

Regional Autonomy Application and Environmental Regulations Implementation for Aggregate Quarrying in Gowa District, South Sulawesi

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Introduction

The environment is continuously undergoing changes as a result of anthropogenic and natural interventions. However, the vast majority of environmental changes and modifications have been linked to disturbances from human-induced activities. Through their actions, people modify the natural environment; the altered environment, in turn, impacts on their lives, either positively or negatively. Environmental modification is commonly associated with economic developments, which refer to the better utilization of natural resources leading to improvements in income and quality of life for the general public. It is thus a broader concept than that of higher income or economic growth.

The pattern of development should be based on sustainability principles, which is possible only when environmental conditions, both physical and social, are respected and balanced. Sustainable development may be defined as the improvement of quality of life without exceeding the carrying capacity of the supporting ecosystem. Sustainable development can also be thought of as a process requiring

simultaneous human effort in four dimensions: economic, social, environmental and technological. Simply, sustainable development is environmental care married to development.

In order to achieve sustainability, environment and development activities should be coordinated through environmental management efforts, which are a set of related activities carried out to achieve desired objectives. Environmental management requires an appreciation of the ends that are desired, agreement on the means to use in reaching the ends, and a strategy or plan to guide the use of means. In addition to these, there is another essential component: the implementation.

In environmental management, it is often a challenge to move from normative planning to operational planning. An often-heard criticism is that the world is littered with good intention, policies and plans, but short on follow up action or implementation. Based on this view, this paper is focused on the implementation of environmental regulations for aggregate quarrying in Gowa District which mainly hindered by factors relate to the application of regional autonomy in the district.

Implementation is the process of putting policy into place; this involves much more than just acquiring the necessary resources and designing appropriate activities and time schedules within which to attain the project objectives. It involves understanding the setting, the ways in which people and organizations do or should relate to one another, the tasks that need to be undertaken, the degree of flexibility in project design, and the ways that participants learn from experience and make appropriate adjustments.

Implementation analysis

Local sustainability index

Aggregate quarrying in South Sulawesi Province is pervasive. Traditionally located within river channels and flood plains, the activity degrades water quality, causes bank erosion, siltation and destroys vegetative and aquatic life. This is especially the case in aggregate quarrying in Gowa District where shows an increasing trend lately. The increasing demands for aggregate materials are linked, in particular, to the increasing needs of urban and industrial state developments for industrial raw materials and for construction materials. The increase has caused serious environmental degradation and inevitably, socio-economic problems in the community. Therefore, this activity needs to be managed in a sustainable manner through the implementation of effective environmental regulations that protect the environment.

There are many forms of regulation, all of which can play a useful role. These include legislation, administrative regulations, policy statements, contractual arrangements, and company policies and regulations. Quarrying in Gowa District is managed based on twenty-seven government policies and regulations, which are intended to com-

prehensively manage and to ensure the sustainability of the activity. However, implementation of environmental regulations in Gowa District is very imperfect, which is hindered by factors connecting to the application of regional autonomy (Nur, 2000).

In order to assess implementation of environmental regulations for aggregate quarrying in Gowa District, the analyzed factor is implementation outcomes, that is the changes in environmental degradation or resource use after an environmental regulation is implemented. Implementation outcomes is analyzed using the local sustainability development index developed by Joanna Becker, since the ultimate purpose of any environmental regulation implementation is to achieve a sustainable pattern of development and resource utilization.

The index can be used to review the extent of progress towards sustainable development at a local level. The index can be generally applied to any land use application, and it addresses social, economic, and environmental factors (See Table 1).

An assessment of the degree of sustainability of aggregate quarrying in Gowa District is shown in the Table 2.

According to the table, the majority of aggregate quarrying attributes (70.8 %) are rated low in terms of sustainability, 25 % are rated as moderately sustainable, and only 4.2% (one attribute — sustained return) is considered highly sustainable. Attributes rated low in terms of sustainability need to be actively addressed by environmental regulations implementers. They are in the areas of education, community involvement, maximizing returns, and health. Attributes rated as moderately sustainable, such as resource allocation, do not need active initiatives from implementers. The classification of an attribute as of low, medium, or high sustainability is a direct reflection of the amount of attention that companies and government agencies have devoted to the implementation of regulations relevant to that attribute. The assessment result implies that implementation output, that is regulations used in the implementation process, can not be transformed to the desired implementation outcomes.

COMPONENTS	HIGH	MEDIUM	LOW
Education	<ul style="list-style-type: none"> • Equal job opportunities for women • Regular social/environmental training • SD demonstrated and promoted • Encourages indigenous knowledge and culture 	<ul style="list-style-type: none"> • Same job opportunities/job training for women • Some social and environmental training • Some SD practices and learning but not disseminated to community • Tolerates indigenous knowledge and culture 	<ul style="list-style-type: none"> • No job opportunities/job training for women • No or sporadic social/environmental training • No SD practices
Community Involvement	<ul style="list-style-type: none"> • Community represented in all decision making involving the community • All segments of community provided job opportunities • Resources managed for the benefit of local and global community 	<ul style="list-style-type: none"> • Community represented in > 50% of local decision making • Only segments of community provided job opportunities (e.g. men, young people) 	<ul style="list-style-type: none"> • Community not involved in any local decision making • Majority of job opportunities external to communities • Unwanted impacts outweigh benefits of resource management
Resources Allocation	<ul style="list-style-type: none"> • All resources rights and obligations are clearly allocated with community and national control • All local parties provided at least subsistence resources • Security of tenure (ownership papers) 	<ul style="list-style-type: none"> • Some resource rights clearly allocated with no obligations specified. National control only. • Resources ownership benefits primarily one section of the community • Tenure through use of land 	<ul style="list-style-type: none"> • No resources allocated and no obligations specified • No external control • Resource ownership benefits only non-local parties
Suitable Land Use	<ul style="list-style-type: none"> • Sustainable land use practices • Full tree cover on slopes/riparian areas • No observable soil loss and/or water pollution • Formal conservation of native habitats 	<ul style="list-style-type: none"> • Medium term land use practices (10-30 years) • 50% tree cover on slopes or riparian areas • Occasional soil and water impacts • Partial conservation of habitats/species 	<ul style="list-style-type: none"> • Short term agricultural practices (< 10 years) • No tree cover on slopes or riparian areas • Chronic soil and/or water impacts • Loss of native habitats
Sustainable Returns	<ul style="list-style-type: none"> • Resource use not exceeding regeneration or replacement • Return > Inputs • Diversity of returns (> 4 income producers) 	<ul style="list-style-type: none"> • Resources use that temporarily exceed regeneration or replacement • Returns equal to inputs • Moderate diversity of returns (2-4 producers) 	<ul style="list-style-type: none"> • Continual use of resources beyond regeneration or replacement • Increasing inputs to returns • Reliance on single product
Maximisation of Returns	<ul style="list-style-type: none"> • Maximisation of returns (Value added) • Minimisation of input costs • Minimum waste generated 	<ul style="list-style-type: none"> • Moderate returns for resources used • Some impacts from inputs • Some waste generated 	<ul style="list-style-type: none"> • Minimum or no returns on resources used • Social/environmental costs from inputs • Waste exceeds product utility and returns
Social/Environmental Health	<ul style="list-style-type: none"> • Human health protected • No harmful modifications to the environment 	<ul style="list-style-type: none"> • Minimisation of harmful additives • Remediation of harmful practices 	<ul style="list-style-type: none"> • Continued reliance on harmful inputs • No remediation, continued destruction
Operational Control	<ul style="list-style-type: none"> • Operation self-supported • Local management with several key operators 	<ul style="list-style-type: none"> • Some reliance on external support • Temporary external management with delegation 	<ul style="list-style-type: none"> • Fully dependent on outside support • Dependent on one person or outside management

Table 2. Sustainability Degree of Aggregate Quarrying in Jeneberang Watershed.

COMPO- NENT	ATTRIBUTES	HIGH	MEDIUM	LOW	REMARKS
Education	• Training/job opportunities for women			4	Limited job opportunities/job training for women
	• Social/environmental Responsibility			4	No or sporadic social/ environmental training
	• Sustainable development (SD) practices			4	Traditional quarrying method are banned
	• Indigenous knowledge			4	No encouragement to indigenous knowledge and culture
Community Involvement	• Community local decision making			4	Community not involved in most local decision making
	• Job opportunities within community			4	Majority of job opportunities external to communities and only to men
	• Community returns			4	Unwanted impacts outweigh benefits of resource management
Resources Allocation	• Clear allocation of rights and obligations		4		Some resource rights clearly allocated with clear obligations specified. Mostly national control.
	• Access to resources		4		Resources ownership benefits primarily one section of the community
	• Security of land tenure		4		Security of tenure (ownership papers), but with some overlapping.
Suitable Land Use	• Sustainable land use			4	Short term quarrying practices (< 10 years).
	• Amount of tree cover		4		About 50% tree cover on slopes or riparian areas.
	• Lack of impact on soil and/or water			4	Chronic soil and/or water impacts.
	• Conservation of native habitats			4	No conservation to native habitats which may lead to the habitat lost.
Sustainable Returns	• Sustainable resource use			4	Continual use of resources beyond regeneration or replacement.
	• Sustained returns	4			Return > Inputs.
	• Diversity of products		4		Moderate diversity of returns (2-4 products)
Maximising Returns	• Maximising returns			4	Minimum or no returns on resources used
	• Minimising input costs			4	Social/environmental costs from inputs
	• Minimising waste			4	Waste exceeds product utility and returns
Health	• Human health			4	Continued reliance on harmful inputs
	• Environmental health			4	No remediation, continued destruction
Operational Security	• Security of the operation		4		Mostly dependent on outside support
	• Control of the operation			4	Dependent on outside management

Factors affecting implementation process

The implementation of any environmental regulation will be affected by certain factors. These factors have to be considered if success in implementing the regulations is to be assured. In implementing environmental regulations for aggregate quarrying in Gowa District the factors mainly relate to regional autonomy application as depicted in Figure 1. Situmorang (2000) revealed that regional autonomy in Indonesia has not always been advantageous to local government, since the autonomy policy is interpreted as merely the devolution of power to district government, which will lead to uncontrolled utilization of natural resources.

In 1995, the Indonesian Government issued Decree Number 8 regarding the devolution of authority from the national government to twenty-six districts of government. Of the districts, Gowa District has been chosen as the first district in South Sulawesi in which to apply the autonomy concept. The decree dictates that the authority for a number of regulations will be transferred from the national government to the district government, including the management of aggregate quarrying.

Having autonomous status is not simple since autonomy generally means self-regulation and self-financing. Autonomy is the decentralization of authority for planning, management, and the raising and allocation of resources from the central government to field units of government agencies. According to this definition, the district must generate and optimize sources of income for development to continue, and therefore, the government must foster any potential sectors to increase revenue.

Political Factors

Political factor which determine the policies that will be implemented, greatly influence the success or failure of the implementation and are almost always at play in increasing the intricacies of implementation. Recently, the main political issue in Gowa District has been the application of regional autonomy. The concept of regional autonomy has been a major part of the government’s mindset in formulating policies, and the implementation of environmental management regulations is perceived as a minor subset within this sphere. The implementation is treated as only an administrative requirement without necessitating a strong commitment to its successful implementation.

Figure 1. Framework analysis of contributing factors to the implementation of environmental regulations in Gowa District.

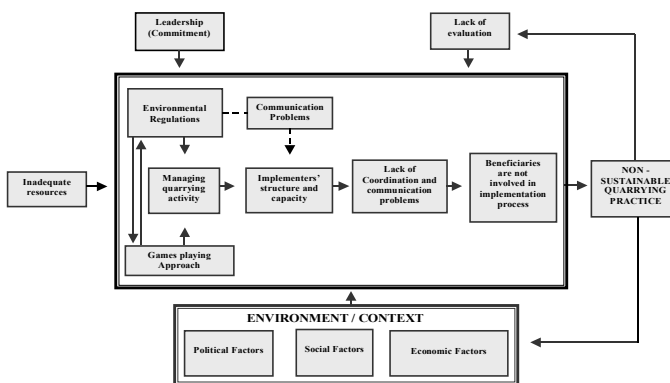
The reason given for this by government officials is that proper implementation of the regulations will ultimately influence the amount of collected revenue. Long-term effects are overlooked as a consequence of pressure to maximize short-term gains.

In addition, the implementation of environmental regulations for aggregate quarrying in Gowa District is handled with a game-playing approach. Such an approach is characterized by the sort of manipulation, often of a political nature, as is used by those individuals and groups who either want or do not want a particular plan to be implemented successfully. Lacking commitment to implement regulations, the head of government instructs the Mining Agency to further increase revenues from the quarrying activity. Financial responsibility is at the core of the concept of autonomy. Therefore, the focus of district government, by and large, has not dealt with the issues of sustainable resource utilization. Overall, there has been a much greater emphasis on revenue generation from the activity.

Economic factors

The average economic growth of Gowa District from 1993 to 1998 was 7.10 % annually, with aggregate quarrying experiencing the highest growth rate of any sector. The percentage of its contribution to total regional revenue increased from 37.5 % in 1995 to 74% in 1999 (see Figure 2). In order to strengthen the economic structure of the district and to create employment opportunities over the next five years, the volume of production will be increased without a real effort to implement environmental regulations favourably. A key assumption often made during the initial stages of growth is that development requires a heavy investment in productive activities. As a result, government concludes that the management of problems associated with quarrying activities has to be postponed for a certain period of time.

To increase production from aggregate quarrying, in most cases, the Mining Agency issues aggregate quarrying licenses without consulting the local community, for example related to land ownership of the quarried lands. The status of land ownership has been the main cause of conflict among local residents, companies, and government agencies. Proper implementation of environmental regulations requires that land ownership be clearly defined before a quarrying license is issued, as it relates to permission to undertake an activity in a possessed land and the award of land ownership compensation fees. The people do not allow companies to quarry on what they claimed to be their property, while



the companies claim their right to do so based on their possession of quarrying licenses approved by the district government.

In addition, the amount of income that landowners receive as a result of quarrying is minimal compared to that which companies receive. Ambiguity in land ownership and inequality in income distribution influence how environmental regulations are implemented, since implementation is affected by the extent to which communities participate.

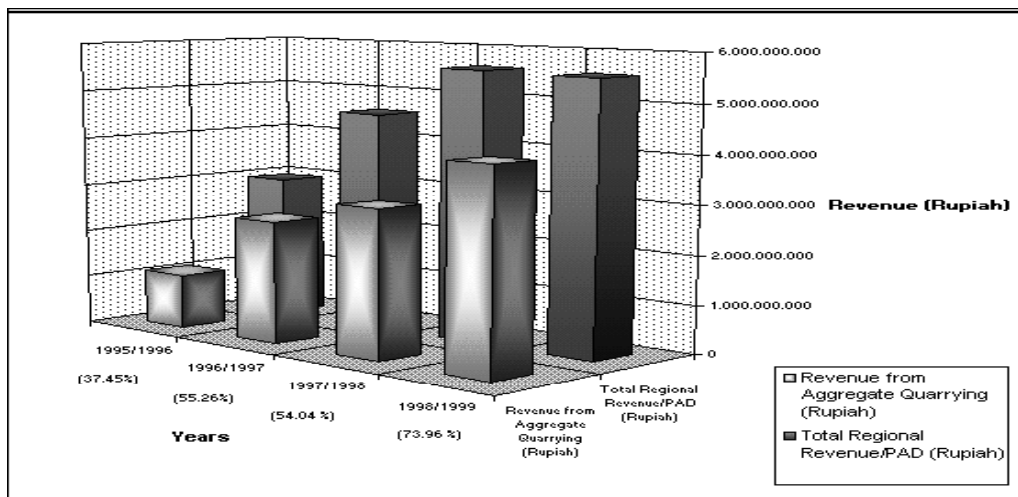
Inadequate resources

The application of regional autonomy to the Gowa District means that the local government has a wider-reaching authority and, therefore, must take greater responsibility and have more expertise in order to effectively manage development activities. However, considering that the Indo-

Beneficiaries

Within the current management process, although the local community stands to be the main beneficiary, they are not involved in the implementation processes. Often general assumptions are made about the benefits of the activity without clearly identifying those for whom the activity has been designed. This is particularly true for top-down projects.

An accumulation of problems related to quarrying activities in Gowa District has created symptoms of apathy in the local community with respect to environmental protection, because the people have felt powerless. The passive approach or ignorance of the local community also influences implementation; they do not put enough pressure on the implementers, where in many cases the core problem of implementation related to the absence of pressure from the



Source: Revenue Agency of Gowa District (1999).
 Figure 2. Contribution of aggregate quarrying to Gowa District's total regional revenue. Social Factors

nesian government system had been so centralistic and bureaucratic during the thirty-two years of the New-order era, it is reasonable to assume that the transfer of such authority has had drastic effects. In an authoritarian tradition of bureaucracy supported a top-down, chain-of-command approach in which agency heads made decisions on all but the smallest details, lower level officials responded by taking little initiative and by waiting for orders from their superiors. Lack of expertise to handle administrative and managerial job competently at district levels will prevail in such conditions.

With regard to staff and facilities, the Mining Agency of only has three staff members responsible for inspecting the implementation of the regulations; these individuals also have the responsibility to handle taxation jobs in the field. The lack of essential equipment is another problem which hinder policy implementation in the district.

beneficiaries to exert their demands on the system. Empowerment of the beneficiaries is therefore vital to overcoming problems in the implementation process.

Inter-organizational coordination

Mining agency is expected to implement regulations by establishing a system of coordination with other agencies as well as with companies and communities. However, each agency wants to implement the regulations based on its organization's own interests and want to have control over the other agencies; there is no coordination between agencies with the result that tasks are unnecessarily duplicated or critical stages in implementation are forgotten. The priorities of agencies are different, and bureaucrats do not like to coordinate their actions with their counterparts in other agencies. Effective policy implementation is blocked when the structure of government is fragmented. This is because the more coordination that is necessary to implement a

policy, the lower its chances of succeeding.

In addition, the agencies typically perceive their organizations as closed systems. Within this traditional framework, addressing the problem of institutional weakness would entail tinkering exclusively with the internal structures and components of individual institutional bodies or organizations. Focusing exclusively on the internal elements of an organization misses the bigger picture.

Communication factors

There is a lack of clarity about environmental protection and reclamation as specified by the regulations. If policies are to be implemented as those who enacted them intended, implementation directives must not only be received, but must also be clear. Often the instructions transmitted to implementers are vague and do not specify when or how a program is to be carried out. Lack of clarity provides implementers with leeway to give their own meaning to policies, meaning that sometimes it is contrary to the original intention of the policy. Obviously, confusion by the implementers about what to do increases the chance that they will not implement a policy as those who passed it intended.

Another thing that has impeded the implementation of the regulations is the fact that the owners of quarrying licenses are people in the sub-district who hand over their right to quarry to these outside companies. This happens because the operational stage of quarrying requires a lot of capital, which the local people do not have. Related to compliance, landowners relinquishing their right to quarry to other companies increases the possibility that regulations will be implemented unfavorably. This practice creates a communication barrier between Mining Agency staff and company representatives during inspections; the company's representatives may have never seen the regulations as they are kept by the license owners.

Lack of evaluation

The evaluation of implementation in aggregate quarrying is based on quarterly and annual reports made by quarrying companies. However, these reports are also made on the companies' behalf by Mining Agency staff. The staff puts together the report by copying from other reports submitted several years earlier. Clearly there cannot be any real evaluation, if the evaluator itself produces the reports. A mid-level agency staff person reported that this happens because no matter how well or how poorly the Regulations are implemented, the companies' business will not be affected, and the district government will never take any action if the companies' activities do not comply with the regulations. In such a situation, evaluation is merely an administrative formality to show that environmental regulations have been implemented in the district.

Managing implementation process

Implementation is not merely an administrative chore which, once policies have been legislated and agencies mandated with administrative authority, will happen of and by itself. This reflects that a strategy to manage the transformation of implementation outputs to desired implementation outcomes is needed through a simple framework to guide the transformation process. Previously, there has been no such framework available for practitioners in implementing policies, programs or projects. The proposed approach to this limitation is Integrated Implementation, defined as an approach that seeks out a strategy for managing complexity in the implementation process by adopting a strategic and adaptive approaches to all key variables of implementation process (Nur, 2000).

Characteristics of integrated implementation

The main characteristic of an integrated approach in implementation is the use of an inclusive approach that takes into account the scope and scale of environmental and human issues and the interconnections between them. Strategic and adaptive processes are used to identify key components and variables that need attention. Strategic means that the implementation is a proposed sequence of mutually reinforcing actions directed toward an interrelated set of objectives. This indicates not only what we want and the means to achieve it, but also how we intend to proceed step by step to get there, and what we will do if things change. Adaptive means that the approach must provide for interaction with stakeholders in the search for relevant information, shared values, consensus and, ultimately, proposed action that is both feasible and acceptable. The integrated framework addresses the need for adaptive and strategic approaches to implementation by ensuring adaptation, adjustment and possible improvements. These are continual processes that ensure that, as time goes by, the whole implementation process will be improved and they will provide chances for community at large to make controls during the implementation. Implementation is not a single cycle process, rather it is an iterative process of continuous reinforcing action amongst the variables of the implementation

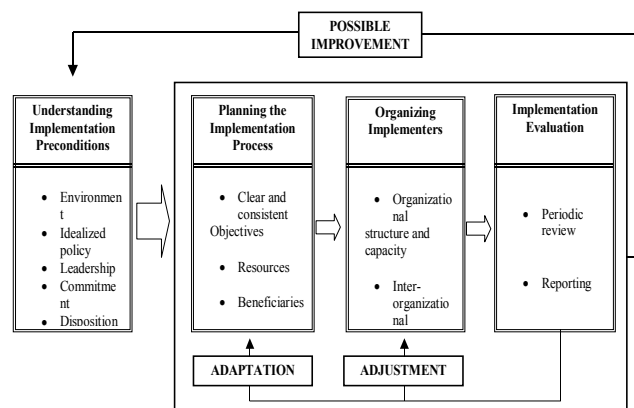


Figure 3. Conceptual framework for integrated implementation

Components of the framework

Understanding implementation preconditions

Regional autonomy provides district government opportunity to compose idealized policies. The responsibility of a local government is to translate national policy into realistic regulations, programs or projects to be implemented in a way that fits local conditions, whether leaders' commitment and disposition will influence the setting in which the UKL and UPL is implemented — socially, economically and, most importantly, politically. Due to their intricate nature, it is desirable that the variables of environment, idealized policy, leadership, disposition, and commitment be properly understood in the implementation process because their significant influences in determining whether an implementation process succeeds or fails. If these variables are understood, then the subsequent implementation process of environmental regulations can be expected to succeed.

The variables of the implementation precondition component are too complex to be managed, and therefore strong public control will be valuable. If there is no such public control, understanding this component will, at least, provide a clearer understanding of the bigger picture in which a policy is to be implemented. This will allow for realistic expectations to be formed regarding the outcomes of an implemented policy. Another advantage of defining this component is that it may lead to delaying the implementation of a policy until there have been substantial efforts to improve the variables of the component to guarantee that the next implementation stage will proceed as expected, or that improvements will be made during the implementation process.

Planning the implementation

This stage separates planning for implementation from general planning in environmental management process. It is important to note that the current approach to environmental management typically includes formatting the implementation plan in the planning process. In my opinion, for implementation to succeed, formulating the plan must be separated from the general planning process. The considerable complexity of planning sometimes makes it difficult to distinguish implementation problems from other weaknesses in the overall design. Therefore establishing a clear border between them will be worthwhile.

Under this component, resources, beneficiaries, and clearness and consistency of implementation objectives are defined. Resources variable is affected by the variables of commitment and disposition from the first component and with organizational capacity from the last component. Defining the amount of resources to be allocated in an implementation process in many cases depends on the

implementer leaders' commitment and disposition. However, even if the leader wants to allocate enough resources to the implementation process, the organizational structure and the capacity of agencies may not support it. Again, the intricacy of defining resources in the implementation plan, and the importance of variables in the first component, becomes clear. Nevertheless, it is also worth noting that placing the variables within an the integrated framework will help to define the relationship between the variables and thus, can lead to the formulation of a more realistic implementation plan by considering the availability of resources for the implementation process.

Defining the beneficiaries of an activity is key to achieving a sustainable pattern of resource utilization. Many reasons can be given as to the importance of including the community and instilling in them a strong sense of involvement in the implementation process. First, issues affecting rural community sustainability are complex; this fact, combined with the uniqueness of individual communities and individuals within communities, substantiates the need for a strong public involvement. Secondly, the content of regulations is determined by those individuals who have most to gain or loose in development activity; therefore, the more adequate the information provided by the stakeholder and end user, the more effective will be the process of formulating the implementation plan. Third, to be effective, sustainable development must be based on an integrated approach; there is a need therefore to approach development from a multi-interest perspective involving outside as well as local knowledge and expertise.

Community involvement is a key issue in policy implementation. It relates to both technical aspect and process of implementation. With respect to process, community involvement is central to the state-society realignment associated with democratization and good governance, and policy implementers need to work out action strategies in collaboration with those who either have a direct stake in the policy outcomes or who play essential roles in the implementation process.

The last variable in this component is clear and consistent objectives. Clearness and consistency of objectives are a must for achieving desired implementation objectives. The objectives offer guidance to implementers in implementing a policy. Therefore, general policy objectives need to be articulated as specific goals in order to prevent implementers from misunderstanding the objectives and to suggest ways for the goals to be achieved clearly and consistently.

Organizing Implementers

Organizing implementers is an indispensable component of an integrated implementation process. This component includes two variables: organizational structure and capacity, and inter-organizational relationships and coordination. The first variable refers to internal aspects of an organization and the second refers to external aspects.

These two variables ensure that the framework does not treat organizations simply as closed systems but, where appropriate, also as open systems.

This flexibility is central here since there is no best way of structuring implementer organizations. Therefore, it is important to adjust an organization structure to suit the environment. Implementing a policy does not always require a new administrative structure, but the importance of a simplified administrative structure for the implementation plan has been demonstrated in numerous studies. In particular, implementation should not require the creation of additional layers of administration; adjustments may need to be made, however, to existing administrative structures in order to accommodate ongoing needs.

Implementation frequently involves exchanges between organizations at different levels of government, or between public and private sectors. A common failure in policy delivery is the lack of coordination among agencies; where the effectiveness of inter-organizational coordination essentially is a function of the extent to which agencies in that field interact with each other. Therefore, coordination is a strategy for improving institutional effectiveness, and is capable of improving organizational efficiency in resource use. Inter-organizational coordination aims to share information, share or exchange resources, and encourage cooperative activities that increase capacity. Thus, to promote coordination is to promote sustainable development. Coordination therefore can lead to maximizing the utility of both available and scarce resources.

Evaluation

Periodic evaluation is an essential part of implementation, as it provides information that can lead to useful changes. Its purposes are to assess accountability, check policy or project management, test causality, create project descriptions, strengthen institutional buildings, and design future programs. Therefore, evaluation is the end and the starting point of an implementation process as well as the core of the process. Evaluation establishes a process that allows a policy to be modified, specified, and revised — in a word, adapted. It looks more like a disorderly learning process than a predictable procedure.

The evaluation is designed to review periodically whether implementation outputs have been delivered favorably to meet the intended implementation outcomes, as well as to review the processes used in implementation. This can be accomplished with either a summative or a formative evaluation. A summative evaluation is documentation of a program by recording, for external distribution, an official description of what the program looks like in operation. This program documentation may be used for accountability, to create a lasting description of the program, and to provide a list of the possible causes of a program's effects. The second assessment type is formative, which not only evaluates the critical activities of moni-

toring implementation and examining reporting progress, but can also play a role in the formation, development, and refinement of the implementation plan.

Evaluation in integrated implementation favours formative over summative evaluation. In undertaking the evaluation there are two main methods of evaluation: the conventional method and the participatory method. A conventional method should include initial data for all of the indicators and other aspects of a project. This method tends to rely heavily on quantitative data, and on statistical comparison of data sets. The Participatory method, which has grown considerably in popularity during the past decade, involves a number of procedures that do not conform to the scientific method. For example, (a) project members are closely involved in the evaluation; (b) much of the information may be qualitative; (c) the procedures of method may evolve as the evaluation ensues; and (d) project beneficiaries are empowered to assert their views and to take responsibility for evaluating a policy.

Finally, regional autonomy is an opportunity for local government to manage natural resources utilization based on sustainable principles. However, concerns have to be given to the implementation process of environmental regulations. Integrated implementation framework is capable of guiding environmental managers in implementing a policy, program, or project. It provides a general framework and outlines the steps needed in implementation and the strategies required to deal with the complexity of each variable. It provides a guidance to transform the implementation outputs to the desired implementation outcomes.

However, it must be realized that the proposed framework is not a remedy for implementation failure, but rather an approach to enhance implementation through a step-by-step process.

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