Sustainable development of three Taiwan's communities

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Abstract: The sustainable development becomes a very important issue, when one-half of the world’s population could be defined as living in cities since 20th century. Urbanization in Taiwan also increases within 50 years after economic growth. Meanwhile, non-sustainable development in Taiwan emanating from the continuous ignorance of fragile ecosystems, and therefore pollution and energy consumption problems seems to be the driving force behind the eco-city or eco-community idea in regional planning research field. Lessons drawn from the examples cited are further deconstructed in the light of their contribution to environmental disruption reduction, which provides direction to appreciating the 'eco-community' concept in Taiwan. Further, this paper attempts to unravel existing community-based practices in Taiwan, which are boon to the local environment and invariably reduce disaster risk. The evaluations of three communities in this research also indicated the advantages and defects from the sustainable point of view. This paper also illustrates how 'eco-community' approach is inevitable in the present and future contexts not only to preserve sustainable development gains but also to secure human well-being. Meanwhile, some strategies were provided for achieving our ultimate goal, sustainable country.

In recent years, the concept of environmental protection in Taiwan can be compared to developed countries, while promoting energy saving and carbon reduction is the mutual task of both government and people. Through evaluation system and certification, communities may move toward sustainability and ecological low carbon. However, as the evaluation indicators should comprised of calculable, feasible and fairness, which might lead to the bias assessment. Therefore, only the active pursue of the community on the goal of ecology, low carbon and developing unique local features, with the assistance of public agencies to provide techniques, budget and knowledge, Taiwan’s communities can develop into amazing eco-communities, with people in the communities integrate low carbon implementation into daily life. If so, Taiwan will soon be the low carbon nation.

Green building, Eco-community, low carbon, Green life

Introduction
Since sustainable development becomes a very important issue, there are a lot articles discussed about how to make community more sustainability. For instance, there is a study creating a concerted approach for making 'Eco-city' to 'disaster-resilient eco-community' in the coastal city of Puri, India (Surjan and Shaw, 2008). On the other hand, Valentin and Spangenberg proposed how local sustainablility indicators can be developed and how they can help to reduce the complexity of sustainability by a research (Valentin and Spangenberg, 2000). In addition, Brugmann made a planning for sustainability at the local government level...
Brugmann, 1996). These researches are focus on finding the good way to make more communities become sustainable communities.

With soaring prices of goods and electricity in Taiwan, low carbon has become a trend as not merely reducing carbon emission through various measures and helps to control the global warming, and it symbolizes the practical advantage of saving patrol, electricity and water.

As a matter of fact, low carbon community has other similar terms such as ecological community, sustainable community, environmental protection community, green community or carbon zero community, and the mutual objective aims at achieving greening environment, saving energy of building, greening transportation, recycling environment, renewable energy, and conserving ecology. Therefore, if one community strives to work on one or two items mentioned above, then it will move toward low-carbon community. In the past, many people regard becoming low carbon community is a difficult task that is probably due to the indicators judged by each sector. However, each community can be a low carbon community if it takes many small steps, then it will make a big difference to gradually become a low carbon community.

**Eco-community implementation in countryside**

As the ultimate goal of low carbon community is precisely to reduce carbon emission and save energy, the strategy and method can be flexible and fuzzy, as the key point is to take measures in line with circumstances. According to my visits on dozens of low carbon communities, they can be divided into urban, village and individual type of community based on geographical environment, characteristic and scales of city and village.

For village type, Fengtiam San Village, Hualian and Xinshi Community, Xinchu can be the case study. Fengtiam San Village, Hualian depends on Niuli Develop Society, putting efforts on greening the agricultural type community, recycling resources, protecting and making use of old buildings, protecting local culture, and even providing services for old folks. After a few years of endeavors, the community has become self-sufficient financially, and is even able to plan for the community’s future development. While Xin-Shi Community in Xinchu is initiated by Wen-Tong Chen couple who work for the Develop Society. They first engaged in the community cleaning, and then developing community ecological parks, community farms, eco pond, and the community documentary film. Recently, they have started to explore how to combine the concept of low carbon community with the usage and cleaning of water resource in Beishi River, becoming a riverside type community in the suburban area.

**Eco-community implementation in city**

On the other hand, as the urban type low carbon communities are numerous, therefore only Chung Sheng Community, Taoyuan, Jiantan Community, Taipei and Shun-de Community are discussed as the examples. The chief of Chung Sheng Community, Taoyuan is the one who initiates the task, he drives the community to work on community greening, resources recycling, low carbon temples, community farms, improving energy-efficient lightings, and community education, which is a successful urban-type low carbon community. Besides,
Jiantan Community located in Taipei metropolitan area and Shun-de Community are lead by Mr. Bi and Mr. Li, chiefs of the community, and they vie for budget to undergo greening of community, recycling resources, enhancing the energy efficiency of facilities in community center, making use of water resources, setting up rain water collecting system, greening roads, becoming the successful cases of low carbon communities in urban area.

**Eco-community implementation in a small community**

In the discussion of individual low carbon community, Yang-Ming Xue Yuan Community in Xin Zhuang, New Taipei, proves that even a small community without public resources, can be an impressive low carbon community. It was an ordinary and unnoticed community, but after the efforts of Mr. Xiang, the chair of management committee, the rooftop of the community is equipped with a garden to produce vegetable, mini rain water usage system, mini wind power generator, solar panels, leftover composing system and other related measures. The illumination in the stairways is energy efficient LED lightings, while the basement has a resource recycle area which has over ten types of recycled items, LED lighting, renewable energy charging stand, biomass emergency generator, energy saving classroom, and LED emergency lights. These facilities are not funded by the government, proving that the determination of becoming a low carbon community when without any supports from outside can be feasible.

**Conclusion**

In recent years, the concept of environmental protection in Taiwan can be compared to developed countries, while promoting energy saving and carbon reduction is the mutual task of both government and people. Through evaluation system and certification, communities may move toward sustainability and ecological low carbon. However, as the evaluation indicators should comprised of calculable, feasible and fairness, which might lead to the bias assessment. Therefore, only the active pursue of the community on the goal of ecology, low carbon and developing unique local features, with the assistance of public agencies to provide techniques, budget and knowledge, Taiwan’s communities can develop into amazing eco-communities, with people in the communities integrate low carbon implementation into daily life. If so, Taiwan will soon be the low carbon nation.

**References**

