Influences of climate change on organizational management

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Abstract

Climate change is not only affecting the natural environment, it is also influencing the global business environment and the way organizations are managed. This paper discusses the responses of few selected organizations in PNG implementing environment management practices in response to the global concern on climate change. The paper also discusses the challenges organizations in PNG face when responding to environmental management issues. The paper argues that a decision to do business is made by managers and their organizations. Every organization has an ethical responsibility to ensure that their operations exert minimum impact on the natural environment. Compliance with regulatory framework will not sustain environmental management practices, it has to be the organization's ethical and social responsibility to act voluntarily.

Key words: climate change, ethical responsibility, sustainable environment management practices

Introduction

Discussions are based on literature review, survey questionnaire, document analysis (postgraduate essays) and individual interviews. Participants from few selected organizations in Papua New Guinea (PNG) implementing environment management practices were invited to fill up a semi-structured questionnaire and take part in an individual interview. The questionnaire was designed to capture quantitative and qualitative data on people's views and perceptions on issues relating to climate change and organizational management.

The purpose of the study is to understand the trend on the responses of the organizations in PNG on climate change. The participants were the experienced top and middle management managers enrolled in the postgraduate business management programs at Divine Word University. Participants were selected randomly representing various industries and employment sectors in PNG. The finding and discussions reflects the views and opinions of the participants and not the organization they work for.

The first part of the paper reviews the trend on evolution of organizational management theories and practices. The review highlights that organizational management theories and practices evolved over the years were influenced by events in the global business environment. Second part examines the management issues of the current period. The literature indicates that climate change is becoming a global concern and also a force in the business

environment which will continue to influence the management theories, approaches, practices and the way organizations are management in the contemporary business environment. The third part reviews the literature on the relationship between the organization and the natural environment. The review highlights the importance of environment management practices (green management concepts). The fourth part assesses the responses of few selected organizations in PNG implementing environment management practices. Majority of the participants interviewed think that government should play a greater role on climate change in Papua New Guinea. And the firth part discusses the management challenges on climate change and provides suggestions for improvement.

Evolution of management theories and practices in response to the needs of the society in a changing business environment

According to Daft and Samson (2009), evolution of management theories and practices over the years were influenced by the changes in the business environment. Many of these changes were caused by global events.   For instance, the early management theories were influenced by industry revolution from1800s to early 1900s. The focus of management practices in this period was on employee productivity and mass production.

Contemporary management theories emerged in early 1940s, influenced by World War II The focus of management practices in this period was on organizational effectiveness using management tools to make decisions (Bateman and Snell, 1996). The global event influencing the current business environment is globalization (1990s to 2000s). The focus of management practices in the era of globalization is on management sustainability through interaction and adjusting to the changes in the general business environment. The question to explore in the next content is 'what will be the next management trend after globalization'.

Events indicating the next management trend

According to McKinsey Quarterly Online Business Journal (2008), global economy will see a paradigm shift in the next decade. The article highlights ten trends that will have a major impact on the global business environment. One of the trends is 'the concern for the natural environment'. The report highlighted that climate change will become a global concern and will influence the global business environment and the way organizations are managed.

Daft and Samson (2009) mentioned that the focus of management will turn towards doing business in the natural environment. Environmental management and sustainability, environmental audit and organization's ethical and social responsibility will become the core management concepts in the next decade. Porter and Reinhart (2007) said that climate change is now a fact of life, it is not only the natural environment concern, it is also political, economic and social concerns.
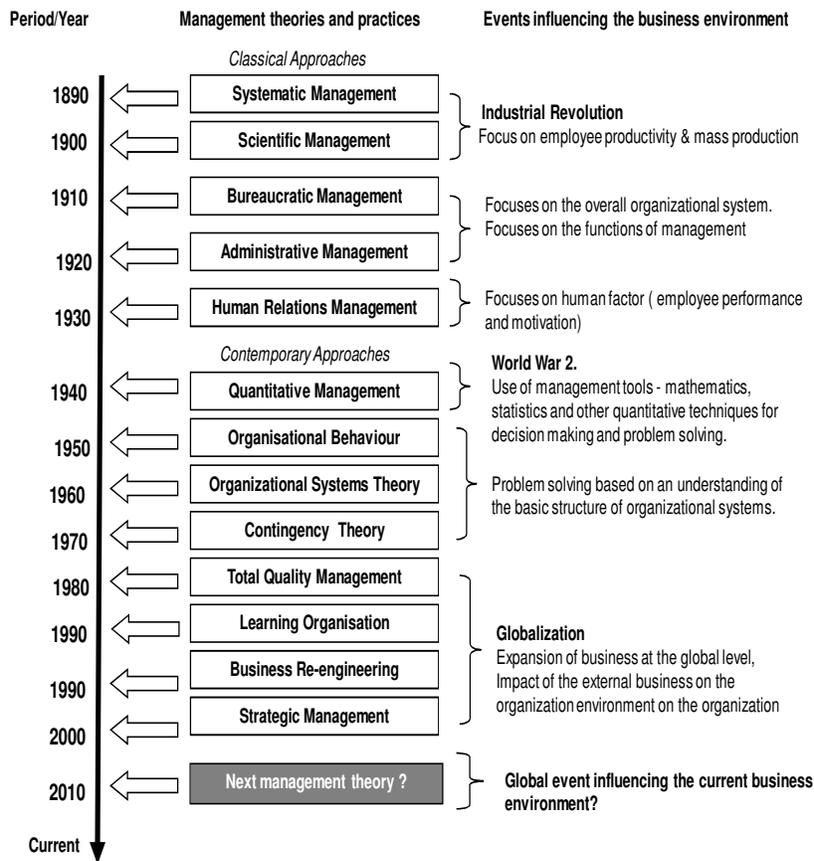
Period/Year	Management theories and practices	Events influencing the business environment
	Classical Approaches	
1890	Systematic Management	**Industrial Revolution**
1900	Scientific Management	Focus on employee productivity & mass production
1910	Bureaucratic Management	Focuses on the overall organizational system.
1920	Administrative Management	Focuses on the functions of management
1930	Human Relations Management	Focuses on human factor (employee performance and motivation)
	Contemporary Approaches	**World War 2.**
1940	Quantitative Management	Use of management tools - mathematics, statistics and other quantitative techniques for decision making and problem solving.
1950	Organisational Behaviour	
1960	Organizational Systems Theory	Problem solving based on an understanding of the basic structure of organizational systems.
1970	Contingency Theory	
1980	Total Quality Management	
1990	Learning Organisation	**Globalization**
1990	Business Re-engineering	Expansion of business at the global level, Impact of the external business on the organization environment on the organization
2000	Strategic Management	
2010	Next management theory ?	**Global event influencing the current business environment?**
Current		

Figure 1: Evolution of management theories and practices (Daft and Samson, 2009)

Environmental issues will become a force that will transform the way managers think and manage their businesses and their relationship with internal and external stakeholders. Based on the above indicators, management trend for the next decade is demonstrated in figure 2.

Relationship between the organization and the natural environment

Environment is defined as the sum total of all conditions and influences which affect the development and life of all organisms on earth. The living organisms vary from the lowest micro-organisms such as bacteria, fungi, etc to the highest including animals and human beings. The natural environment provides basic needs for food and shelter and sustains living through economic activities such as farming and fishing to earn income (Kumar, 2004).
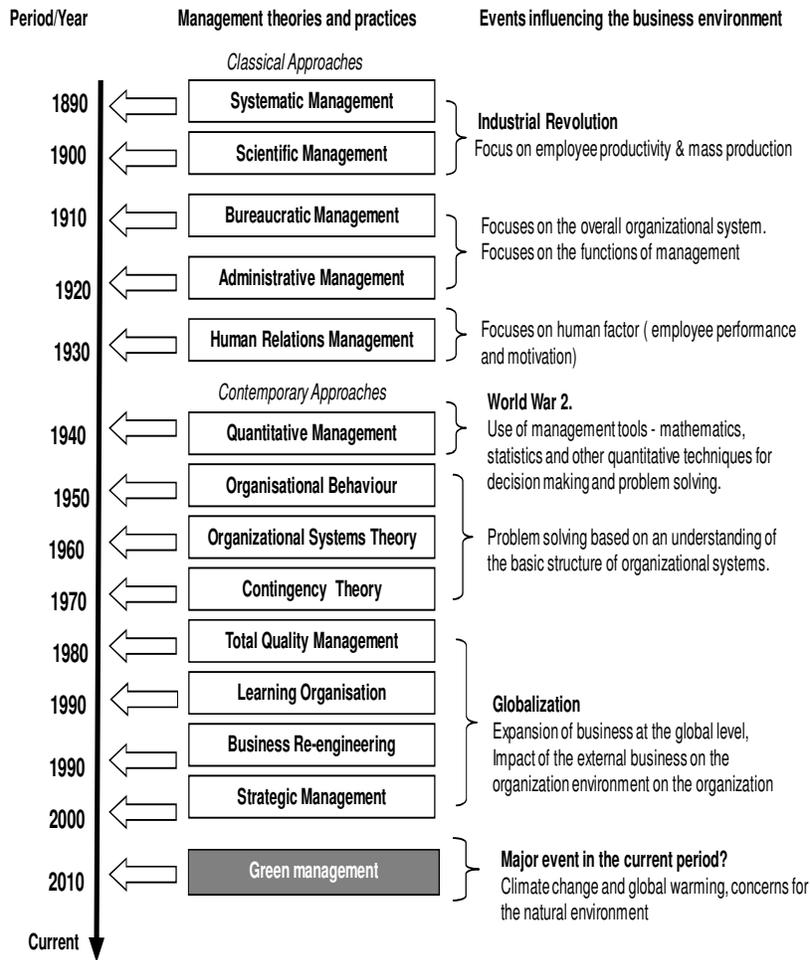
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2000	Strategic Management	
2010	Green management	**Major event in the current period?** Climate change and global warming, concerns for the natural environment
Current		

Figure 2. Management trend for the next decade

According to Wikipedia, the free encylopedia (2011), climate change is a change in the statistical distribution of weather over periods of time that range from decades to millions of years. Climate change may be limited to a specific region, or may occur across the whole earth. Factors that shapes climate can be a natural process and manmade. Environment in general is very vital for human and animal survival. The human and animals depend on environment for its food and water which is necessity for human existence. The air that human and animals breathe is the exchange of carbon dioxide that we emit to the environment. The oxygen that human and animals take is release to humans and animals by the plants in the environment.

Organizations do business in the natural environment by abstracting the raw resources and converting to finish products as determined by supply and

demand. Therefore decisions to do business are made by the managers at the organizational level as determine by supply and demand.   Recent trend indicates that organizations have increased their effort to meet the needs of the growing society triggered by population growth in the third world countries. Population growth is enhancing the growth of the industries and it is a concern particularly the impact of population growth on climate change (Corporate Social Responsibility web site, 2011).

Increase in population and invention of sophisticate technology is causing rapid environmental depletion and the impact of this is the global warming that the world is experiencing today. Managing with environment in mind is absolutely crucial at this point in time. It is crucial for organizations to introduce environment management tools to attain environment efficiency, to create positive image and to improve and maintain their public relations. Doing business in the natural environment requires attention to efficiency, effectiveness, ethical, economic, social and competitive issues. (Corporate Social Responsibility web site, 2011).

Responses of the selected organizations in Papua New Guinea on climate change

Discussion in this content is based on participants response in a survey questionnaire and individual interviews and the discussions reflects participant's views and opinions and not the organization they work for.

Participants

Fifty two (52) participants from few selected organizations in Papua New Guinea (PNG) implementing environment management practices were invited to participate. Participants were the students from the employment sector attending short competency based management training and the postgraduate programs in Business management at Divine Word University (DWU). Only those hold managerial position were invited to fill the questionnaire and participate in an individual interview as their managerial experiences and knowledge about their organization and its general business environment provides valuable insights on the issues relating to climate change and organizational management. The participants were selected randomly representing various industries and employment sectors of PNG over a two year period (2009 and 2010).

Method

The study used a mixed method for data collection and analysis. A semi structured questionnaire designed to collect both quantitative and qualitative data was used. Quantitative data was based on participant's choice of ranking from (1) 'yes or no questions', (2) ranking from most agree to not agree questions and (3) very high to very low questions. Qualitative data was based on questions requiring participant to write and provide an explanation. For quantitative data, frequency count was used to tally the number of responses

according to participant's preferences. Ranking was required to record the data according to the order of preference while weighted mean was used to determine the general tendencies of the perception of the selected respondents. For qualitative data, content analysis was used to identify the common themes emerged from participants' responses to each question and the issues discussed relate to the question.

Table 1. Participants from the selected organizations in PNG

Sector	Number of participants
Mining Sector	Three participants from three different companies
Private firm	Ten participants from 10 different private firms.
Small business	Six participants from 6 different small firms
Statutory Organization	Five participants from 3 different statutory organization
National Department	Six participants from 6 different National Departments
Prov. Administration	Twelve participants from 12 Provincial Administrations in PNG
Training Institutions	Ten participants from 10 different training institutions in PNG
	Total of 52 participants from 70 questionnaires distributed over a two year period (2009 and 2010).

Results and discussion

This section presents the summary of the key research questions and the responses of the participants (S*ource of the information: Semi structured questionnaire & individual interview*)

Q. 1 Who should take greater responsibility on issues concerning climate change in the country?

Whose responsibility	Frequency	Percentage
The government	27	53%
The organization	18	34%
Not sure	7	13%
Total	52	100%

When asked about the responsibility, quantitative data shows that fifty three percent (53%) of the participants indicated that the main responsibility on climate change lie with the government and thirty four percent (34%) indicated that organizations should take the leading role. Qualitative response on the same question shows that government should play a greater role through enforcement of policies, laws and regulations. One participant said that '*organization will comply with the government laws if there are effective implementation and monitoring systems in place*' (MLBA Student, DWU, 2010).

The above discussion implies that the majority of the participants think that the responsibility of responding to the global concern on climate change lies with the government. According to Daft and Samson (2009), organizations should take a greater responsibility by taking proactive approach on issues relating to climate change. Government is the facilitator of the development policies. Government development policies are implemented by the organizations. Therefore organizations should take proactive actions and respond to global concerns on climate change. Organizations have ethical responsibility to ensure their operations does not concentrate entirely on its profit maximization, should also consider environment management, commitment to spiritual development of the landowners, well fare of the surrounding communities and also its workforce. Managers need to be informed of their administrative and ethical responsibilities to take proactive actions through their business management strategies and organization's operations. Compliance to regulatory framework will not help to sustain environmental management practices and efforts on climate change, it has to be the organization's ethical and social responsibility to act voluntarily.

Q. 2 Does the organization you work for promote on environment friendly working conditions?
e.g. Does the organization have a policy on environment management practices, energy saving, safe disposal of waste, paper less etc.)

Response	Frequency	Percentage
Yes	25	48%
No	24	46%
Not sure	3	6%
Total	52	100%

When asked about environmental friendly working conditions, quantitative data shows that forty eight percent (48%) of the participants indicated that the organization they work for have policies and forty six percent (46%) indicated that they do not have such policy. Qualitative response shows that organizations do have policies on environment but implementing them is still a challenge. One participant said that '*many government departments' policies lack clear and well define implementation framework. And also many policies are driven by external demand or pressure, for instance organizations need to comply with foreign Aid donor's requirements to qualify for financial assistance*' (MLBA Student, DWU, 2010).

The above discussion implies that organizations are aware of the importance of managing with environment in mind and need to set priorities and balance profit with social responsibility to promote environmental friendly conditions, e.g. By designing or selling environment friendly products, products that will cause no harm to the natural environment or generate less waste in the natural environment?

Q. 3 Does the organization you work promote environment friendly product and services?

Response	Frequency	Percentage
Yes	16	31%
No	24	46%
Not sure	12	23%
Total	52	100%

When asked about environment friendly products, quantitative data shows that forty six percent (46%) of the participants indicated that the organization they work for does not have a policy on environmental friendly product and thirty one percent (31 %) indicated that organizations they work for have a policy in placed. Qualitative responses indicated that though organizations do not have such policies, they are mindful that their product meets the needs of the customers and the stake holders. One participant said that, '*Although the company I work for do not have a specific policy on friendly product, our product is determined by the customers, (their needs, and preference) so it meeting the needs of the customers and stakeholder, enables the company to deliver environmental friendly products*'. The other participant said that, '*although the company I work for does not have policy on environmental friendly product, the company meet quality standards so investing in quality also promotes environment friendly products* (MLBA Student, DWU, 2009).

The above discussion implies that organization are aware of the importance of managing with environment in mind and their means of communication is through the standards and quality of their product requirements their suppliers and clients to meet and provide.

Q. 4 Does the organization you work for conduct in-house awareness on environmental issues?
Organization conducts awareness on environment issues or the impact of climate change in the Divisions and the Departments in the organization.

Response	Frequency	Percentage
Yes	24	46%
No	26	50%
Not sure	2	4%
Total	52	100%

When asked about in- house awareness, quantitative data shows that fifty percent (50%) of the participants indicated that the organizations they work for do not conduct in- house awareness and forty six percent (46%) indicated that their organization conduct such program. Qualitative responses indicated that organizations are aware of the environmental concern but implementation of sustainable environmental management practices is still a challenge. One major constraint is due to technicality of the subject. One of the participants said that '*managers must first have all necessary information at their disposal relating*

to environmental issues before embarking on environment management programs and projects' (MLBA Student, DWU, 2009). The other participant said that '*our company has embarked on a green management program in a small way to participate in addressing the climate change and its eventual impact on the natural environment*' (MLBA Student, DWU, 2010).

The above discussion implies that organizations are aware of the importance of managing with environment in mind but need to develop strategic framework to implement the policies. There is a need for training on strategic planning and implementation of sustainable environment management practices.

Q. 5 Does the organization conduct external awareness on environmental issues in the society?

Organization conducts or supports awareness on environment issues or the impact of climate change in the community (villages, schools, settlements etc).

Response	Frequency	Percentage
Yes	21	40%
No	26	50%
Not sure	5	10%
Total	52	100%

When asked about external awareness, quantitative data shows that fifty percent (50%) of the participants indicated that the organizations they work for do not conduct external awareness and forty percent (40%) indicated that their organization conduct such program.

One of the participant said that 'there *is much publicity in the media on climate change, and our organization has not done much in terms of environmental awareness*'.

The other participant said that, '*the company I work for strives to lead by example every trading day that the shop area is kept clean for customers to come in an experience what it means to live in a clean environment. The company also assists to discourage loitering, betel nut chewing and spitting. With these initiatives the company sees that positive signals are going out to the town residents and others to become responsible for the rubbish they create. The company hopes that the positive impression will cause other companies and organizations to follow suit so that collectively we make the town a safer, healthier and clean environment to dwell in*' (MLBA Student, DWU, 2010).

The above discussion implies that organizations are aware of the importance of managing with environment in mind but need to be informed of their ethical and social responsibility on climate change. There is a need for training in this area.

Q. 6 What is the level of the organization's alertness on environmental issues affecting the global community (impact of climate change)?

Response	Frequency	Percentage
Very high	6	12%
Medium	21	40%
Low	14	27%
Very low	11	21%
Total	52	100%

When asked about level of the organization's alertness on environmental issues affecting the global community, quantitative data shows that it is medium (40%), which means, organizations are aware of the environmental concern, some have policies on environment management and sustainability, but lack framework implementation framework. One participant said that, '*the company I work for have policies on environment management but there are no clear implementation structures and strategies*' (DWU management student, 2009).

The above discussion implies that many organizations have policies and plans on sustainable environment management but lack strategic implementation framework to provide guide on how conducting environmental audits of their operations. The strategic implementation framework should also provide the time frame with key result areas in the organization's operations.

Q. 7 What is the level of employee alertness on environmental issues affecting the global community?

Response	Frequency	Percentage
Very high	5	10%
Medium	22	42%
Low	15	28%
Very low	10	20%
Total	52	100%

When asked about employee alertness on environmental issues affecting the global community, quantitative data shows that it is medium (42%), which means, employee are aware of the environmental concern. One participant said that '*with the help of media (newspaper and TV), public is well informed of the global concern on environmental issues; however employees input is limited within the operational framework of their organization because of lack of policies and implementation framework*' (MLBA Student, DWU, 2010).

The above discussion implies that employees are aware of the global concerns on climate change. Information is made available through media (TV, world news, internet, natural disasters around the global prompting awareness etc.)

Implications for management

Managers and their organizations in Papua New Guinea have both challenges and opportunities when responding to the global concern on climate change. The challenges are often associated with organization's capability (resources, knowledge and skills) to innovate and invest in resources to sustain best management practices. Sound environmental management brings benefits to the company and adds value to the company's image and reputation. When the company abides environmental regulations it builds good relationship with environment regulators and broader communities. One participant said that '*we have to conduct business in a sustainable manner that will promote life to continue after the life of the business activity. Our lives and that of our children now and in the future depend on the decisions we as managers make*'. The other participant stressed that PNG government should create structures that empowers agencies that regulates the natural environment (MLBA Student, DWU, 2010).

Few organizations in PNG have set the standards as an environmental concise organization. One of the responded stated that Ok Tedi Mining Limited is one of those first mining and big revenue generators in the early days and even up to today. Ok Tedi Mining Limited is one of the great experience and lesson learnt by government and people of Papua New Guinea. One participant said that '*in the early days there was limited experience and knowledge on the management of natural environment, thus more focus was on the revenue to run the country. However, today Ok Tedi Mining Limited has environmental management plan drawn to monitor and reduce the level of environmental destruction and pollution that it had cause to the river system. OK Tedi has learned from its past experiences in PNG*' (MLBA Student, DWU, 2010).

In the education sector in PNG, Divine Word University (DWU) is taking the lead in green management concepts. DWU was declared as a green University in 2010 (DWU Web site, 2010). DWU strategic Vision (2010 – 2016) sets strategic direction on 5 key targets (1) Strategy targets; (2) Process targets, (3) People targets; (4) Business targets, and (5) Environmental targets. DWU is an authentic model not only for an educational institution but a bench model for organizations in the contemporary business environment. In its policy framework, DWU emphasis on paper less policy, energy saving through alternative environmental friendly energy sources such as solar energy and general environment management of the landscape. The above examples demonstrate that environmental management practices can be effectively manages with right planning tools and the resources.

Organization has ethical responsibility thus they operate within a community, use the resources from the community and depend on the society for its functioning, growth and success. This creates an obligation on the part of the organization to look after the welfare of the society. Daft and Samson, (2009) highlighted that ethics comes to interplay when the organization operate within the specific guidelines and procedures with due care to the surrounding inhabitants including the local communities and their natural environment. It is

the responsibility of the organization to ensure that its operations does not concentrate entirely on its profit maximization, should also consider environment management, commitment to spiritual development of the landowners, well fare of the surrounding communities and also its workforce.

Addressing environment improvement requires innovative processes and methods. Without innovations, environmental improvements will inevitably raise cost (Daft & Samson, 2009). One of the challenges to respond to the global concern on climate change in PNG is to educate and produce new breed of managers with environment concise mind set. Tertiary training institutions in PNG should be provided resources to take an active role respond to the global concerns on climate change through education and training programs.

Conclusion

Majority of the participants in this study think that it is the government's responsibility to respond the global concern on climate change. Government is the facilitator of the development policies. Government development policies are implemented by the organization. Therefore organizations should take proactive actions and respond to global concerns on climate change. Organizations have ethical responsibility to ensure their operations does not concentrate entirely on its profit maximization, should also consider environment management, commitment to spiritual development of the landowners, well fare of the surrounding communities and also its workforce. Managers need to be informed of their administrative and ethical responsibilities to take proactive actions through their business management strategies and organization's operations. One of the challenges to respond to the global concern on climate change in PNG is to educate and produce new breed of managers with environment concise mind set. Tertiary training institutions in PNG should take an active role in partnership with the government to put in place strategies through training and education to address issues relating to climate change.

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