

Project-oriented financing and climate change mitigation planning in developing countries

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We considered the environment as a natural source and initial and basic foundation of investment for modern societies and developed countries from economic, political and social concern. In all countries, the quality of environment is of great importance and subject of management activity. We suggested that developed countries for the reason of dynamic economy and having economic actors by friendly improvement on substructures of environment overcomes to decrease of unnatural process in climate change is a problem and mental disturbance of all counties, so cooperation on political, legal and economical aspect with developing countries is considered one of the obligations of today world. Numerous international contracts and conventions are of great importance in terms of the cooperation between the states for the recognition and decrease of climate change, but it is not enough. We supposed the modern disasters caused by climate change should be essential need to change of substructures in societies, whereas the developing countries are rather unable to invest in this field and meet these challenges. We came to conclusion that developed countries as the investors need frequently use the project-oriented financial security for providing the management plans to decrease climate change.

Key words: finance; climate change; developing country; ecological management

Introduction

Nowadays, the climatic change is a serious risk and threat to environment equilibrium. By developing and progressing in the world, environment protection is found more significance day by day. Climate change is one more complicated difficulties which humankind confronts at present and will struggle in future, because it is influencing all aspects of human life including social, economic and cultural aspects. Climate change by susceptibility of environment can influence the stability of societies, namely government economic stability and social security (Williams, 2011). Therefore, climate change problem and prevention of its spreading is not an interior problem which is merely under responsible of government or nation, but rather has international importance. Ecosystem changes are not just the physical change, undoubtedly, it will be also transferred outside of regional/geographical boundaries. Climate change is outcome of natural processes and human activities which tends to constantly grow.

We suppose that not only natural effects of climate, but also its indirect effects such as international commercial fall, stress and political crisis will influence the environment and economy of all countries. The additional effect of this is that the developing countries are considering merely noteworthy budget to transfer the technologies for decrease of climate change and resolve the crisis; however, developing countries, which are most of susceptible climate change, are mostly disable to provide essential budget. About four decades ago the increasing of environment crisis initiated the international cooperation in climate and environmental issues.

Almost two decades ago the concern regards the world communications about climate change hazards causes to conclusion of numerous conventions at international societies. Although, these conventions have divided joint responsibility between all members but resolving climate change crisis to be need practical bases with high ability to investment. The subject of investment with attention to globalization of business and profitable of wealthy by natural sources is not new issue the matter which is investigated in this article is investigating the project-oriented financial security to provide of climate change expenditure in developing countries with Iran case study. By the geographical location, economic structure and climate, Iran is one of the vulnerable countries by the UNFCCC.S

Understanding of climate change and follow-ups

Climate change are points to oscillation in the world climate during the last decades. These changes are investigated by various geophysical methods. However, uncertainty of forecasting procedure or establishing such changes led to difficulties in prognoses and management. During the last decades, significant advancement has been happened in vanishing of uncertainty aspects of axial sciences (Rashidi, 2011). This evolution could also be collected on basis of politics and challenges related to climate change (Hasanli, 2010).

Development of technology, especially of modern innovations, has essential role to climate change mitigation. These technologies not only led to declining of hazards but also bring sustainable development and flourishing into the trade. Obviously after determining and recognition of climate change, we faced a definite confrontation as for strategies to overcome this crisis. The geographical feature, human activities, industrialization, and education influence the climate change in various locations. For instance, melting of Himalaya glaciers potentially has great danger for India: it carries irreplaceable effects and dire consequences (Pierru, 2013), whereas in Iran, drying of Urmia Lake can be warning for climate change (Rashidi, 2011). Climate change is quite complicated and has web structure, so the rate of potential effects is not clear still. Direct consequences of this problem were survived by different experts and defined like emission of greenhouse gas, Global warning, increasing of ground water (Barnett, 2014), floods or drought. All these events have lots of indirect consequence which can modify the human life.

Economic consequence can be referred to damages resulted from execution of international plans and reaction of climate change. By the policy of Kioto protocol, which try to decline petroleum gases, the governments of petrol export countries will lose 63 billion of their annual income (Norgaard, 2012). Disruption of economy stability could lead in price drop of agriculture crops what was happen in Australia. The obtained social consequences are the serious threats towards humanity, namely limited water and food sources that will bring poverty and migration, they finally should be referred to politic damages. Melting of arctic ice at North pole has been opened North-Western Passage as an international channel that with availability to rich sources such as oil (petroleum) has been resulted in series of disagreements and misunderstandings (Rao, 2016).

High cost of the project for climate change mitigation

Nowadays, the climate change effects in addition to atmospheric pressure on ecosystems influence the countries economically. Thus, ecological investment has very important role. Governments need to search the new technologies because while management of climate change at every stage do not cause profitability, but will definitely cause the declining or finishing the economic damages, so this is sort of profit. All counties participate in this - they are devoting considerable budget to eradicate the climate change and endeavor by tolerate high expenditure, not only the transfer of new climate change mitigation technologies, but modification of industrial foundations.

Unfortunately, developing countries endure mostly suffer from consequences of climate change, especially with regards to water sources reduction. Firstly, this matter is spreading for weak economic constitution of developing countries which cannot halter and decrease unpleasant consequences of this crisis. On the other hand, such capability is limited to response outcomes of this serious phenomenon and restoration of intensive change. The developing countries need to invest for the decreasing of the climate change, in addition to technologies transfer for the reducing climate change. These countries encounter many problems caused by low incomes, because primary substructure need to be advanced, dynamic and well adapted against unpleasant consequences of climate changes (Cabot, 2007).

Technology transfer

Countries are limited by their conditions and geographical potentialities concerning usage of modern technology to eradicate the climate change, for instance the carbon dioxide outflow. We could see some islands that rely on geothermal energy as one of the greatest energy source but underground steams, which have volcanic origin contain excessive carbon dioxide that can harm environment. Construction of power plant instead of carbon dioxide diffusion and the other gases in atmosphere, blend them with the obtained water of steams, injected to permafrost.

However, developing countries usually could not be the innovator of these modern technologies because of educational and technological limitations. In addition, such countries are obliged to purchase/to pay for these technologies, which have intellectual property law which demand massive capital in order to purchase these technologies.

Cost of New climate change mitigation technology's adaptation

All new inventions or technologies, at its inception or entry in counties naturally led to conflicts. In the industrialized world, all societies have different norms and conditions which have formed by culture, custom and economy; nonetheless, accepting the new technologies is imperative for the modern world.

Obviously, technology transfer in acceptor country must meet special conditions. In fact, the necessary measures to profit by transferred technology form 95% from the producer of climate change decrease (Thomas, 2006). For instance, in Iran the electricity supply is performed by usage of solar panels or windy sail instead of fossil fuels. Geographical location of Iran is

favorable to establish solar panels. It is obvious, that investment is the fundamental criteria for industrial infrastructures development, but the tight economy and bank system of developing countries are not able to provide these investments.

Importance of investment

Nowadays, climate change impacts the entire world. Countries with modern management and educational plans, investment in different sector and transferring, lastly technologies attempt to climate change adaptation, whereas developing countries' expenditures of these projects are over their annually budget. For instance, Iran is one of the developing countries and while have a strong and development plans to adaptation like artificial rain, cloud seeding and forest formation could not reach its aims for financial problems and lack investors. It should be noticed that developing countries going to be more vulnerable than the developed ones losing their biodiversity, water sources, forest, and lakes.

In addition, the banks of developing countries such as Iran or India were not disposed to accrue loan for climate change projects. We supposed that in these projects actually have no equipment or industrial machines that explain the unwillingness of ecological and environmental funds to give a loan for provide the necessary expenditures for climate change by technology transfer. In our opinion the developed countries could concern about critical condition of developing countries and especially about their future.

Foreign Investment

Fast growth of economy and essential needing to natural sources caused to conduct vast investment at developing countries in field of industry and its substructures. Developing countries have allocated nearly 52 percentage of the total inflow of foreign investments in 2012. In principle, the financing of projects dealing with the climate change must be secure from interior sources but for that matter developing countries do not have the high economy stability, then can provide fund for these projects from interior sources difficulty. Generally, the countries hedge found from international sources are under two types of fundamental contract: the company financing which in that company's possessions is counted repayment guarantee and the project financing in this case is repayment source of project obligations resulted from production sale and related investments belongs to the project (Borhani, 2009). In the most countries, after challenges among economists, finance as a foreign fund method, has been popularity for its simplicity. It is worthy of mention that matter of finance in all field which have economy justification is foreseeable. For example, financing in the more projects related to the oil transfer is providing through finance (Pierru, 2013) because investment risk in substructures of these projects approximately is zero. The project financing has been present several definitions which can be used in different fields.

In fact, meaning of the projects financing is dynamic and expand to present a brief a comprehensive definition. In spite of that, the various definitions exist in this field, as an example:

1. Financing of the investment project is a kind of facilities that lender considers through it by funds flow and incomes as repayment and pays the project wealth for instance of the security for a payable loan.
2. The phrase of financing for investment project is used to refer of financial structure with comprehensive sense (Williams, 2011).
3. Although there are very great definitions for the project financing but it can be defined as financing for spreading or exploiting of an obligation natural source or other investments, of course in the cases that majority of financing do not provide as capital but fundamentally from the future incomes.
4. The project financing can be defined as the spread financing or profiting, natural source or the other investments that the crowded of financing through debt is done and basically it is repayment performs out of capital and according to its incomes (Ozkol, 2011). In this way can be the whole of substructures plans including oil, gas, tunnel, refinery or energy station plans which can be produced regular incomes.

The issue question is dealing with the problems prevent from investing in the climate change project. Financing, development and environment have direct relationships. Finding funds for various economic sectors is prerequisite of premier economy. Undoubtedly, reaching to advanced economy could not happen without benefit healthy environment. Therefore, the first step is profitability of these projects for this case is necessary to have a broad insight of universal economy. Nowadays irregular use of fossil fuel is one of the main reasons of the heating earth weather and as result changing or climate. Also the volume of natural source is limited completely and is valuable economically too. About 200 years after the produced fuels from hydro carbon will not find plenty as today.

Nowadays, the majority of factories feeding with fossil fuel, so in each period of time the needed fire of industry and factories must be lighted by fuel. Whereas these unique sources will be finishing, it is necessary to think a remedy. Finishing oil in Iran, Kuwait or Qatar, not only economies of these countries will reach deadlock, but also the whole of international trade will reach to decline. More practical method is using of green energy supplies (Wind or Solar energy). Not only it reduces fossil fuel consumption, but also leads to safe guarding it for future generations. One of the main reason of climate change is eliminated which have high value economy (Strive, 2001) and using of new technologies needs the novel projects in direction of changing substructures.

The second case is increasing public awareness. Public awareness and individual information firstly are considered with climate change. Since it is a new problem at present (Nergaard, 2012), after accepting the problem of climate change, people must to go along with the government for solving this problem, because behavior and function of them in this time is one of the basic

ring for decreasing speed of these changes. Moreover, in developing countries exist the problem of belief and negative mentality about investment and foreign capital. This belief in developing countries like Iran is under the impression thought and thinking of individuals that prefer government economy to free economy. In this field, the acceptor governments of capital have a very great role to make a like public thought, such as specialists, economists, psychologists and legal advisers. The third case is convincing investor countries because this is completely specialized. In the beginning law and trails of the receptor government must not cause to worry about foreign investors by intricacy of the condition, so must to give up excessive old laws, because they limit trade and modern investment and must be prepared a suitable place for investment. Then the acceptor governments must aware of their environmental abilities. For instance, Loot desert (located in center of Iran among Kerman, South Khorasan and Sistan Baluchistan provinces; two main faults surround that from east and west), which is the warmest and most skylight area of Iran, and set of solar panels in large scale can provide energy to factories in Kerman or the needed energy to industrial systems in Semnan mines. Generally, utilization of modern and environmental-friendly agricultural machinery, modern water supply procedure (water desalination, recycling and water refinery), appropriate technologies for converting raw material, developing of advanced fire suppression systems, accessing to new technologies in the industrial sector are essential technologies which all developing countries need to access them.

Conclusion

Nowadays, this is clear that solving of climate change problem cannot be obligations of crisis area because direct and indirect effects have no boundaries and could not be localized. So, multilateral cooperation between the governments must be of vital importance. Developing countries require to cooperate with developed countries for their limited economical ability. World Trade and dynamic economy are two categories of modern society. Even if all countries are not benefited equally they strive to flourish and they need raw materials obtained from environment. So, the climate change in one area has capability to influence the world economy. Climate changes which have the greatest effect in developing countries in terms of destroying environment and natural sources are also influenced the world economy. The developed counties are able to reduce the speed of climate change investing to the projects aimed to climate change control in developing countries. Developed countries could make profits from these projects and will be able to input into the equilibrium of world economy.

References

- Abbaspour, M., Nazaridoust, A. (2007). Determination of environmental water requirements of Lake Urmia, Iran: an ecological approach. *International Journal of Environmental Studies*, 64(2), 161-169. doi: 10.1080/00207230701238416.
- Alipour, S. (2006). Hydrogeochemistry of seasonal variation of Urmia Salt Lake, Iran. *Saline Systems*, 2, 9. doi: 10.1186/1746-1448-2-9
- Barnett, J., Dessai, A., Webber, M. (2004). Will OPEC loss from the KYOTO protocol? *Energy Policy*, 32(1), 2077-2088.
- Borhany, H. (2002). Banking and international finance. Iran. Higher banking institute Publishing.
- Cabot, V. (2007). Climate change, Water resource and Environmental Resource Management. London W160ER
- Dechezleprêtre, A., Glachant, M., Hascic, I., Johnstone, N., & Ménière, Y. (2011). Invention and transfer of climate change-mitigation technologies: a global analysis. *Review of environmental economics and policy*, 5(1), 109-130.
- Djafarov, T. (2011). Water transfer of Araz River to Lake Urmia is discussed between Iran and Azerbaijan. *Trend News Agency* 26 December 2011. Available from: <http://pda.trend.az/en/1973742.html> Accessed on 25.09.2017.
- Eimanifar, A., Mohebbi, F. (2007). Urmia Lake (Northwest Iran): a brief review. *Saline Systems*, 3, 5. doi: 10.1186/1746-1448-3-5.
- Ghaheri, M., Baghal-Vayjooee, M., Naziri, J. (1999). Lake Urmia, Iran: A summary review. *International Journal of Salt Lake Research*, 8, 19-22.
- Golabian, H. (2010). Urumia Lake: Hydro-Ecological Stabilization and Permanence Macro-engineering Seawater in Unique Environments (pp. 365-397). Berlin: Springer-Verlag. doi: 10.1007/978-3-642-14779-1_18.
- Hasanli, A. (2010). Climate change and its consequence on environment and water resource. Jahade Daneshgahi Publishing.
- Hassanzadeh, E., Zarghami, M., Hassanzadeh, Y. (2011). Determining the Main Factors in Declining the Urmia Lake Level by Using System Dynamics Modeling. *Water Resources Management*, 26(1), 129-145. doi: 10.1007/s11269-011-9909-8.
- Hoseinpour, M., Fakheri Fard, A., Naghili, R. (2010). Death of Urmia Lake, a Silent Disaster Investigating Causes, Results and Solutions of Urmia Lake drying. Paper presented at the 1st International Applied Geological Congress, Department of Geology, Islamic Azad University, Islamic Azad University - Mashad Branch, Iran.
- Jalili, S., Kirchner, I., Livingstone, D., Morid, S. (2011). The influence of large-scale atmospheric circulation weather types on variations in the water level of Lake Urmia, Iran. *International Journal of Climatology*, doi: 10.1002/joc.2422.
- Karbassi, A., Bidhendi, G., Pejman, A., Bidhendi, M. (2010). Environmental impacts of desalination on the ecology of Lake Urmia. *Journal of Great Lakes Research*, 36(3), 419-424. doi: 10.1016/j.jglr.2010.06.004.
- Mackey, R. (2011). Protests in Iran Over Disappearing Lake. *The Lede / NYTimes* 30 August 2011. Available from: <http://thelede.blogs.nytimes.com/2011/08/30/protests-in-iran-over-disappearing-lake/>. Accessed on 24.09.2017
- Norgaard, K.M. (2012). Climate denial and the construction of innocence: Reproducing transnational environmental privilege in the face of climate change. *Race, Gender & Class*, 80-103.
- Ozkol, B.B. (2011). The Possible Ways to Finance the Renewable Energy Projects in Terms of Project Finance and Law. *Ankara B. Rev.*, 4, 11.

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- Pierru, A., Roussanaly, S., & Sabathier, J. (2013). Capital structure in LNG infrastructures and gas pipelines projects: Empirical evidences and methodological issues. *Energy policy*, 61, 285-291.
- Rao, V.B., Frankchito, S.H., Gerolawo, R.O.P. (2016). Himalayan Warming and Climate Change in India. *American journal of climate change*.
- Rashidi, A., Nazemi, A. (2011). Consequence of drying lake Urmia on Environment. The first international conference on Kish. Iran.
- Reveshty, M. and Maruyama, Y. (2010). Study of Uremia Lake Level Fluctuations and Predict Probable Changes Using Multi-Temporal Satellite Images and Ground Truth Data Period (1976-2010). Paper presented at the Map Asia 2010 and ISG 2010, Kuala Lumpur, Malaysia.
- Strive, J., Holland, M. (2001). Article Sea Ice Decline: foster than forecast. *Geophysical Research letter* 3,34, L09501.
- Thomas, W., & Chancer, C. (2006). The Need to Be Sustainable-New Environmental Rules are Forcing Banks to Change the Way they Look at the Real Cost of Project Finance. *Int'l Fin. L. Rev.*, 25, 62.
- Wada, Y., van Beek, L., van Kempen, C., Reckman, J., Vasak, S., Bierkens, M. (2010). Global depletion of groundwater resources. *Geophysical Research Letters*, 37(20). doi: 10.1029/2010gl044571.
- Williams, A. (2011). Climate Change Law: Creating and Sustaining Social and Economic Insecurity. *Social & Legal Studies*, 20(4), 499-513.
- Zarghami, M. (2011). Effective watershed management; Case study of Urmia Lake, Iran. *Lake and Reservoir Management*, 27(1), 87-94. doi: 10.1080/07438141.2010.541327.
- Zeinoddini, M., Tofighi, M., Vafaei, F. (2009). Evaluation of dike-type causeway impacts on the flow and salinity regimes in Urmia Lake, Iran. *Journal of Great Lakes Research*, 35(1), 13-22. doi: 10.1016/j.jglr.2008.08.001.
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