographic Information Services would be utilized in the study. Also, Mr. Barth suggested that the questionnaire be reviewed to assess on how useful it would be to the study, and to see if it would be understood by the intended respondents.

Mr. Barth held that since this was intended as a start-up for a dissertation, it had to determine what new knowledge would be generated from the study. As for the scope, it was suggested that the study be scaled down (one option is to conduct the study as an initial research), as the budget for the study can only cover the start-up for the dissertation.

Afternoon Session

Session 4: Spatial Planning, Building and Construction for Climate Change Mitigation

Lecture: Session 4.1: Overview - Dr. Iftekhar Ahmed

Dr. Ahmed presented key concepts such as sustainable energy use, water and waste management, urban agriculture and reduction of 'heat island' effect with vegetation that are relevant to planning and building for climate change mitigation. He noted that sustainable development is generally accepted as a leading approach to planning, restructuring and design of cities and regions. He emphasized the need for urban planning with mixed and high-density land use, adequate public transport and public space that is accessible to both pedestrians and cyclists.

Providing context to climate change mitigation, Dr. Ahmed held that previous design approaches applied in Europe, USA, or Australia cannot serve as a blueprint for Asia or vice versa. He however noted that there was scope for lesson sharing and that low carbon cities design should be based on local conditions and regional traditions. He cited several building designs, transportation, pedestrian, and open spaces system, urban agriculture, as well as recycling practices that are traditionally found to be appropriate for a particular climate. He posed the challenge of transforming these experiences into the contemporary situation and demands of modern society in favour of low carbon urban development.

Dr. Ahmed pointed to the experience of Curitiba, Brazil as one of the best examples of urban planning which has the following features: a trinary road system, two-way street in opposite directions surrounding a smaller two-lane street with an exclusive lane for express buses; a city centre transformed into pedestrian precincts; street of flowers with gardens tended by street children; Integrated Transport Network with just one fare between all points; more car owners per capita than anywhere in Brazil and population doubled since 1974, yet car traffic has reduced by 30%; lowest air

pollution level in Brazil; lower density developments on land further from roads to reduce traffic from main roads; linkages to surrounding areas with economic development axis; and other practices that promote economic and environmental sustainability.

Discussion:

One of the student participants asked how open spaces may be incorporated to high-density cities, especially those in the third world, where urban areas are overpopulated. He also asked for more examples of settlements that have good waste management practices.

Dr. Ahmed answered that innovative practices such as installing roof gardens and levels of green are some examples. As for good waste management practices, Dr. Ahmed cited the particular case of the City of Hanoi in Vietnam.

Lecture: Session 4.2: "Planning and Building Low Carbon Futures" - Dr. Iftexhar Ahmed

Dr. Ahmed also lectured on ecologically sustainable design in the built environment. He first recounted the impacts of development with built environment, some of which are resource depletion, habitat loss, natural and human-made changes in the landscape, chemical pollution incurred before, during and after construction.

Next, he discussed several integrated approaches to low carbon development. For buildings and built environment, Dr. Ahmed suggested taking into consideration issues related to: SITE which include building placement and solar access, topography, environmental concerns, infrastructure issues, solar access, water run-off, and the local climate; WASTE AND POLLUTION such as waste segregation, reuse-reduce-recycle practice, and cleaning and maintenance; ENERGY such as impact of energy use during construction, daylight, HVAC (Heating, Ventilating, and Air Conditioning) services, and building regulation requirements; WATER such as during- and post-construction design to reduce water use and harvest rainwater, Water Sensitive Urban Design, grey and black water recycling; MATERIALS such as life cycle understanding of materials use, maintenance issues, and microclimate changes; COMMUNITY which includes dissemination and behavioral changes, and indoor environment quality which consists of documenting, monitoring and post-occupancy evaluation.

He also cited several sample buildings that take into consideration the ecological and environmental sustainability in their designs: Rotating Tower in Dubai; ING Building in the Netherlands; British Pavilion Expo 1992; Menara Mesiniaga in Malaysia; Commerzbank Tower in Frankfurt; and National Library in Singapore.

Discussion:

Dean Cabrido inquired if the ratings were meant only for built structures, for the building design, or for the materials used in building the structure.

Prof. Horne replied that there are ratings for the design of a building, as well as for the built structure. Dr. Ahmed added that retrofitting of buildings may be rated as well. When asked if the Australian Government provides incentives for structures that receive a certification for being identified as green building, Prof. Horne replied that while the rating system is currently being utilized by the government, it does not provide any grants or incentives for these structures.

Another student asked if there were green building materials that could be used in the construction of a building. Prof. Horne answered that some green building materials come in pre-fabricated forms. Mr. Barth shared that green building cost around 5% more than the regular buildings, but the payback comes sooner, and there are more benefits to it in terms of running the building (e.g., lower overhead costs, etc.). As to how retrofitted buildings are rated, Prof. Horne maintained that the rating is based on the refurbishment tools used to retrofit the structure.

Student Paper Presentations:

1. *"Reducing Carbon Footprint through Urban Agriculture: A Case Study of Community-Based Garden in North Fairview Subdivision, Quezon City"* by Michelle Ann M. Santillan
2. *"Implement the Use of E-Jeeps in the Entire Makati to Mitigate the Impacts in Climate Change"* by Renita P. Palisoc

3. *“Waste Prevention to Reduce Green House Gas Emissions: Understanding the Socio-cultural Behavior and Effects for Enhanced Solid Waste Management Policy in Quezon City, Metro Manila”* by Muhammad Indra M. Kurniawan

This time, the peer review was not utilized. Each of the international participants and the local faculty will instead review a research paper, and give his/her critique and recommendations to help improve the proposal.

1. “Reducing Carbon Footprint through Urban Agriculture: A Case Study of Community-Based Garden in North Fairview Subdivision, Quezon City” by Michelle Ann M. Santillan

Dr. Georgina Numbasa of University of Papua New Guinea was tasked to review Michelle Ann Santillan’s paper, and she gave the following comments:

- With regard to the methodology, the following points were raised:
 - The research location should be clearly stated in the proposal
 - The research tools to be used should also be made clear (how will the study proceed)
 - The research design also needs clarification (in terms of qualitative and quantitative). With regard to the quantitative data, the proposal should state what tools will be used to measure the distance of the roads from one location to another.

Prof. Horne also made some comments on the proposal:

- Transportation might not be an important factor in the study. He suggested that the researcher look at literature on urban gardening, as it is largely connected to greenhouse gas emissions mitigation. When looking at urban gardens, the researcher should also consider the socio-cultural values attached.

2. “Implement the Use of E-Jeeps in the Entire Makati to Mitigate the Impacts in Climate Change” by Renita P. Palisoc

Prof. Phuong Nguyen Vu gave his assessment on Ms. Palisoc’s paper:

- Prof. Vu inquired if the e-jeeps would also be used for tourism purposes.
- Another issue raised was on the safety and accessibility of the e-jeeps for children and for persons with disabilities.
- Other considerations for discussion include the efficiency of the e-jeeps, and also their contribution to the reduction of urban traffic.
- Also, classify the objective of the study to make it clearer.
- Indicate the sample (e.g. interviewees and other respondents)

Prof. Horne also added that it would be worthwhile to look at the broader context of urban transport policy. He suggested considering the use of renewable energy for other equipment such as computers, etc.

3. “Waste Prevention to Reduce Green House Gas Emissions: Understanding the Socio-Cultural Behavior and Effects for Enhanced Solid Waste Management Policy in Quezon City, Metro Manila” by Muhammad Indra M. Kurniawan

Dr. Palpola Mahanama of the University of Moratuwa was tasked to critique Mr. Kurniawan’s proposal, and the following comments were given:

- The research should highlight the social issues in the discussions;
- The researcher should figure in the production and consumption aspects that contribute to solid waste production;
- The last objective, which is: “To contribute to the formulation of effective solid waste prevention strategies as attempts to reduce greenhouse gas emissions” may not be possible to attain.
- The methodology is not very clear in terms of the variables to be used.
- The budget should be adjusted to suit the limited time given to finish the study.

Prof. Horne gave additional comments as well. He felt that the methodology indicated in the study was not the right one and that there needed to be a triangulation of the gathered data. There was also

confusion in terms of the focus of the study, and he suggested that the researcher look at the social practices rather than the behavioral aspects. As regards the questionnaire/survey instrument, Prof. Horne commented that the data might be at risk in terms of accuracy. He also suggested focusing on the What root (i.e., what garbage is being generated) or on the Why Root (i.e., conducting household Interviews, interfacing with their household practices).

Group Exercise:

To close the session, the lecturers facilitated a group exercise/workshop wherein seminar participants were asked to undertake a low carbon planning and building for the University of Philippines School of Urban and Regional Planning. They were particularly asked to develop a relevant sustainability definition and checklist and use the same to analyse the building's carbon/environmental performance including appropriate social, ecological, and economic criteria, and explaining their relevance to Manila and the Philippines. The groups were also asked to choose at least one area, and make their recommendations for measures that could be taken to improve sustainability outcomes for the University of Philippines School of Urban and Regional Planning building.

Day 4 - March 4, 2010 (Last Day of University Seminar)

Morning Session

Session 5: Cities and Climate Change Adaptation Sectoral Session

Lecture: “Climate Change Footprints and Disaster Risk Management” - Dr. Candido A. Cabrido, Jr.

To situate the session on Climate Change and adaptation at the local level, Dr. Cabrido started his lecture by sharing observations and predictions that have been made on Climate Change in the Philippines. Particular to the observations were the extreme weather conditions that continually manifest, from increase in temperature to the changing weather patterns, and the occurrence of stronger/more intensified typhoons and other weather disturbances. It has been predicted (using the General Circulation Model) that the greatest impact in the rise in temperature will be felt mostly in Eastern Mindanao, Samar, Quezon, Western Luzon, Metro Manila, and in other highly urbanized areas in the country. The impacts of climate change in towns and cities vary from heat waves, to increased frequency in flooding, increased health hazards, effects on the country's potable water supply, and landslides.

The presentation showed the catastrophic impacts that the change in the climate has had in the various parts of the country, such as the flooding that occurred in Leyte on 30 November 2006, the landslides in Guinsaugon, Leyte on 17 February of that same year, and the floods and mudslides in Quezon in November 2004.

Dr. Cabrido went on to discuss the vulnerability of the population as a result of these disasters. Particular to this was the more recent flooding brought about by Typhoon Ketsana/Ondoy in September 2009, when an unexpected rainfall volume of 448 mm fell within a 12-hour period. There was a discussion on the “return periods” of such kinds of flooding, where the overflowing of river channels every so many years is to be anticipated. Maps were shown to further show the extent of flooding that occurred in Marikina City.

Dr. Cabrido then went on to explain the Prevention-Mitigation-Preparedness Framework for Disaster Risk Management by showing how certain measures can be taken to help prevent, mitigate, and prepare for an impending disaster. Dr. Cabrido likewise tackled the post-disaster phase and measures.

Discussion:

A participant asked that since a particular typhoon is calculated to have a return period of 180 years, did it mean that the country will not expect another disaster similar to Typhoon Ondoy's gravity in the near future.

Dr. Cabrido replied that while the National Hydraulic Research Center computed a 180-year return period, it did not mean that the country should be complacent. Prof. Cabanilla added that the computation of the return period was based on statistical probability, but a similar disaster may still occur tomorrow, or the next day. The probability of it occurring goes higher, the closer it gets to the 180-year mark.

Lecture: "Climate Change Adaptation in Urban Areas" – Dr. Mario Delos Reyes

The presentation of Dr. Delos Reyes focused on Climate Change adaptation in urban areas, particularly those found in developing countries. Developing countries are hard hit by Climate Change and the occurrence of disasters makes the urban areas even more vulnerable and the need for adaptation even more essential.

The statistic that shows 30-60% of the population in the urban areas live in informal settlements or slum areas calls for heightened focus on these areas in developing countries. Adding to the problem is the fact that drainage networks in the cities rarely cover more than half of the city's population. Climate change, thus, tends to pose new threats and constraints to these areas and adaptation becomes crucial. He, however, emphasized that adaptation was impossible without basic protective infrastructure and services, as well as special programs addressing the most vulnerable communities, sectors, groups or individuals. In order to achieve the needed adaptation in urban areas, dramatic changes in the effectiveness of local governments and agency support are required.

Dr. Delos Reyes also showed how Climate Change Adaptation is a developmental issue, not only in the Philippines, but in the Asia Pacific Region and the rest of the world. The Philippines has taken steps to address this issue through the National Adaptation Programmes of Action, which recognizes the connection between local development and adaptation. Local innovations are seen as the driving force behind the successful implementation of national policies.

The lecture also discussed adaptation options for urban areas, such as: climate proofing of urban infrastructures; upgrading of the city's storm/rain water drainage; establishment of an early warning system; and, upgrading of slum areas which include the relocation of extremely vulnerable settlements and infrastructure, the introduction of insurance schemes, and accessing financing mechanisms. It can be said that adaptation is successful in a particular area when there is good local knowledge about hazards, risks, and vulnerabilities; the most vulnerable are identified; and the area is supported by land use management that delivers development and protection as well as expansion of protective ecosystems. Most of all, successful adaptation may be reflected in the support given by the citizens and civil society, as shown in its capacity and willingness to work with the government.

Dr. Delos Reyes also briefly discussed the concept of mainstreaming climate change, and identified possible barriers to adaptation mainstreaming. According to him, the barriers include: limited understanding of the nature and extent of risks and vulnerabilities; lack of knowledge on adaptation; lack of policies, standards, regulations, and legal or regulatory restrictions, lack of funding or restricted access to finance, and the differences in the willingness to accept uncertainties. Dr. Delos Reyes also presented statistics on the coverage of adaptation measures in other countries, as well as the costing of such activities by the different funding agencies.

The presentation also showed courses of action, such as building of adaptive capacities that can counter the impacts of climate change. According to Dr. Delos Reyes, the success of building adaptive capacities banks heavily on the role of the local government, particularly the building of an Local Government Unit's competence and accountability. Government policies should likewise support and encourage the contributions of those at the lower level (i.e., individuals, households, communities, organizations, and the like). The adaptation capacity of rural areas should also be empowered.

A slide was likewise flashed to show the status of adaptation in Organization for Economic Cooperation and Development (OECD)-member countries. From there, the different adaptation projects currently being implemented in the country were also identified.

Lecture: “Proposals for Climate Change in Metro Manila: Floods” – Prof. Alex Ramon Q. Cabanilla

The presentation by Prof. Cabanilla dealt on the perennial problem of flooding in Metro Manila, and the measures that the government has so far taken in order to address them.

Prof. Cabanilla first showed maps of the whole Metro Manila area, including the water tributaries (major river systems) that run through the different cities, as well as the major geographic zones identified within the area. Maps were likewise shown to give the audience an idea of the areas which have been identified to be most vulnerable to the effects of climate change. He then briefed the audience on the Metro Manila Development Authority– the coordinating council tasked to oversee and advise local governments on metropolitan affairs.

The presentation went on to illustrate the problem of flooding in Metro Manila. The major causes can be categorized into two: the natural causes (rainfall, river overflows, and excessive rainfall from weather disturbances); and the man-made causes (urbanization, dam failure, and watershed activities). Prof. Cabanilla also tackled the historical perspective, showing the trends of flooding from the 1970s to the more recent flood occurrences in Metro Manila. The major intervention of the government to counter the problem has so far been through structural flood control.

The key issues and concerns identified in the presentation were on the social, legal, cultural, engineering, political, and information aspects. Particular to the social aspect is the concentration of urban poor communities in hazardous areas such as flood plains. On the legal aspect, the problem of encroachment was identified (such as the residential and commercial extensions of structures in areas that should be kept clear of any infrastructures). On the cultural side, the existing mentality of having to live with flooding was identified as a key concern.

The engineering aspect showed the need for the government to give more emphasis on a structural approach in flood management. Other key issues identified were weak database in flood control planning and management, emphasis on relief and rescue operations by national and local officials in a flood. With flood coordination being a complex process, various government agencies, as well as the local government units, have been given various tasks to help address the problem. Prof. Cabanilla also explained past flood control projects that have been implemented.

Prof. Cabanilla then gave a brief discussion on the river basin methodology in flood management. In planning for climate change, he emphasized the need for a metro-wide disaster preparedness plan and a more integrated flood management as well as the adoption of the risk analysis approach for food hazard mapping, the importance of having an effective data management and flood forecasting system. In addition, the need for a family-based warning system and the establishment of evacuation center network were also identified.

To end the lecture, Prof. Cabanilla concluded that the long-term perspective to dealing with flooding was to keep the population away from floods. And this could be done through continuous and repeated reminders and building up on public awareness. Floods cannot be prevented but its disastrous effects can be mitigated by proper understanding. Prof. Cabanilla concluded that flood management always starts with an understanding of the flood hazard, so that mitigating measures can be locally identified and adapted, and a committed partnership between the local government, and NGOs and the affected communities can be reached.

Discussions

One of the student participants asked if it were advisable to give the Metro Manila Development Authority police power. Prof. Cabanilla answered that what might be needed is not police power, but a

reengineering of the bureaucracy, and putting in the right posts people who are more technically-oriented. The student clarified that he meant giving back the inherent power of the Metro Manila Development Authority to enact ordinances to manage Metro Manila, and in effect, have more control over the metropolitan. Prof. Cabanilla answered that the difficulty in this is that there are Metro Manila Development Authority Laws and Local Government Laws that need to be dealt with. He maintained that for these laws and these organizations to work together, the Metro Manila Development Authority Chairman must have to reach out to the Metro Manila mayors.

A member of the audience asked how community development plans figures into the different plans for Metro Manila, and if these community plans can actually complement higher level plans. Another question was also if there exists any integrative law on resource management, just like in other countries such as New Zealand. The student observed that the Philippines has an overload of mandates; thus the need for an integrative law. Prof. Cabanilla answered that there are interplays of three different dimensions in planning; the technical, political, and socio-cultural dimensions. And all three need to be taken into consideration.

As a rejoinder to the query on Metropolitan Governance, Prof. Serote shared that the current chapter of Metro Manila Development Authority deliberately made the metropolitan very weak. To strengthen it (whether there is a sense of providing it with police power), there should be a move to make it a legitimate political unit, just like a province. In terms of its organization, there should be an elected governor. Right now, the head of the Metro Manila Development Authority is a political appointee, and his responsibility is limited to being a coordinator among the Metro Manila Development Authority component Local Government Units. With regard to the power of plans and their ability to create change, Prof. Serote maintained that plans cannot be implemented solely through an administrative basis. There is still a need for political support. Further, it should be enacted into law.

As for the socio-cultural issue, Prof. Serote opined that no group of people in Metro Manila relish living near or along water bodies. The only communities who have always been known to be lakeshore dwellers are the Maranaos and the Badjaos from Mindanao, who live near sea waters. Prof. Serote mentioned that for those communities found living near water bodies, the reason for this is not cultural; rather, they did not have a choice because the better areas have already been occupied by those better off. He added that the problem is more socio-political rather than socio-cultural, as these people are victims of socio-political conditions/dynamics.

Prof. Cabanilla shared that a survey was done back in 1998 among the people in the cities of Navotas, Malabon, and some areas in Valenzuela in Metro Manila who happen to live in the flood-prone areas of these Local Government Units. He stated that in time, people get accustomed to the conditions they live in.

Student Paper Presentations:

1. *"Climate Change Adaptation: Evaluating the Early Warning System in the Context of Disaster Risk Management in Marikina City, Philippine"* by Consolacion P. Crisostomo
2. *"Factors for Adaptation to Climate Change of Coastal Cities: Measuring Costs for Batangas City"* by Denise Marie I. Encarnacion
3. *"An Assessment on the Local Government Units and Local Communities Climate Change Adaptation Measures: A Case Study on the Marikina River and Pasig River Basin in Metro Manila, Republic of the Philippines for the Period June 2010 – March 2011"* by P. Ervin A. Mundo
4. *"Building a Climate-Resilient Sorsogon City through Land Use Planning: Mainstreaming Gender-Sensitive Climate Change Adaptation Measures in the City's Comprehensive Land Use Planning Process"* by Mark Anthony M. Gamboa

1. "Climate Change Adaptation: Evaluating the Early Warning System in the Context of Disaster Risk Management in Marikina City, Philippine" by Consolacion P. Crisostomo

Prof. Rukuh Setiadi, who was assigned to review Ms. Crisostomo's paper, gave the following recommendations:

- It should be clear in the paper if early warning systems are already in place in the study area.
- Prof. Setiadi asked whether the framework was adopted from others or was designed by the researcher.

- Prof. Setiadi recommended narrowing down the survey on human settlement to a smaller section of the population (e.g., a smaller informal settlement) so that the study could be more manageable in six months.

Prof. Cabanilla gave a general comment by asking what the expected outcome/s of the study would be. According to Prof. Cabanilla, if all proposals indicated the study's expected outcome then it would help the lecturers and international participants to realistically determine the appropriateness of the schedule and the research activities.

Complementing the earlier comment, another guest cited several considerations to help improve the study:

- The proposal should indicate how the outputs will be translated in operational terms/research activities.
- The proposal should be clear on its expected outputs.
- If the researcher wants improvement in the early warning system, three factors/components will have to be looked at:
 - a) The community that will be surveyed
 - b) Marikina's city goals
 - c) The Early Warning System of PAGASA??????
- The proposal should also be selective in the sampling of the communities, and not necessarily cover the whole of Marikina.

Dr. David Yap suggested that the researcher look at other studies conducted on flooding in Marikina. He also suggested that the study be dovetailed to the one conducted by the Philippine Department of Public Works and Highways on the recent Typhoon Ondoy.

2. "Factors for Adaptation to Climate Change of Coastal Cities: Measuring Costs for Batangas City" by Denise Marie I. Encarnacion

Dr. Ahmed made the following comments on Ms. Encarnacion's research proposal:

- The research should provide details on the short-term and long-term effects of climate change.
- The study identified a lot of objectives. Dr. Ahmed suggested that the number of objectives be narrowed down to three to make the study more feasible.
- The researcher should also be clear on whether the study will focus on coping (which usually is short term) or adaptation (which covers the long-term).
- The researcher should likewise indicate how the data analysis is to be undertaken.

Dr. Delos Reyes also suggested revising the conceptual framework and expanding data collection to include the different government line agencies in the Philippines, such as PAGASA??????, PHILVOCS?????, etc.

Should the researcher need new data, Dr. Yap suggested that she can look at the new Batangas Comprehensive Land Use PPlan which had just been updated by University of Philippines Planning and Development Research Foundation, Inc., the foundation arm of the University of Philippines School of Urban and Regional Planning.

3. "An Assessment on the Local Government Units and Local Communities Climate Change Adaptation Measures: A Case Study on the Marikina River and Pasig River Basin in Metro Manila, Republic o the Philippines for the Period June 2010 – March 2011" by P. Ervin A. Mundo

Dr. Ershuu was given the assignment to review Mr. Mundo's paper, and his comments were the following:

- How does the researcher input scale to find out the rate of output;
- He also advised the researcher to choose the stakeholders located in the area; and
- Likewise, he held that the researcher should look into data on people's education, and relate it to planning and disaster.

Prof. Cabanilla agreed that the scope of the study was too big; a whole team might even be needed to do it. He asked the researcher to clarify what the expected outputs of the study would be. A more

extensive discussion on the methodology should also be done. With regard to the timetable, Prof. Cabanilla pointed out that the proposed topic would only make up a component of the dissertation but which can very well be developed into a dissertation.

4. “Building a Climate-Resilient Sorsogon City through Land Use Planning: Mainstreaming Gender-Sensitive Climate Change Adaptation Measures in the City’s Comprehensive Land Use Planning Process” by Mark Anthony M. Gamboa

Prof. Jose Edgardo Gomez, Jr. reviewed Mr. Gamboa’s paper and inquired as to how much value the literature on gender-sensitivity would add to climate change sensitivity. He further inquired if Sorsogon City was significant in any way in terms of gender-sensitivity (look into potentials and deficiencies) he suggested that the researcher look into planning documents to see if the city had adaptation measures in their local plans.

- Prof. Gomez also urged the researcher to look at the actual process of planning, particularly how the people plan (participation planning). Also, focus on the awareness of the people on Climate Change measures. Moreover, the researcher should look at the manifestations of Climate Change Adaptation Measures in the city’s planning documents.
- With regard to the second objective, if gender-sensitivity were mainstreamed, what would the implications of this be, and how this would change the planning process.
- As for the timetable, practical considerations would also have to be taken into consideration. The Philippines has a different planning cycle, and as such, Prof. Gomez suggested that the researcher interview past officials.

Dr. Delos Reyes also gave his comments on the research proposal, particularly on the research objectives, which can be narrowed down, (some may also be collapsed).

Dr. Sajor shared that years back, a project in China (the building of the Mekong Dam) was implemented without stakeholder participation. As a result, the flooding caused by the dam caused transboundary issues, affecting farmlands as far as Thailand, Vietnam, and Cambodia. Dr. Sajor maintained that these kinds of issues may be avoided so long as the researcher is able to involve the stakeholders.

Afternoon Session

Session 6: Sectoral Session (Comprehensive Planning)

Lecture: “Comprehensive Climate Change Planning and Mainstreaming Climate Change into Statutory Plans” – Dr. Ogenis Brillhante

The last of the lectures was handled by Dr. Ogenis Brillhante, centering on the mainstreaming of Climate Change into local planning. The lecture commenced with a short discussion on the Principle and process of planning in city planning. Several definitions were presented to define the urban, city and town planning system. Spatial planning was discussed in particular, as it includes all levels of land use planning, including urban planning, regional planning, environmental planning and national spatial plans. Spatial planning was also differentiated from land use planning as being wider in scope and provides a more inclusive approach to consider the best use of land than traditional ‘land-use’ planning. Land use planning, on the other hand, follows an approach that focuses on the regulation and control of land whereas spatial planning provides greater scope for the Council and other organizations to promote and manage change in the area.

Dr. Brillhante emphasized on the role of planning in influencing societal actions, which in turn can slow the pace of climate change:

- The planners deal with basic issues as community design, built environment, transportation networks and use and increasing development density;
- The built environment is a primary contributor to climate change and greenhouse gas emissions. This makes planning central to any policy solution

Likewise, Dr. Brillhante maintained that planners may have a significant effect on climate change mitigation through a variety of actions. Some of these include:

- Encouraging higher density development, reducing vehicle kilometers travelled, using green building techniques, increasing green areas, and supporting alternative energy sources; and
- Addressing the effects of climate change including rising sea levels, greater drought conditions and flood control in planning for adaptation.

Different approaches taken by several cities in mainstreaming climate change into their local planning activities, policies, and plans were likewise presented. The need for the integration of plans, both horizontally and vertically, was also discussed. Examples of horizontal integration (such as the South African City of Durban in South Africa, the City of Sao Paulo in Brazil, and the City of Toronto in Canada) and vertical integration (such as national plans in the UK, Sweden, and Netherlands) were cited to illustrate how climate change can be mainstreamed to national and local plans.

From there, Dr. Brillhante talked about the concept of mainstreaming climate change into statutory plans and comprehensively planning climate changes, which proposes two approaches to more effective mainstream climate changes into the statutory plans:

1. Making climate change vulnerability, mitigation and adaptations considerations mandatory into the existing Strategic Environmental Assessment and Environmental Impact Assessment legal structure; and
2. Making climate change vulnerability, mitigation and adaptation considerations mandatory into the national spatial planning system.

To conclude his lecture, Dr. Brillhante gave the following points:

- Mainstreaming of climate change issues has to take place in all stages of urban planning for all types of urban planning processes;
- An effective climate change approach will demand the development of clear frameworks tackling different issues. Examples of such frameworks may include the following:
 - The development of a coherent climate change policy giving directions to assess the impacts and vulnerabilities of the cities and the development of respective mitigation and adaptation measures into the plans, program and projects;
 - Communicating these directions to citizens and to the other city departments to include them in all sectoral plans, programs and projects together with their respective adaption and mitigation measures.
 - A good framework for climate change should also integrate the existing local disaster risk management plan or system.

Student Paper Presentations:

1. *“Local Development Planning for Slums: Localizing Climate Change Plans to Welfareville, Mandaluyong City”* by Ceazar Ryan C. Aquino
2. *“Effect of Integrated Coastal Management on the Adaptive Capacity of Coastal Communities to Climate Change Impacts: An Analysis of Stakeholder Perceptions”* by Eusebio R. Jacinto

1. “Local Development Planning for Slums: Localizing Climate Change Plans to Welfareville, Mandaluyong City” by Ceazar Ryan C. Aquino

Prof. Setiadi reviewed Mr. Aquino’s research proposal and gave the following comments:

- The context of climate change in the study should be made more explicit, particularly the impact of Climate Change to the study area. Also, the researcher could also look at the context of Climate Change Planning at the national level (this should be made clearer);
- Also, Prof. Setiadi warned against the use of assumptions, as this could be dangerous (give more justifications for such assumptions); and
- As for the objectives and methodologies of the study, Prof. Setiadi observed that they were not in line with the idea of the research.

Dr. Brillhante also commented that while he found the title of the study interesting, he was not sure what the study aims to achieve. The aim of the study is also clear, but the objectives are mixed up. The researcher should be clear on the main objective of the study. The methodology was also incomplete – the researcher should also explain how data that will be gathered from the questionnaire will be treated.

2. “Effect of Integrated Coastal Management on the Adaptive Capacity of Coastal Communities to Climate Change Impacts: An Analysis of Stakeholder Perceptions” by Eusebio R. Jacinto

Dr. Mahanama was tasked to comment on the paper of Mr. Jacinto, and the following suggestions were given:

- Dr. Mahanaman found it difficult to understand the research question. It was not clear what the research aimed to achieve.
- Dr. Brilhante also observed the same problem. There were a lot of definitions in the paper, but they were not too sure what the end result of the paper would be.
- It was suggested that the theme of the paper be clarified/made more complete.
- The conceptual framework must also be more original.

Group Exercise

The students were asked to break into two groups for the last exercise. The first group was to answer the following questions:

Group 1:

- a. Review the concept proposed for mainstreaming climate changes into the statutory plans: comment on it and suggest improvement
- b. Use this proposed concept to formulate a modified concept for the Philippines.

Group 2:

Identify two plans of the Philippines planning system and propose how climate change could be integrated into them

Day 5 – March 5, 2010 (Second Day of the Workshop)

Morning Session

OVERALL EVALUATION

Evaluation from Seminar Participants

Four of student participants were asked to share their comments and suggestions on the Seminar. They are; Mr. Mark Anthony M. Gamboa, Ms. Michelle Ann M. Santillan, Ms. Maria Carmela M. Ibañez; and Ms. Janina Karla R. Domingo.

They shared that the whole seminar was a learning experience. It was too bad that not all the student participants who were slated to attend were present during the three days. It was also observed that the faculty participants outnumbered the students. During the lectures, some of the faculty members also tended to digress from the topic on hand. Also, some of the topics were not clear to the students. With regard to the intended participants of the workshop, they felt that the private sector should have been included in the audience.

Another question raised was on research proposals presented by the student participants. The students inquired about the next steps to be taken, particularly for those proposals which will not be given funding by the UN-HABITAT.

They then gave comments on the lectures that were conducted:

- Footprints and Mitigation
 - While the lecture proved interesting, it would have been better if the transport sector/transport industry were included.
- Vulnerability
 - Ms. Ibañez said that the group workshop conducted during this particular lecture was helpful.
- Adaptation
 - For this particular topic, inputs from an international/foreign lecturer would have been interesting.
- Local Planning
 - The local planning lecture would have been more aptly covered by a Filipino lecturer.

Case studies delivered by the international participants would likewise have been helpful in understanding the topics, as it would have given the students a picture of the situation in other countries. Ice breakers could also have been held in between lectures.

The students commented that the logistics should be more organized. She also commented that there should be coffee and food set up inside the lecture venue. With regard to the research proposals, the critiquing should also be more consistent. They observed that it was different every time.

They also agreed with the observation that the critiquing of the proposals proved inconsistent. The contextualization of the topics differed as well; some were too broad and seemed like overviews. It would have been more interesting, if the topics were taken in the Philippine setting.

They proposed that if the topics were to be contextualized in the Philippine setting, the overview/general discussions for each topic could be covered by an international lecturer, while a local lecturer could contextualize it at the Philippine setting.

Going back to the drafting of the proposals, they felt that the students should have been given more time to prepare them, or should have been asked to start their proposals earlier, so that the papers could have been critiqued and improved upon. Site visits/field trips could also have been more interesting for the participants.

The students also felt that the lectures should focus on not just one sector. The students shared that the peer reviews conducted by Dr. Sajor (and replicated in the other lectures) were very helpful and most enlightening. They felt it should have been replicated in the other lectures. Moreover, it would have been better if they were given more time during the peer review.

Dr. Brillhante asked if the students were okay with being given guide questions to help them during the peer review, or if they preferred to go through the reviews on their own.

- The students answered that while the guide questions were helpful in going about the critique of each paper, the reviews would be better if the reviewers were the ones to ask the questions.
- One of the students observed that it was difficult to defend one's paper while it was being critiqued, especially when there was a time limit put on each presentation.

Prof. Ahmed asked the students if they were able to access the reading lists.

- The students replied that while they were able to access most of the readings, but were unable to read all of them, especially since some of them were uploaded right before the seminar.
- The students felt that the readings should be sent out before they signed up under the five topics.
- The students also did not have any idea of what was expected out of the proposals, which made it difficult for them to prepare their individual proposals.
- The students also shared that it would have been more helpful if the PowerPoint Presentations of the lecturers were uploaded at least a day before the lecture for them to get an idea of what the lecture would be all about, especially for the topics that they were not familiar with.

Dr. Mahanama asked the students if they met up as a group prior to the seminar for a pre-seminar briefing.

- The students replied that they did meet two weeks before for a briefing, and specifically with regard to the preparation of their research proposals. The guidelines were also uploaded, and then discussed prior to the pre-seminar meeting. The meetings also served as a consultation meeting for the research proposals.

Mr. Bernhard Barth inquired if the guidelines for the papers were too complicated. He also asked about the sequence of activities, particularly if the timeline was realistic.

- The students answered that the problems were mostly on the topics, and how they were to tackle them. There was a lot of literature provided/uploaded, but they were a little lost, especially on how to tackle the topics. They also did not know what the expectations of the international participants were regarding the research proposals.
- The students suggested that the readings be sent out two or three months in advance.
- They also suggested that a refresher course on methodology be offered also.

- With regard to their proposals, a suggestion was to have the topics and drafts approved a week prior to the seminar.

Dr. Ahmed asked for other pointers, particularly what would be useful in the workshops.

- The students deemed the workshop alright in terms of the contents of the lecture, although it would have been more interesting if more examples were given, especially on the lectures held on the second day of the seminar (green buildings, and so on).
- The workshops would have been more productive if there were more student participants in attendance.

Dr. Sajor asked that if they were given more lead time in preparing the proposals (e.g. three months), and if they were each linked to a faculty member, would it have helped them progress faster in preparing their proposals. He further asked if it would have benefited them in terms topic and in boundary setting.

- The students answered that guidance from an adviser would have helped in directing them and putting them in the right perspective.
- An adviser would also have helped in coming up with topics that would be realistic in implementing. The problem was in what topic and scope the students were to cover with each topic.
- They also felt that there were many comments from the international participants that seemed to oppose each other.

Dr. Robert Marten maintained that the students should look at the political aspect of the workshops as well, as it would bring power to their research topics, and more people would benefit from them.

Evaluation from Workshop Participants

After the students presented their thoughts and suggestions on how else to improve the seminar, the international participants gave their comments. Dr. Ogenis Brillhante and Dr. Iftekhar Ahmed reiterated the students pointed out on pre-workshop activities that should be done, such as sending out the readings way ahead of time, as well as the guidelines of the proposal, assigning faculty advisers to the students, and following a longer timeline (two to three months) for all these activities. Dr. Brillhante, however, felt that sessions on research methods could be skipped, since the anticipated participants are Masters and/or doctoral students.

Dr. Brillhante added that the proposal guidelines to be used by the students must be simple and direct, and should be clear on what is expected of the students. Mr. Barth inquired with the group if anyone could volunteer to simplify the guidelines.

Prof. Setiadi also maintained that those students receiving the grants should be in frequent contact with UN-HABITAT so that they know what the organization expects of them in terms of the implementation of their proposals. Dr. Mario Delos Reyes assured him that University of Philippines School of Urban and Regional Planning would be mentoring the student grantees. Dr. Ahmed agreed, stating that there must be concrete strategies on how and where the outputs of the study are to be utilized.

Mr. Barth also clarified that while the maximum amount to be given is USD1,000 per grant, the UN-HABITAT would only give the amount specified by the students in their budgets. He inquired from the group if giving grants to the students was a good idea. Dr. Sajor replied that the grants were a good incentive system for students to participate in the seminar.

Dr. Sajor went on to the lectures, particularly on vulnerability assessment, which he handled. He then said that the lecturers should think of what they should offer the students in terms of the contents of the topics assigned to them, if it should be a little of everything, or if a topic should be covered more in-depth. He also agreed with what the students mentioned on contextualizing the lectures, where in every topic there can be one foreign and one local lecturer.

Dr. Georgina Numbasa felt that the peer reviews of the students on their papers should be kept, so that they become familiar with each other's topics. She suggested that their papers could be collected and presented in other similar conferences.

Dr. Purev expressed his appreciation at being invited to the seminar, sharing that planning on climate change in their country had not yet reached the grassroots level. He hoped that there would be more seminars like this so that they may collect more information and methodologies and apply them locally.

Dr. Robert shared that in Germany, his university, the University of Hamburg had already done plenty of work on the topics that were covered during the seminar, and he offered to tie-up with the UN-HABITAT and other Asian institutions. He mentioned that his university had courses on mathematical modeling that could be of interest to students.

Dr. Cris Diaz also agreed with the rest on the student grants, but felt that they should have a stronger link to the topics, especially those who are just being exposed to the subject of Climate Change. He also observed that the topics of the proposals were very general, and suggested that there could be more subtopics listed to help speed up the development time for the proposals. The proposals that were accepted should also be screened, particularly in the work scope and requirements, as some of them might have underestimated the scope of their timeframes.

Dr. Gloria Teknomo also suggested that the students be given an overview on the software being used for LCA??????, so that they may have a grasp on the data intensiveness. She added that there should be two modules; one as an overview of the topic, and the other which covers the topic in-depth. She also agreed that field trips would help the students fully appreciate the lectures, and would be a good incentive for them.

Dr. David Yap agreed with Dr. Diaz on providing the students a larger range of subtopics to choose from, given that the student participants are professionals and have different inclinations. He inquired how the funding would be released to the grantees (whether in tranches or all at once). He also asked if the results of the studies could be published in the University of Philippines School of Urban and Regional Planning Research and Publications Working Paper Series.

Dr. Setiadi suggested that there should be more topics on mainstreaming climate change into local planning. He also commented that perhaps next time there should be a bigger turn out in terms of student participants.

Dr. Mahanama commented that the significance of the studies/research topics of the students should be related to planning.

Dr. Delos Reyes mentioned to the group that a month prior to the conference, he met the student participants regarding their concept papers/proposals to decide on whether they would submit a concept paper, or a proposal. He observed that one or two months of preparation was adequate, especially if an e-group, where the students and other participants are able to communicate, is already in place. With regard to the number of participants, he related that while there were 25 slots slated, 30 students were initially selected, so that there would be five on standby in the event that any of the 25 students were to back out.

Dr. Ahmed inquired if in the proposal budgets, they would be requiring the students to submit a breakdown of their costing. He pointed out that the students might have a difficult time preparing the budget if they have to take everything into account. He also suggested the grant can be called a "research scholarship". Dr. Delos Reyes agreed that they should not be too stringent on the students in terms of the budget.

Dr. Brillhante then asked if the results of the researches would be published by UN-HABITAT. He suggested that after the studies have been conducted, they can be revised, and then put in the UN-HABITAT website.

In reply, Mr. Barth said that once the Climate Change Academy is up and running, the research papers will be linked to the website. He also said that the initial plan was to link the seminar with a project of UN-HABITAT in Sorsogon City, but has also to consider that other students would want to work in other areas.

Mr. Barth asked the group for suggestions on what right mechanisms to take so that they can get universities to participate or be involved in the seminar, and how this may be improved, specifically those universities which will be sending faculty and staff not as lecturers, but as participants. He initially thought of having the professors present case studies after each lecture, but this would prove to be difficult, given the limited time they already have for the seminar activities.

Dr. Setiadi proposed that it would be possible for the international participants to be more engaged in the process of the seminar. Dr. Delos Reyes agreed, adding that the local faculty could give case studies at the local level. However, the time constraint would still pose a problem to this.

Dr. Mahanama opined that for the student participants to better appreciate the seminar, they should also be exposed to local planning. Dr. Delos Reyes also suggested that they could use forums created by the UN-HABITAT as a form of mechanism for exchange among the participants. Dr. Mahanama also observed that the information dissemination for the seminar seemed limited, as there were no posters around to promote it.

Dr. Sajor commented that in workshops/seminars such as this, it is important to promote an international perspective, while contextualizing at the national level. He related how his university in Thailand conducted a similar seminar/workshop not long ago, where a leader was assigned to every hour-long lecture. Each lecture likewise covered a case study which cohered with the segment leader's presentation, giving international flavor to the key lecture.

The group was then asked to comment on the overall structure of the workshop/seminar. Both Dr. Setiadi and Dr. Brillhante liked how the seminar was placed in between the workshops of the international participants. Dr. Delos Reyes shared that a field trip could have been arranged, but that would have taken half a day, and there was not enough time, given the lectures and the student presentations.

Dr. Brillhante suggested that half a day be allotted for a one-on-one session with the students to discuss their research proposals and make the necessary improvements on them.

Dr. Ahmed opined that some of the students' topics needed more contextualization than others, especially those that covered a more regional/global perspective. Also with regard to the sectoral issue, Dr. Ahmed felt it would have been too difficult to decide on a particular sector to cover when discussing the topics assigned to them.

According to Mr. Barth, the student participants in Kampala would have access to the presentations beforehand, and the lectures would be narrowed down and go deeply to the sectors. With regard to the lecture topics to be covered, the topics would be based on the key interests of the students, and on the specializations offered at the host universities. There was also the question on whether the lectures have to be revised prior to being uploaded on the website. Overall, the question would be what the seminar aims to ultimately achieve.

Based on criteria for the grant, the following are the five concept papers to be awarded by the UN-HABITAT (\$1,000.00 each):

- 1) *"Vulnerability Assessment and Hazard Mapping of Climate Change Induced Flooding in Angono Municipality, Rizal"* by A. S. M. Saifullah
- 2) *"Greenhouse Gas Emissions Accounting for the Ayala Center, Makati City, Philippines: Geographic Information Services-Based Inventory with the Participation of Building Administrators and Locators"* by George D. Esguerra
- 3) *"Reducing Carbon Footprint through Urban Agriculture: A Case Study of Community-Based Garden in North Fairview Subdivision, Quezon City"* by Michelle Ann M. Santillan
- 4) *"An Assessment on the Local Government Units and Local Communities Climate Change Adaptation Measures: A Case Study on the Marikina River and Pasig River Basin in Metro Manila, Republic of the Philippines for the period June 2010 – March 2011"* by P. Ervin A. Mundo
- 5) *"Building a Climate Resilient Sorsogon City through Land Use Planning: Mainstreaming Gender-Sensitive Climate Change Adaptation Measures in the City's Comprehensive Land Use Planning Process"* by Mark Anthony M. Gamboa

Afternoon Session

Field visit

To cap off the seminar-workshop, the international delegates visited Marikina City, one of the vulnerable cities in the country. Ms. Lisa Palomar, Marikina City's Project Development Officer, recounted the City's experience in preparing for and recovering from natural disasters like that of Typhoon Ketsana/Ondoy. The delegates were also brought to the Provident Village, which is one of the worst-flooded areas in the city when the said typhoon hit Metro Manila in September 2009.

Synthesis/Summary of Major Points

Pre-Seminar/Workshop Preparations:

- Prior to the Seminar/Workshop, it is imperative that an e-group or some form of online communication be set up for the students as well as the faculty participants. This will serve as a venue where ideas may be exchanged prior to the seminar/workshop itself.
- The coordinator may also opt to meet with the students at least once before the seminar so that the students may be briefed on the seminar. The meeting would also serve as a venue where issues and concerns of the students may be addressed.
- The readings should also be given out or uploaded to the website earlier so that the students may have ample time to go through them, especially prior to the drafting of their research proposals.

Workshop Proper

- The Workshop Proper was divided into two sessions: one held the day before the seminar proper, and the second session was set after the 3-day seminar. The lecturers and faculty participants found this setup ideal as the first day was devoted to discussing the contents of the seminar lectures, as well as, the criteria for the selection of research proposals to be awarded grants, and the last day served as a wrap-up of what transpired in during the seminar proper and discussion of the next steps/future plans.

Seminar Proper

The Lecturers

- During the actual seminar, the lecturers are encouraged to cover their assigned topics on a wider scale (e.g. more sectors, instead of focusing on just one sector);
- Lecturers are likewise encouraged to hold group exercises. This can prompt the student interaction, where they can share their thoughts on the topic at hand. A good exercise was the peer review held during the first day, where students were asked to review the research proposals of their fellow participants.

The Lectures

- The lectures should be contextualized so that the students may be able to relate them to the actual situation in the country. The lecturers may present local examples/case studies. Also, a local professor may tackle this particular part of a lecture (this is especially true for the topic of Climate Change in Local Planning).
- Lectures may also either be uploaded a day before the actual presentation, or may be printed out and distributed a day prior so that the students may know what to expect with regard to its content.
- To help the students and faculty participants further appreciate the lectures, field visits may also be arranged.

The International Participants

- The students suggested that the international participants likewise be included in the group exercises to exchange ideas and interact with them. They were only able to intermingle during meals and coffee breaks, as exchanges were limited during the seminar to the post-lecture Q&As.
- The international participants may also be given a more significant role through case studies from their countries, should there be ample time for them to give presentations after each lecture.

The Research Proposal

- The assignment of topics should be done in line with the interest of the student participants.
- The concept paper guidelines should be discussed with the students prior to the drafting of their research proposals. Meetings with the students during the pre-seminar activities should include discussion of the guidelines as well.
- Students may also be assigned to a faculty adviser who can comment on their research proposals prior to the seminar.

**Annex I. Directory of Participants to the University Seminar –
Workshop on Strengthening Climate Change in Planning Education**

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Annex III. University Seminar-Workshop Programme





**University Seminar and Workshop on
Strengthening Climate Change in
Planning Education**

PROGRAMME

March 1 to 5, 2010
UP School of Urban and Regional Planning
Diliman, Quezon City, Philippines

1. Workshop of Lecturers/Participants

| | |
|--|---|
| <p>Day 1, Monday, 1 March 2010</p> <p>9:00 am</p> | <p>Opening and Introduction</p> <p>Dr. Lorna Paredes, Vice-Chancellor for Academic Affairs, UP Diliman, Quezon City, Philippines</p> <p>Mr. Bernhard Barth, UN-HABITAT, Nairobi, Kenya</p> <p>Session 1: Introduction to CCCI, the University partnership and CCCA (UN-HABITAT)</p> <p>Session 2: Introduction to the three day university seminar (UP SURP) Objectives and structure Student preparations</p> <p>Student research awards</p> |
| <p>1:30pm</p> | <p>Session 3: Finalizing the university seminar In working groups assessing each of the 6 modules</p> |
| <p>Day 2 - 4, Tuesday to Thursday, 2 - 4 March 2010</p> | <p>UNIVERSITY SEMINAR</p> |
| <p>Day 5, Friday, 5 March 2010</p> <p>9:00 am</p> | <p>Session 4: Evaluation of university seminar</p> <p>Session 5: Towards the development of a CCCA platform Needs in the region (priorities, dimensions, process and components), technical issues as well as template for each module.</p> |
| <p>1:30pm</p> | <p>Session 6: Towards the development of CCCA modules Concrete partnerships to further develop modules</p> |

2. University Seminar

Day 2, Tuesday, 2 March 2010

| | |
|---|---|
| 8:30am Opening and Introduction | <p>Dr. Candido A Cabrido Jr, Dean UP SURP, Opening and Welcome Remarks</p> <p>Ms. Eden Garde, Habitat Programme Manager, UN-HABITAT, Philippines</p> <p>Introduction of lecturers, participants, and students</p> |
| <p>Session 1 Climate Change and Urban Planning</p> <p>An overview – Climate Change, the science, the impact, mitigation in cities, adaptation in cities, Climate Change Governance</p> | <p>Mr. Bernhard Barth, UN-HABITAT: The Cities & Climate Change Initiative, Background, University Partnership, Continuous Education for Urban Planners</p> <p>Dr. Mario R. Delos Reyes: Climate Change and Urban Planning – An Overview</p> |
| <p>1:30pm Session 2: Conducting Climate Change Vulnerability Assessments</p> <p>Local Climate Models, extrapolating weather data and SLR, vulnerable people, vulnerable places, vulnerable sectors</p> | <p>Dr. Edsel Sajor, Asian Institute of Technology (AIT), Bangkok, Thailand</p> |

Day 3, Wednesday, 3 March 2010

| | |
|--|--|
| 8:30am Session 3: Conducting City Climate Change Footprint assessments | <p>Prof. Ralph Horne/Dr. Iftekar Ahmad, Royal Melbourne Institute of Technology (RMIT), Melbourne, Australia</p> |
| <p>1:30pm Session 4: Cities and Climate Change Mitigation – focus on the built environment</p> <p>Seminar Papers may cover:</p> <ul style="list-style-type: none"> • eco city development • spatial planning • building and construction • transport, urban energy or other sectoral interventions | <p>Dr. Iftekar Ahmad/Prof Ralph Horne, Royal Melbourne Institute of Technology (RMIT), Melbourne, Australia</p> |

Day 4, Thursday, 4 March 2010

| | |
|--|---|
| <p>8:30am Session 5: Cities and Climate Change Adaptation Sectoral Session</p> <p>Seminar Papers may cover:</p> <ul style="list-style-type: none"> • Social / livelihood interventions • Spatial planning / land use planning • Infrastructure planning • Shelter/Housing • DRR | <p>Dr Candido Cabrido, Jr./Dr. Mario Delos Reyes/Prof. Alex Ramon Q. Cabanilla, University of the Philippines – School of Urban and Regional Planning (UP SURP), Quezon City, Philippines</p> |
| <p>1:30pm Session 6: Sectoral session (comprehensive planning)</p> <ul style="list-style-type: none"> • Developing local climate change (action) plans • Mainstreaming Climate Change into existing (statutory) plans <p>Closing and Departure</p> | <p>Dr. Ogenis Brillhante, Institute for Housing and Urban Development Studies, (IHS), Rotterdam, The Netherlands</p> |

- Students will present their seminar/concept papers in the form of a research proposal
- For each category (module) up to 1 research grant can be presented
- Workshops could include field visits to the Pilot Cities
- Preparation of students for the seminar (at least 4 weeks prior to the seminar)
- Lectures (by host university and external faculty)



Annex IV. Concept Paper Guidelines of Student Research Proposals

CONCEPT PAPER PROPOSAL ON CITIES AND CLIMATE CHANGE

GUIDELINES/POINTS TO CONSIDER (3-5 pages)

RESEARCH TITLE

1. Research Title must be reflective of its problem
2. It must answer the following questions:
 - 2.1 What question will answer THE FOLLOWING
 - 2.1.1 What are you trying to investigate?
 - 2.1.2 What are you trying to find out, determine or discover?
 - 2.2 Who question will answer, who are the respondents or subjects of the study
 - 2.3 Where question will indicate the research locale, setting or the place where the research study is conducted.

BACKGROUND OF THE STUDY (Combined with Statement of the Problem)

1. The proponent should describe the existing and prevailing problem situation based on his/her experience. This scope may be global, national, regional and local.
2. The proponent should give strong justification for selecting such research problem in his/her capacity as a researcher. Being a part of the organization or systems and the desire and concern to improve the systems.
3. The researcher should link and relate the background of the study to the proposed research problem.

Statement of the Problem (will not appear in text but will be considered)

1. There should be an introductory statement which reflects the main problem of the study.
2. Sub-problem should be stated in such a way that it is not answerable by either yes, no, when and where.
3. Sub-problems should include all the independent and moderate variables which are reflected in the conceptual framework.
4. Sub-problems should be arranged in logical order and extensive in coverage and must be mutually exclusive in its dimensions.
5. If the research is quantitative avoid the "how questions."

SIGNIFICANCE OF THE STUDY

1. This section describes the contributions of the study to knowledge. This could be in the form of new knowledge in the field, a check on the major findings of other studies, a check on the validity of findings in a different population, a check on trends over time and a check on the other findings using different methodology.
2. It discusses the importance of the study to the society, the country, the government, the community, the institution, the agency concerned, the curriculum planners and developers and to the researchers.

3. It expounds on the study's probable impact to education, science, technology, on-going researchers and etc.

OBJECTIVES OF THE STUDY

1. Cite the purpose of the study in bullets (at least 3-4 objectives)

CONCEPTUAL FRAMEWORK OF THE STUDY (in Schematic Diagram)

1. The conceptual framework is the schematic diagram which shows the variables included in the study.
2. Arrows or line should be properly placed and connected between boxes to show the relationship between the independent and dependent variables.
3. All the independent and dependent variables should be clearly discussed and explained how these would influence the results of the study

METHODOLOGY

1. This discusses the research locale, research design, population sampling or respondents of the study, research instrument, and possibly the statistical treatment of data.
 - 1.1 Research Locale
 - 1.1 This discusses the place or setting of the study. It describes in brief the place where the study is conducted. Only important features which have the bearing on the present study are included.
 - 1.2 Shows the target population.
 - 1.2 Research Design
 - 1.2.1 This describes the research mode whether it is true experimental or quasi-experimental design, descriptive or survey research, historical research, qualitative research, ethnographic and etc.
 - 1.3 Population Sampling or Respondents of the Study
 - 1.3.1 This describes the target population and the sample frame.
 - 1.3.2 It specifies the sampling technique used
 - 1.4 Research Instrument
 - 1.4.1 This explains the specific type of research instrument used such as questionnaire, checklist, questionnaire-checklists, structured interview, teacher-made test, standardized instrument which are adopted or borrowed with permission from the author or from other sources.
 - 1.4.2 The parts of the instruments should be explained and what bits of information are derived.

1.4.3 The establishment of validity and reliability should be explained and only experts should be chosen to validate such instrument. Specific and appropriate statistical test used should be given and the computed values derived. Interpretation should be included in the discussions.

1.5 Statistical Treatment of Data

- 1.5.1 Explain how each statistical test is used in the treatment of data.
- 1.5.2 If the research instrument included options which are scaled, explain how each scale is given the weight, its interval and class limits.

BIBLIOGRAPHY

- 1. This includes all materials used and reviewed by the researcher, such as books, magazines, periodicals, journals, thesis or dissertation (published or unpublished). Monographs, speeches and modules, web page or internet, etc.
- 2. In the choice of bibliographic materials, the following should be considered:
 - 2.1 Relatedness to the research problem.
 - 2.2 Inclusion of recent journal publications (materials published in the 50's up to 80's should not be included, as long as it is a classical work).

WORK AND FINANCIAL PLAN (in Gantt Chart)

| Activity | Month | | | | | | Cost |
|----------|-------|-------|-----|------|------|--------|------|
| | March | April | May | June | July | August | |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. Etc. | | | | | | | |

Annex V. Evaluation Criteria of Research Proposals

The proposals were evaluated based on the following Criteria:

- **Contribution to Practice (counted as double)**
- **Consistency, including methodology/activities (counted as double)**
- **Work and financial plan, feasibility and time table (counted as double)**
- Compliance with Research Guidelines
- Relevance to Teaching/Specific Module
- Contribution to Theory
- Achievability (financial)

TOTAL: **70%** of the Overall Score

- Oral Presentation

TOTAL: **30%** of the Overall Score

OVERALL TOTAL: **100%**

Annex VI. Student Evaluation Form

STUDENT COURSE EVALUATION

To help us determine how effective this course

- 1. Please indicate your area of specialization/involvement:**

- 2. How was the level of content in this course?**
 - a. Too difficult
 - b. About right
 - c. Too easy

- 3. Please tell us activities or sessions you would like to change in the course.**

- 4. If the course was offered again, what new topics would you like to be included?**

- 5. How useful were the following activities?**

| | Presentations | Exercises |
|------------------------|----------------------|------------------|
| Very useful | | |
| Somewhat useful | | |
| Not useful | | |

- 6. Did you acquire any new skills and/or knowledge in this course?**
 - a. Yes
 - b. No

About the Resource Persons: on a scale of 1 to 5 (1 is excellent and 5 is poor)

| | | | | | |
|-------------------------------------|----------|----------|----------|----------|----------|
| Lecturer | 1 | 2 | 3 | 4 | 5 |
| Use of Visual | | | | | |
| Ability to Explain Concepts clearly | | | | | |
| Ability to Impart Skills | | | | | |
| Lecturer | 1 | 2 | 3 | 4 | 5 |
| Use of Visual | | | | | |
| Ability to Explain Concepts clearly | | | | | |
| Ability to Impart Skills | | | | | |
| Lecturer | 1 | 2 | 3 | 4 | 5 |
| Use of Visual | | | | | |
| Ability to Explain Concepts clearly | | | | | |
| Ability to Impart Skills | | | | | |
| Lecturer | 1 | 2 | 3 | 4 | 5 |
| Use of Visual | | | | | |
| Ability to Explain Concepts clearly | | | | | |
| Ability to Impart Skills | | | | | |
| Lecturer | 1 | 2 | 3 | 4 | 5 |
| Use of Visual | | | | | |
| Ability to Explain Concepts clearly | | | | | |
| Ability to Impart Skills | | | | | |
| Lecturer | 1 | 2 | 3 | 4 | 5 |
| Use of Visual | | | | | |
| Ability to Explain Concepts clearly | | | | | |
| Ability to Impart Skills | | | | | |

Other thought/comments and queries of the student participants:

Annex VII. Photo Documentation





