Environmental preservation and sustainability of natural resources through traditional adat value (Study case Kampung Naga, West Jawa)

Donna Asteria1*, Agus Brotosusilo2, M R Soedrajad3, F N Nugraha4

1 Department of Communication, Faculty of Social and Political Science, Universitas Indonesia, Depok, West Java 16424, Indonesia
2 Faculty of Law, Universitas Indonesia, Depok, West Java 16424, Indonesia
3 Department of Philosophy, Faculty of Humanities Universitas Indonesia, Depok, West Java, 16424, Indonesia
4 Faculty of Humanities Universitas Indonesia, Depok, West Java, 16424, Indonesia

*onna@ui.ac.id

Abstract. Technological, social, and cultural developments are gradually becoming more complex and transforms, which is give implications in various systems, such as economics, social, and political. That implication not only brings benefits but also harms the environment. In the pressure of that development, traditional adat values, and the uniqueness of local culture in Indonesia bring another perspective of the environment. This study will discuss conservation studies carried out by the people of Kampung Naga in Tasikmalaya, West Java, from environmental preservation and the sustainability of natural resources as a form of local wisdom implementation. From that local perspective, there are other ecological guidelines can utilize in term of sustainable natural resources. Ecological guidelines should require specific information for their use, should include precise instructions that can be followed and corporation with socio-economic restrictions on the conservation of biodiversity. Through the local culture and traditional adat values, ecological guidelines can bring environmental preservation and natural resource sustainability.

1. Introduction

Homo sapiens species started to construct complex systems called culture after the cognitive revolution began about 70,000 years ago. 58,000 years later, the agricultural revolution followed. The scientific revolution, which started just 500 years ago, may well put history to an end and begin something entirely different [1]. Technological, social, and cultural developments are gradually becoming more complex. This progress offers human easiness in solving problems. The transformation process continues and has implications in various systems, such as economics, social and political. In agriculture, Ellis and Biggs explain that modernization makes farmers try new seeds, new production methods, and new marketing skills [2]. Many people seek new ways to manufacture products in the process of being 'modern' [1]. Modernization usually causes people to abandon conventional things. Gumbrecht explains that since the fifth century AD, the word 'modern' has been used to differentiate 'new' items from 'old' or 'antiquity,' particularly explaining new institutions to new academic assumptions. In a very general sense, the meaning of the word 'new' determines how one
differentiates a thing from the past [3]. Then, 'new' was no longer just an alternative to the old or the ancient, but came to be known as the long-term phase of social science reform called 'modernization' [3].

Indonesia is known as a rich culture, and one of the aspects that are sought and is unique about Indonesia is their local wisdom. Koentjaraningrat revealed seven elements of cultural forms: language, community organizations, knowledge, religious systems, arts, technology and equipment, and livelihoods [4]. The results of human thought will always develop and be rooted in the lives of the people. Simultaneously, it is recorded no fewer than 520 ethnic groups in Indonesia with various cultures. It is also revealed that culture is the whole idea and work of humans. Indonesia here is a country that is still very much attached to the traditional lifestyle and customs. However, just because one is utilizing things traditionally does not mean that they only require minimum knowledge. It needs skills and competencies from the implementation and utilization of established experiences embedded in, for example, local and traditional knowledge structures and institutions to the discovery, creativity, and creation of new management approaches such as adaptive and transformative governance [5]. The broad field of research on development generally regards the environment as one of the many factors contributing to human well-being [6]. The tendency is to concentrate on one natural resource at a time, reduce environmental effects, or maintain a healthy environment. For example, the way humans are linked to the world is expressed in the Millennium Development Goals. Many social-ecological research studies that advocate for deeper integration with social science also tend to address environmental concerns in this way. Nowadays, as in incorporating this traditional lifestyle into today's culture, there is growing commitment. As reported, as part of ecosystems and seascapes' stewardship efforts, new projects specifically take into account and value traditional and indigenous information structures and cosmologies [7]. For this purpose, many of them practice environmental management and develop some local ecological awareness, thereby acting as "ethnic wildlife habitat management" and are institutional and social memory carriers of resource and ecosystem dynamics, with insights that also understand long-term and large-scale change.

Of course, the 'modern' things make using more efficient labor possible. New technology gave birth to the eighteenth and nineteenth centuries' first industrial revolution when modern machines replaced human ability and muscle, railroads transformed land transport, and steamships replaced sailing ships [8]. In this situation, there is a possibility of better control of the production process. If we mix modernization with technology, it entails much stuff in its realization. Technological development includes sound infrastructure, a stable education system, and representative political institutions [9]. The common characteristics that societies appear to evolve as they become modern which vary from one version of modernization theory to another, but generally all agree that institutional structures and individual behaviors become more highly structured, differentiated, and incorporated into the social, political, and economic forms that characterize advanced Western societies [10]. Apart from modern and technological, traditional societies like not needing help from everyday things because they have a close relationship with nature. Traditional communities, also referred to as indigenous or tribal people, typically gain substantial knowledge of the environment through their daily contact with nature and natural resources [11]. The intimate relationship between their life and nature creates an ecocentric viewpoint expressed in attitudes toward plants, animals, water, and soil, in which nature and society are seen as an indivisible whole [11][12].

Unfortunately, modernization not only brings benefits but also has a negative impact. Modernization affects many things, including politics and economics [2]. As England's first industrial revolution disrupted Europe's attempts to catch up with political borders and other obstacles to individuals' free flow, technology, and goods [8]. Increasing the quality and quantity of industries in various countries causes waste to be inevitable in the environment. Something modern can probably make work efficient. The discovery of increasingly sophisticated tools is possible. However, can
'modern' things solve ecological problems? Ecosystems are under various threats related to global warming, deforestation, pollution, and species extinction [13]. These problems are related to a combination of capitalism and system design that regulates technology and economic, political, ideological, and military forces [9]. On the one hand, the experiences of ecological crisis and disaster and, on the other, of economic globalization and worldwide diffusion of cultures have made sociologists think a new thing about the cultural transition at a macro stage, about discrepancies between tradition and modernity, and about the potential path and direction of social evolution at the turn of the millennium [3][13].

Things may be overcome by maintaining traditional adat values. This study will discuss conservation studies carried out by the people of Kampung Naga in Tasikmalaya, West Java, from the perspective of environmental preservation and the sustainability of natural resources as a form of local wisdom implementation. Thus, various landscapes related to agriculture, settlements, governance of sloping land, river management, and protected forests carried out by the people of Kampung Naga through the traditional adat values may be used as good conservation references in modern times.

2. Method
Based on the purpose of this paper, which was explained in the Introduction section, field observation was conducted during 2019 in Tasikmalaya, West Jawa. In there, the researcher was interviewed some of the Kampung Naga people. During the observation, the researcher was tried to the experienced culture of Kampung Naga people has been implemented. In there, the natural landscape and they are lifestyles was documented. The results of field observation were then researcher analyzed and reviewed based on an environmental perspective.

3. Results and discussion
Modern lifestyle is at the heart of causing the declining world. There are so many instances where the modern lifestyle stepped on mother earth’s shoes and broke down the world one step at a time. Modern ways of living offer new meaning to the adage that 'home is where the heart is.' Although the notion of home has often been suggested to be inseparable from one's sense of self, it also means that home is not inherently where one physically (or legally) resides [14]. Modernization and globalization movements not only make this more real, but they also seek to dislodge one's core (identity) from singular roots and redistribute it like so many rhizomes across space. This is one part of a modern lifestyle that is corrupting the earth with the mobility lifestyle that comes along with it. The mobility here means that there is more waste to produce by society, and the waste is evenly spread out because mobility comes here and there. It is, therefore, creating a society that trashes the earth every day by their mobility. Environmentalist also claims that this mobility trend is toxic for the environment, so it is only necessary to make sure that the mobility life that modern people have lived can be nontoxic for the earth.

The center of human progress is undoing the continuous loss of human well-being and biodiversity. Although there are different institutions and ways to change such trends, the critical factor seems to be a little consideration of population development. Scientific-based population growth has been minimized and trivialized, which may explain the diminished public interest in the subject and, in turn, the reduced appetite for political action [15]. Different sources of evidence show that demographic change can have a significant effect on society, the atmosphere, and the economy. Although there will be significant obstacles to solving the issue of overpopulation, including scientific inspiration, public science illiteracy, religion, and media attention, continued neglect of this subject will increase not only the effect of anthropogenic stressors but also the struggle associated with strategies to reverse biodiversity loss and improve human health. The concern about the future demand for food and water is further intensified by the significant environmental and climate impacts of these services' provision to date [16]. The most recent figures show that agricultural expansion accounts for 5-10 million hectares of forest deforestation annually.
By contrast, unsustainable practices have caused the world's cropland to degrade by ~30 percent at a rate of 10 million hectares per year. Growth in the population also poses additional challenges for keeping food supplied by agricultural expansion, which can lead to conflicts about the land needed to conserve biodiversity. Harte refers to this situation as the "low-hanging fruit is first selected," to suggest that the most fertile soils and the cleanest water are very likely to be used or still used; therefore, as our population increases and its distribution spreads, we can see less and fewer such suitable agricultural areas [15]. Meeting food demands through agricultural expansion may also generate conflicts between land use for agriculture and the land needed to protect biodiversity [15]. The population stabilization goal is also suggested to be 2.1 children per woman (one child to replace the mother, the other child to replace the father, and the 0.1 targets for infant mortality) since this will remove the generation in question. Such a goal should be approached with caution, however. Even if the growth rate is held at replacement levels of 2.1 children per woman, increasing life expectancy and early reproduction may generate inequalities between generations, increasing population size.

According to today's demographics, population stability is achieved when the birth rate is equal to the death rate, equivalent to one child per woman. Communicating the need to manage population growth would require a coordinator for politicians and the general public and, more specifically, for priests, based on the above challenges. The public assimilation of scientific knowledge is undoubtedly the most daunting obstacle to resolve overpopulation when coping with religious and political values, but this is not impossible because religions often adapt to modern society's requirements. This does not follow the planners' effort to meet many conflicting goals that often minimize the possibility of environmental policies being effectively implemented. Detailed sustainability plans have been constructed by many cities worldwide since 2000. Municipal Sustainability Plans (MSPs) are detailed visions and priorities laid down by a government or other public organization [17]. A local sustainability plan is a comprehensive and multi-departmental document outlining a community's sustainable future strategies, visions, and priorities. These initiatives address several topics: the atmosphere, energy, transport, green jobs, housing, human health, recreation, parks, etc. These plans also store current issues and issues, identify goals and priorities, and create benchmarks for progress evaluation. Because there is no national framework for U.S. sustainability plans, however, since targets can be so varied across different cities and geographies, the plans tend to vary in the way they are developed and structured, the subject areas they contain or lack, and the regional and local-specific problems they are seeking to fix.

Among the discourses of modernization and environmental destruction, one of the indigenous peoples in West Java is still able to preserve their ancestors' traditions and culture during today's technological progress and the development of modern society around it. They are the indigenous people of Kampung Naga. Administratively, they are in Neglasari Village located on the provincial road that connects Tasikmalaya and Garut Districts on Tasikmalaya Regency, West Java Province, Indonesia. They live without electricity, do not use modern agricultural equipment, and refuse any foreign interference that does not conform to their cultural values [18]. Therefore, the society do not know of why they should do and do not do something [19]. Their tradition is strong enough to rejects the others even external art. For example, they disallow dangdut music, western music, organ, puppeow, martdoes arts, anything alien to their ancestors' widespread practice [18]. Following the ancestor brejecthe, only rea, son of why they should follow some rules [19]. They appreciate the environment and try to suppress disaster. According to Bakornas, Indonesia's most frequent disaster is a flood, drought, land and forest fire, hurricane, earthquake, tsunami, volcano eruption, technology, technology failed, and epidemic disaster [19]. The architecture of traditional houses in Kampung Naga was resistant to some of Indonesia's common natural disasters [20]. Traditional communities in Kampung Naga, West Java, and the Japanese state have similarities in maintaining the harmony of nature [20][21].

4. Conclusion
The are numerous explanations of why ecological guidelines require further work. First, most of the guidelines require specific information for their use because, for most species, such details on the spatial scale required for planning are limited and takes time and money to obtain. To make it worse, services in most planning departments are inadequate. Second, most ecological guidelines are not prescriptive because they do not contain concrete guidelines that can be followed. Finally, there are very few environmental guidelines that incorporate socio-economic restrictions on the conservation of biodiversity. Uniquely, their environmental preservation perspective utilizes natural resources as a form of local wisdom implementation too. Land management done by Kampung Naga society has been proved to be environmentally friendly. The form of local wisdom in Sundanese society, the local wisdom in Kampung Naga following aspects like using clean, dirty, and natural zone for layout; using house material according to tradition, including their house orientation and architecture; have the appropriateness with the environment and traditional ceremony, and have proverb and philosophy of life.

Acknowledgements
This research is funded by Program Penelitian Dasar Ungguan Perguruan Tinggi (PDUPT) Kementerian Riset dan Teknologi/ Badan Riset dan Inovasi Nasional (KEMENRISTEK/ BRIN)-Universitas Indonesia with contract number 8/E1/KP.PTBNBH/2020 and 255/PKS/R/UI/2020 and the authors would like to Atiti Setyaning Utami Mudjiardjo, Erline Fitridiah Pitaloka, Kuny Izza Indah Afkarina, Sindhung Wardana (Tasikmalaya).

References
[1] Y N Harari 2014 Sapiens: A Brief History of Humankind (Signal Books)
[2] J A Matunhu 2011 Critique of Modernization and Dependency theories in Africa: Critical Assessment Afr. J. Hist. Cult. 3 65
[3] P Nolte 2015 Modernization and Modernity in History (International Encyclopedia of the Social & Behavioral Sciences, 2nd edition) 15
[4] E Syarif 2017 Environmental Management in Local Wisdom Perspective of Karampuang People, Sinjai District, South Sulawesi, Sainsmat J. Ilmiah IPA 6 154
[5] C Folke, R Biggs, A V Norström and B Reyers J 2016 Rockström, Social-Ecological Resilience, and Biosphere-Based Sustainability Science. Ecol. Soc. 21
[6] B C Chaffin, A S Garmestani, L H Gunderson, M Harm Benson, D G Angeler, C A Arnold, B Cosens, R Kundis Craig, J B Ruhl and C R Allen 2016 Transformative Environmental Governance. Annu. Rev. Env. Resour. 41
[7] M Tengö, E S Brondizio, T Elmqvist, P Malmer and M Spierenburg 2014 Connecting Diverse Knowledge Systems for Enhanced Ecosystem Governance: The Multiple Evidence Base Approach Ambio 43 579
[8] H J Gray 1984 The New Technologies: An Industrial Revolution J. Bus. Strat. 5 83
[9] R E Lucas 2018 What Was the Industrial Revolution? J. Hum. Cap. 12 182
[10] Encyclopedia of Sociology 2001 “Modernization Theory” Retrieved 1 Jul. 2019, from https://www.encyclopedia.com.
[11] P S Ramakrishnan 2001 Ethnobiology International Encyclopedia of the Social & Behavioral Sciences 4846
[12] H Abramovitch 2001 Sociology of Death and Dying International Encyclopedia of the Social & Behavioral Sciences 3267
[13] J M Feldman 2016 Technology, Power and Social Change: Comparing Three Marx-Inspired Views, Socialism and Democracy 30 28
[14] S A Cohen, T Duncan and M Thulemark 2013 Lifestyle Mobilities: The Crossroads of Travel, Leisure and Migration Mobilities 10 155
[15] C Mora 2014 Revisiting the Environmental and Socioeconomic Effects of Population Growth: A Fundamental But Fading Issue in Modern Scientific, Public, and Political Circles *Ecol. Soc.* **19** 38

[16] Food and Agriculture Organization of the United Nations (FAO). The State of Food Insecurity in The World. (FAO, Rome, Italy, 2010) [online] http://www.fao.org/docrep/013/i1683e/i1683e.pdf

[17] L Benton-Short, M Keeley and J. Rowland 2017 Green Infrastructure, Green Space, and Sustainable Urbanism: Geography’s Important Role *Urban Geogr.* **1**

[18] A M B Prawiro 2015 *Religion and the Local Tradition of Life Cycle Rituals in Kampung Naga, West Java. Al-Albab* **4**, 55

[19] E Maryani and A Yani 2015 Local Wisdom of Kampung Naga in Mitigating Disaster and its Potencies for Education Tourism Destination *ASEAN Journal on Hospitality and Tourism*. **14**

[20] A Yani and L Widaningsih 2015 *Local Wisdom of Traditional House in Earthquake Risk Mitigation (Comparison of Traditional House in Kampung Naga, West Java and Minka Gassho-Zukuri Architecture in Shirakawa Village, Gifu Perfecture, Japan)* (In 2015 International Conference on Innovation in Engineering and Vocational Education, Atlantis Press)

[21] S A Gagné, F Eigenbrod, D G Bert, G M Cunnington, L T Olson, A C Smith and L A Fahrig 2015 Simple Landscape Design Framework for Biodiversity Conservation *Landscape and Urban Plan*. **136** 13