

The potential role of mothers in climate change mitigation

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ABSTRACT

All of individuals can contribute in climate change mitigation either in reducing emissions of carbon dioxide (CO₂), methane (CH₄) or nitrogen dioxide (N₂O). One of the ways to prepare individuals willing to contribute in climate change mitigation is through education of family because all of individuals are part of the family.

Mother has been a family educator since long time ago and with this role, mothers have the potential to play a role in climate change mitigation. As a mother of her children, mother has potential as an intermediary to pass on the values of climate change mitigation to her children. As a wife of her husband, mother has potential to implement green behavior in housekeeping, this case as well as a role model to her children. Moreover, mother also has the potential to encourage her husbands to contribute in climate change mitigation. As a members of society, mother can suggest to the community to contribute in climate change mitigation and shaping the family that have green behavior as role model in the community. Providing insight of climate change for mother is an important step to mobilize communities to participate in climate change mitigation.

Key words : climate change, mitigation, role, mother.

Introduction

The impacts of climate change has reported (see UNFCCC, 2007). The climate has always changed naturally but the climate change currently and in the future is not only caused by natural events, but rather because of human activities (NUDP Indonesia, 2007) and changes in these behaviors have major potential to limit the magnitude of climate change (Stern, 2011).

Change the behavior is not easy, but it is possible. One of the ways is put education related to climate change to family because all of individual is part of the family and will return to the family. Educating the family is one of the role of mother. This paper will discuss the things that can be done by individuals in climate change mitigation and the potential role of mothers in preparing the individual willing to do it.

The options of individual's contribution in climate change mitigation

Mitigation efforts aim to reduce the rate of greenhouse gas emissions so that greenhouse gas concentrations in the atmosphere is still in a tolerable level (RI, 2007). These greenhouse gases include carbon dioxide (CO₂), methane (CH₄) and nitrogen dioxide (N₂O), and a rise in these gases has caused a rise in the amount of heat from the sun withheld in the Earth's atmosphere, heat that would normally be radiated back into space. This increase in heat has led to the greenhouse effect, resulting in climate change (UNFCCC, 2007).

Mitigation of climate change is not only the duty of the state or organization, each individual can contribute to climate change mitigation. Although in the individual scale is small enough, but if it is done by many people and continuesly, it will contribute significantly in climate change mitigation effort.

The main greenhouse gas that increasing is carbon dioxide. This gas is one of the gas that naturally comes out when we exhale, is also produced from burning coal, or wood, or from the use of gasoline and solar. Much of this carbon dioxide

can be reabsorbed, including through process of 'photosynthesis', which is part of the growth of plant or tree (UNDP Indonesia, 2007).

To reduce carbon dioxide in the atmosphere, the things that can be done by individual including save electricity (there are electricity generation that use coal energy), support the supply of biofuels (for example, collecting waste cooking oil as material for synthesis of biodiesel (Suirta, 2009)) and planted the vegetation around the residence for reabsorb of carbon dioxide (also see Lorenzen, 2012).

Methane (CH₄) is the second most important greenhouse gas after carbon dioxide (Suprihatin *et al.* 1998). Methane is emitted from a range of natural (wetlands, termite activity and oceans) and anthropogenic (relating to human activity involve agricultural livestock, rice cultivation, waste practices, coal mining, natural distribution and biomass burning) sources (<http://www.eci.ox.ac.uk/research/energy/downloads/methaneuk/chapter02.pdf>).

Humans in every activity is almost always produce waste and strategies to minimize the formation of methane gas from waste that can be done by individuals including composting, reduce, reuse, recycle and green consumer (Sudarman, 2010). In the process composting occurs aerobic reaction that does not produce methane gas, so this method will reduce methane emissions into the atmosphere. (Suprihatin *et al.* 1998; Sudarman, 2010). Reduce namely reduces all things that contribute to the waste, for example carry bags or baskets from home when shopping , reducing unnecessary packaging. Reuse namely the reuse of waste that still can be used either for the same function or other functions, eg waste bottles for waste cooking oil containers and recycle is process the waste into new products for example processing organic waste into compost. Green

consumer is a consumer group that using the environment criteria in selecting the goods or the consumer who is aware and concerned about how important to act friendly to the environment. Green consumer can reduce the waste and finally reduce the methane gas emission (Sudarman, 2010).

Nitrous oxide is emitted from anthropogenic (manmade) and natural sources. Oceans and natural vegetation are the major natural sources of N₂O. Anthropogenic sources of N₂O are Agricultural soil management (e.g., fertilization, application of manure to soils, drainage and cultivation of organic soils), combustion by mobile sources (cars, trucks, etc.), nitric acid production, and manure management (Bracmort, K. 2010).

Reducing the use of vehicles such as using public transport, going on foot (if close) and ride a bike is option that can be done by individual to reduce nitrous oxide emission.

What influence behavior?

Behavior can be defined as the way in which an individual behaves or acts. It is the way an individual conduct herself/himself. Behavior, therefore, is the way an individual acts towards people, society or subject (Guez and Allen, 2000). An individual perform a given behavior because she/he has the individual's intention. The individual's intention to perform a given behavior is the central in the theory of planned behavior (Ajzen, 1991).

The theory of planned behavior postulates three conceptually independent determinants of intention. The first is the attitude toward the behavior and refers to the degree to which a person has a favorable or unfavorable evaluation or

appraisal of the behavior in question. The second predictor is a social factor termed subjective norm, it refers to the perceived social pressure to perform or not to perform the behavior. The third antecedent of intention is the degree of perceived behavior control which, as we saw earlier, refers to the perceived ease or difficulty of performing the behavior and it is assumed to reflect past experience as well as anticipated impediments and obstacles. In some applications it may be found that only attitudes have a significant impact on intentions, in others that attitudes and perceived control are sufficient to account for intentions, and in still others that all three predictors make independent contributions (Ajzen, 1991).

Potential role of mother

Every individual in this world is part of family and family is the basic unit of society. One of the functions of family is socialization of children. The child learns language, customs, etiquette, norms and values, beliefs and social roles. The family lays down the foundation of human personality (<http://nos.org/331courseE/L-13%20FAMILY.pdf>). Family education greatly influences the process of shaping one's personality and role of mothers as an educator of family has been long time (Hanum, 2010)

The mother as the central figure in family is very important in running life. Role of women in the family in general divided into the role of women as mothers, women as wives, and as a member of the community (Noor, 2002).

One of the roles of women as mother is educating her children. Mother has potential as an intermediary to pass on the values of climate change mitigation to their children as the next generation because mother is close to their children. In

educating children, a mother should be able to be a role model for their children considering that child will imitate the behavior of parents, especially mothers (Noor, 2002). Mother should implement the behavior that can mitigate the climate change in daily life, so their children can see it. Children will take the values as well as the behavior of their mother.

As a wife of her husband, housewife has a role to take care of the household. Mother has potential to implement green behavior in housekeeping. Moreover, mother can also play a role as motivator for her husband (Noor, 2002; Hanum, F., 2010) and also serve as advisors (Noor, 2002). Mother has the potential to encourage her husbands to contribute in climate change mitigation.

As members of society, a mother is expected to participate in community building including in climate change mitigation. Mother can suggest to the community to contribute in climate change mitigation and shaping the family that have green behavior as role model in the community.

To optimize her role, mother need to learn the knowledge of climate change mitigation, so providing insight of climate change for mother is an important step. Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations is one of commitment of UNFCCC (UN, 1992) and mother with a large enough role in the family has the potential to do it.

Mother has the potential role in climate change mitigation by providing an understanding about the benefit to perform climate change mitigation and as role model to the family and community. These are expected to influence the family and community attitudes towards climate change mitigation. Moreover,

participating in climate change mitigation is expected to be a subjective norm in family and community. If the attitude of individuals in climate change mitigation is good and climate change mitigation to be a subjective norm, it can be expected that performing the climate change mitigation is the easy thing to be done by all individuals. So, an individual's intention to perform climate change mitigation will emerge strongly, and climate change mitigation will be a behavior.

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