

KERENTANAN MASYARAKAT DAERAH ALIRAN SUNGAI CITANDUY TERHADAP PERUBAHAN IKLIM DAN STRATEGI ADAPTASI BERBASIS EKOSISTEM HUTAN

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INTISARI

Perubahan iklim merupakan fenomena global. Fenomena ini berimplikasi pada faktor iklim, yakni pada perubahan suhu dan curah hujan. Kenaikan suhu dari tahun 1850-1899 ke 2001-2005 adalah $0,76 \pm 0,19^0$ C (IPCC, 2007). Musim penghujan cenderung mundur dari tata waktu dan berlangsung lebih singkat dengan intensitas yang lebih tinggi. Fenomena tersebut berdampak pada semua sektor kehidupan, sumberdaya air, kehutanan, pertanian dan sektor lainnya. Perubahan suhu dan curah hujan juga berdampak pada karakteristik hidrologi Daerah Aliran Sungai (DAS). Perubahan iklim akan mempengaruhi tingkat kerentanan masyarakat yang tersusun atas faktor paparan (*exposure*), faktor kepekaan (*sensitivity*) dan faktor kemampuan adaptasi (*adaptation capability*). Sehingga perlu diketahui tingkat kerentanan yang terjadi.

Pemetaan kerentanan masyarakat terhadap perubahan iklim menggunakan *Analytical Hierarchy Process* (AHP) dan *Geography Information System* (GIS). AHP digunakan untuk menentukan nilai prioritas atau bobot tiap indikator kerentanan. Responden dipilih secara *purposive* dan menggunakan kuisioner. Hasilnya menunjukkan bahwa unsur kemampuan adaptasi mempunyai bobot tertinggi sebesar 36,3 %, paparan sebesar 30,7 % dan kepekaan sebesar 30 %.

Kerentanan masyarakat di Hulu memiliki indeks sebesar 0,18345 dikategorikan rendah, wilayah tengah sebesar 0,2102 dikategorikan agak rendah dan wilayah hilir sebesar 0,3691 dikategorikan agak rendah. Perbedaan nilai kerentanan masyarakat dikarenakan nilai dan bobot faktor paparan, kepekaan dan kemampuan adaptasi masyarakat berbeda-beda di daerah hulu, tengah dan hilir DAS.

Strategi adaptasi berbasis ekosistem hutan dengan pengelolaan hutan berkelanjutan/*sustainable forest management* dan mengedepankan prinsip kelembagaan, sosial, ekonomi, teknologi dan sumberdaya manusia. Bentuk adaptasi berbasis ekosistem hutan yang dapat dilakukan di DAS Citanduy berupa: Konservasi ekosistem hutan dan proses alaminya, rehabilitasi lahan kritis serta penerapan skema dan teknologi untuk mengurangi emisi Gas Rumah Kaca (GRK) seperti *Reduce Impact Logging* (RIL) dan (*Reducing Emission from Deforestation and Forest Degradation Plus*) REDD+.

Kata Kunci: *Perubahan Iklim, AHP, Kerentanan, Strategi Adaptasi, Ekosistem Hutan*

COMMUNITIES VULNERABILITY TO CLIMATE CHANGE IN CITANDUY WATERSHED AND ADAPTATION STRATEGIES BASED ON FOREST ECOSYSTEM

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ABSTRACT

Climate change is a global phenomenon. It implicates to climate factors, those are the changes of temperature and rainfall level. The rise of temperature from 1850-1899 to 2001-2005 was $0,76 \pm 0,19^0$ C (IPCC, 2007). The rainy season tends to retreat from the time frame and shorter yet with higher intensity. Those implicates to communities life sectors, such as water resources, forestry, agriculture etc. it also affect to the hydrology characteristic of watershed. Climate change affects the community vulnerability through its factors, those are exposure, sensitivity and adaptation capability. The study aimed to measure the level of communities vulnerability.

Vulnerability mapping to climate change were determined using Analytical Hierarchy Process (AHP) and Geography Information System (GIS). AHP were used to determine priority score or weight of vulnerability indicators. Respondents chose by purposive and through questioner. Result shows that adaptation capability has highest score 36,3 %, exposure 30,7 % and sensitivity 30 %.

Communities vulnerability in upstream area was 0,18345 and classified as low, middle stream area 0,2102 classified as nearly low and downstream area 0,3691 and classified as nearly low. The differences of the scores due to the weight level of exposure, sensitivity and adaptation capability in Citanduy Watershed.

Adaptation strategies based on forest ecosystem can be arrange by the principles of sustainable forest management through the aspects of institutional, social, economy technology and human resources. Forms of adaptation strategies that can be applied in Citanduy Watershed are conservation of ecosystem and natural succession, rehabilitation of critically land and the application of schemes and technology to reduce greenhouse emission such as Reduce Impact Logging (RIL) and Reducing Emission from Deforestation and Forest Degradation Plus (REDD+).

Keywords: Climate Change, AHP, Vulnerability, Adaptation Strategies, Forest Ecosystem