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ABSTRACTS

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forests. In general, forests and sustainable forest management (SFM) seem to be poorly understood by everyone outside the forest sector. European Forest Week 2008 (EFW) was an attempt by intergovernmental bodies involved in forest policy in Europe to increase the visibility of the forest-based sector; to raise awareness of forests' contributions to mitigating climate change, providing freshwater, protecting the environment; and to increase understanding of SFM. Ultimately, this was supposed to lead to other policy sectors' (energy, climate, environment, etc.) engagement in a participatory dialogue on forest-related issues. Against this background I will explore why it is that forests, forestry, and forest policy are perceived as major communication challenges. I will take a closer look at the science-policy interface, intersectoral communication, and forest advocacy. I will partly found my exploration of the theme on the European/EU policy making arena and the position of forest policy. Based on the specific character of forest policy I will identify some key communication challenges.

Forestry communication model: case study in Slovakia. Marusakova, L., Sarvas, M., Vanco, M. (*National Forest Centre, Slovakia; marusakova@nlcsk.org; sarvas@nlcsk.or; gvanco@nlcsk.org*).

The paper deals with forestry communication and explains what role communicative processes play for positive perception of the forestry sector. The paper analyzes the specifications and layout of communication in forestry and identifies main actors and target groups involved in Slovakia. SWOT analysis was used to identify strengths, weaknesses, opportunities, and threats of communication in the forestry sector. The results of research on effectiveness of communication tools used by forestry bodies are presented in the paper. Forest-related environmental education (FREE) is introduced as an example of an effective way for informing the public about sustainable forest management and increasing awareness about the importance of forests for environment and society. The main obstacles and challenges in FREE are identified. Models of management of communication process and integrated marketing communication tools are introduced in the paper as a way to strengthen effective and proactive forest inter-sectoral cooperation and communication. The Communication Strategy of the National Forest Centre is used as an example of a systematic concept based on mixture of activities and cooperative actions in the field of forest research, public relations, education, and consultancy, which are carried out by the organization.

Recognition of stakeholders in management of a forest science organization. Miner, C.L., Barbour, J. R. (*U.S. Forest Service, USA; clminer@fs.fed.us; jbarbour@fs.fed.us*).

The Pacific Northwest Research Station is a subunit of the U.S. Department of Agriculture, Forest Service research program, with about 90 scientists. In 2009, the station reorganized to improve its responsiveness through flexibility and by becoming more efficient. The effort was based on strategic planning with input from stakeholders gathered in summer 2007. Stakeholders asked for the benefits of long-term research, with an outcome of development of knowledge and tools for immediate application to issues. The station developed foundational themes of ecological processes and function; land and watershed management; threat characterization and management; goods, services, and values; and forest resources monitoring and assessment. These themes are linked to short-term priorities that help direct the work of scientists. Since 2007, however, the nature of key issues and their interconnections have changed along with priorities. In 2010, given its new approach and organization, the station asks what defines its stakeholders, what constitutes success in their support of the station, and how is success described over time and across a dynamic social landscape? This presentation describes a framework used to address these questions and methods for measuring stakeholder support over time. The potential of this framework for adoption by other organizations is described.

Posters

The role of forestry scientists in the decision-making process. Nurrochmat, D.R., Darusman, D, Ekayani, M. (IPB/*Bogor Agricultural University, Indonesia; dnrochmat@yahoo.com; akecuina@cbn.net.id; metieka@yahoo.com*).

There has been a long debate about the roles of scientists in policy-making process. In differentiating with the other stakeholders, the role of scientists is to provide the possibilities, instead of deciding between the possibilities. It means that scientists expect to gather facts and provide predictions to current and proposed policies rather than to determine policies. In the forest policy-making arena, forestry scientists are seeking to play a positive role in policy-making and contribute to a better process and results of policy. In fact, however, forestry scientists are playing a minor role in a public discourse; for example, the contribution of scientists through their statements about forest fire in the global public media was only about 12% and in the Indonesian public media even less than 3%. Enhancing the role of forestry scientists is required because it is critically important in a functioning democracy and to achieve a better forest policy. The objectives of this paper are to understand the various views of scientists in defining forestry problems and to evaluate the role of forestry scientists to contribute in the policy-making process in Indonesia.

Collaboration between scientists and journalists in forest communication. Park, M.S. (*Seoul National University, Republic of Korea; mpark@snu.ac.kr*).

In the process of forest communication, stakeholders in forestry can cooperate with each other to achieve their goals. South Korea provides an example of collaboration between scientists and journalists. The Korean daily newspaper, *Hankyoreh,* designed a special series on nature conservation titled *Let's keep the places: Urgent appeals to conserve the ecosystem,* in 1991–1992 and in 2003. Journalists and scientists conducted field trips to survey environmental and social situations and published the series weekly, consisting of a report by the journalists and a column by the scientists. The series not only reported the destruction of the ecosystem but also criticized the inattentiveness of the government to the need to conserve and manage ecosystems. Actually, the seven reported places were incorporated into ecosystem protection zones. In this case, the scientists and journalists contributed to the decision-making on these areas by putting them at the center of the political system. The media's agenda was developed into a policy agenda. This phenomenon reflects the Habermasian theory of power, wherein the government translates civil society's communicative power into administrative power. It is a bottom-up process from the periphery to the center of the political system.

Best practices examples of forestry communications in Slovakia. Sarvaš, M., Marušáková, L., Vančo, M., Hrbáĺ, P. (*National Forest Centre, Slovakia; sarvas@nlcsk.org; marusakova@nlcsk.org; vanco@nlcsk.org; hrbalvnlcsk.org*).

The poster presents successful projects dealing with communication in forestry sector in Slovakia. National Forestry Days presented in the poster are the greatest event prepared by a coalition of forestry institutions for broad public. Mutual projects

The Role of Forestry Scientists in Policy-Making Process in Indonesia

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Abstract

It has been a long debate towards the roles of scientists in policy-making process. In differentiating with the other stakeholders, the role of the scientists is providing the possibilities instead of deciding between the possibilities. It means that the scientists expect to gather facts and provide predictions to current and proposed policies rather than to determine policies. In the forest policy making arena, forestry scientists are seeking to play a positive role in policy-making and contribute for a better process and results of policy. In fact, however, forestry scientists are playing a minor role in a public discourse, e.g. the contribution of scientists through their statements about forest fire in the global public media was only about 12% and in the Indonesian public media even less than 3%. Enhancing role of the forestry scientists is required because it is critically important in a functioning democracy and a better forest policy. The objectives of this paper are to understand the various views of the scientists in defining forestry problems and to evaluate the role of forestry scientists to contribute in the policy-making process in Indonesia.

Keywords: forestry scientists, forest fire, Indonesia, media, policy-making process

1. Introduction

Scientists are seeking to play a positive role in policy and politics and contribute to the sustainability of scientific enterprise. Scientists are concerned on how best science can contribute to policy making and healthy democracy (Pielke 2006). The role of the scientist is not to decide between the possibilities but to determine what the possibilities are (May 1990 in Pielke 2006). Furthermore Pielke (2006) indicate four types of scientist role:

a. Pure Scientist, with no interest in decision making process and simply share some fundamental information.
b. Science Arbiter, as a resource for decision making, standing ready to answer factual questions that the decision maker thinks are relevant.
c. Issue Advocate, try to convince the decision maker to take particular decision, telling the decision maker what he or she ought to prefer.
d. Honest Broker of Policy Alternative, provides basic information on each choices, makes an effort to expand (or at least to clarify) the scope of choices, and let the decision maker face the challenge of reducing the scope of choices based on his or her preferences and values. Honest Broker of Policy Alternative is often best achieved through a collection of experts working together with a range of views, experiences, and knowledge.

All those roles are critically important and necessary in a functioning democracy, and scientists, similar to other member of society, have to choose. Honest Broker would be a powerful role to facilitate the creation of new and innovative policy alternatives.

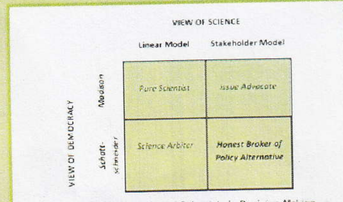

Figure 1: The Role Matrix of Scientists in Decision Making

According to the role matrix of scientists in decision making (**Figure 1**), the most suited role for the scientists is to be an Honest Broker of Policy Alternative (referring stakeholder model and "schatschneider theory of democracy"), which engages in decision making by clarifying and seeking to expand the scope of choice available to decision makers. Therefore, the objective of this paper is to evaluate the role of forestry scientists in policy making process in Indonesia, especially related to forest fire issues.

2. Methods

The role of scientists in policy-making process is determined by three approaches.
1) Relative share of scientists in media discourse
2) Communication-Effectiveness index of scientists
3) Stakeholder's perception towards the role of scientists

2.1 Relative share of scientists in media discourse

Discourse in the news media is one of the most important ways to influence policy making process. Therefore, measuring the role of certain actor, e.g. scientists, in policy making process could be done among others by understanding the relative share of scientists in media discourse as follows.

$$\text{Relative share in media} = \frac{\text{Frequency of scientist's statement cited in media towards certain issue}}{\text{Frequency of all statement in media toward certain issue}}$$

Usually the relative share or contribution is stated in percent. The higher the relative share of scientists in media, the bigger their influence to the policy making process.

Two reputable national media (newspapers) that have been decided to be included in this study are.
1) Kompas
2) Republika

Kompas is the most widely read national newspaper in Indonesia, while Republika is one of the biggest national media that has concerns for environmental issues.

2.2 Communication-Effectiveness Index of Scientists

The role of speaking actors, e.g. scientists, in media to influence public opinion could be evaluated by calculating an effectiveness index. Effectiveness index measures how far the statements of a speaking actor can drive public opinion. In this study, the effectiveness index is calculated by comparing the level of frequency of speaking actor's statements cited in media and the level of influence of speaking actor's statements in driving public opinion.

$$\text{Effectiveness index} = \frac{\text{Average score of frequency of speaking actor's statement cited in media}}{\text{Average score of speaking actor's statement in driving public opinion}}$$

A speaking actor can effectively communicate with the public if he/she has an effectiveness index of 1.00 or higher. If the effectiveness index is less than 1.00, then this means that a speaking actor talks more but less influential in driving public opinion.

2.3 Stakeholder perception towards the role of scientists

Key person interviews were conducted to evaluate stakeholder perception towards the role of scientists. The selection of institutions and key persons in which and with whom the interview were conducted, was based on the relevance to the research topic and the principle of the representativeness. At the international level, several experts from Centre for International Forestry Research (CIFOR), ASEAN-Korea Cooperation (AKECOP), ASEAN Secretariat, and SEAMEO-BIOTROP were interviewed, while at the national level interviews were conducted with policy makers at the Ministry of Forestry (MoF), scientists at the Bogor Agricultural University (IPB), NGO (LATIN) activists, and forest enterprises (KBT, KL, and PK). At the provincial level, interviews were conducted in seven provinces: Riau, East Kalimantan, West Java, North Sulawesi, Bali, Bangka Belitung, and Special Region of Yogyakarta

3. Result and Discussion

3.1 The Minor Role of Scientists in Colouring News Media

According to the evaluation of relative share of speaking actors in media, it shows that non scientists are very dominant as speaking actors in news media. The contribution of scientists through statements on forest fire in the national news media comprised of only less than 3% respectively (**Figure 2**).

Looking at the distribution of the non scientist' speaking actors in the news media, the administrative official (administration) is one of the most important resource persons for news media. Referring to forest fire issue in national news media, it seems that resource persons from non-forest administration act more frequently as speaking actors on forest fire issues rather than those from forest administration (**Table 1**).

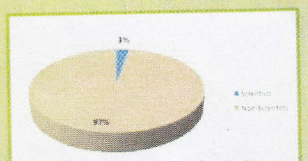

Figure 2: The Contribution of Scientists to Indonesian News Media

Measuring the role of scientists in policy making process could be approached by understanding their contribution (relative share) in the news media because news media, especially newspapers, is the most effective media communication that influences public opinion on forestry issues based on the perception of respondents in international, national and local organizations. Following news papers are leaflets and publications issued by NGOs are also considered quite effective in influencing public opinion on forestry issues at international and local levels. Publications issued by government and other communication instruments such as TV and radio are considered less effective in influencing public opinion related to international and local forestry issues. For national forestry issues, TV is considered quiet effective in influencing public opinion than publications issued by NGO or government (**Table 2**).

Table 1: Distribution of the Non Scientist's Speaking Actors in Indonesian News Media

Non-Scientists' Speaking Actors	Freq	%
Politicians	17	1.20
a. Politician government	13	0.92
b. Politician non government	4	0.28
Administration	**527**	**37.35**
a. Forest administration	184	13.04
b. Non forest administration	343	24.31
Media	**446**	**31.61**
Organization	**55**	**3.90**
a. Forest organization	18	1.28
b. Non forest organization	37	2.62
Others	**366**	**25.94**
Total	1,411	100.00

Table 2: The Most Influencing Communication Media in Driving Public Opinions Concerning Forestry Issues

Kinds of Media	International		National		Local	
	Score	Rank	Score	Rank	Score	Rank
News media	3.50	1.0	3.33	1.0	3.54	1.0
Government printed publications	2.25	3.5	1.67	4.0	2.15	3.5
NGO's printed publications	2.50	2.0	2.17	3.0	2.17	2.0
Others	2.25	3.5	2.50	2.0	2.15	3.5

Therefore, in order for forestry programs to gain wide supports from the community, decision makers must consider the option of effective communication instruments. Maintaining good relationships and improving communication with newspaper journalists are some ways that can help disseminate information on forestry programs and the most effective way of directing public opinion related to forestry issues. The communication of forestry issues through TV media is quite effective in influencing public opinion if the issues raised are at national scale. Meanwhile, at local and international scales, cooperation with NGOs who voiced forestry issues is an alternative way of communication that can well influence public opinion.

3.2 The Effectiveness of Scientists' Communication

Although at national level speaking actors discussing forestry issues in the media are dominated by government agencies, but the majority of respondents believe that national public opinion concerning forestry issues are more influenced by NGOs rather than governments' opinions. Therefore, the degree of influence of speaking actors in driving public opinion is not only determined by the frequency of occurrence of speaking actors in the media, but also depends on the effectiveness of communication of each speaking actor (**Table 3**).

From **Table 3**, it is known that at international scale, NGO is the most effective in conducting communication in the media. Although in terms of frequency of media exposure, businessmen do not often appear as speaking actors, but they can establish effective communications in the media at national scale. Meanwhile, in a local scope, scientists are the most effective speaking actors in building communication in media. Comparison between the frequency of occurrence of speaking actor in mass media and their influence in shaping public opinion on related forestry issues is presented in **Figure 3**.

Table 3: The Effectiveness Index of Communication among Speaking Actors

Speaking Actors	The Effectiveness Index of Communication		
	International	National	Local
Government officer	0.92	0.92	0.92
Scientist	1.08	1.07	1.08
Politician	0.72	1.10	0.94
Community leader	1.08	1.00	1.04
NGO	1.08	1.10	1.04
Businessman	1.03	2.26	0.98
Others	1.06	1.23	1.00

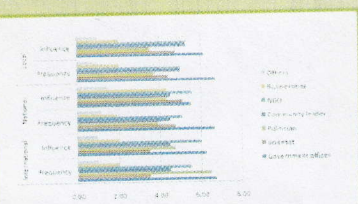

Figure 3: Comparison of Speaking Actor's Frequency of Occurrence in the Media and Level of Influence in Shaping Public Opinion

3.3 Stakeholder Perception: the Role of Scientists in Setting Policy Agenda

Although news media is the source of information that mostly shapes public opinion on forestry issues, however, it is not the main reference for determining policy agenda setting. The majority of respondents of international organizations state that policy agenda setting is mostly affected by scientists who are requested by the concerned institutions to provide advisories in response to certain issues. Meanwhile, respondents at national and local institutions tend to argue that internal reports are the main reference in determining the policy agenda setting in their institutions, followed by input from a scientist. Based on respondents' perception, mass media is the third referral sources after internal report and scientist's input in determining policy agenda setting (**Table 4**).

Table 4: The Most Influencing Information to Decision Making Process

Speaking Actors	International		National		Local	
	Score	Rank	Score	Rank	Score	Rank
Internal report	[illegible]	2.0	3.80	1.0	[illegible]	1.0
Scientific advisory	5.25	1.0	4.25	2.0	4.55	2.0
Scientific media (journals)	3.50	4.0	2.60	3.0	2.65	5.0
News media (newspaper/magazine)	4.25	3.0	3.67	3.0	[illegible]	3.0
Information from society	2.75	5.0	1.42	4.0	1.94	4.0
Others	1.00	6.0	1.50	5.0	1.21	6.0

4. Conclusion and Policy Recommendation

The roles of scientists in policy making process concerning forestry, especially forest fire issue in Indonesia are generally weak. Referring to the number of statements found in national news media, the scientists only contribute less than 3% of statements on forest fires issues. This confirms the domination of non scientists speaking actors particularly "administration" in the forestry discourses of Indonesian media. Although "administration" gave more statements in the news media than others, however, in term of communication effectiveness, the statement of "administration" is less effective than scientists. The communication effectiveness of scientists in Indonesia is generally better than "administration" and politician, but less effective than NGO and Businessmen.

Although the role of scientists to influence policy making process through media is relatively low, but the role of a group of scientist or selected scientists through their direct advices to decision maker is one of the most important consideration in policy making besides the "internal reports".

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*) The substance of this poster is partly taken from the paper of Darusman D, Nurrochmat DR, Sundawati L and IZ Siregar (2009) Policy Evaluation of CDM and REDD Schemes: Economic and Social Considerations and some parts of the draft of Ph.D Thesis of Meti Ekayani at the Chair of Forest Policy and Nature Conservation University of Goettingen (on-going).

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