

# Stakeholder Analysis on Implementation of Marine Cadastre in Indonesia

Rizqi ABDULHARIS, Eka DJUNARSJAH and Andri HERNANDI, Indonesia

**Key words:** Marine Cadastre, Indonesia, Stakeholder

## SUMMARY

Marine cadastre is argued to be an essential means of marine resources management. Indonesia is a maritime country as its territory covers 5.8 million square km of sea, which is approximately two third of its territory. From the 5.8 million square km sea coverage, 0.3 million square km is Indonesia's marine territory, 2.8 million square km is categorised as archipelago waters and Exclusive Economic Zone as large as 2.7 million square km. Unfortunately, the huge marine resources potential of Indonesia has not been optimally managed. This is due to the fact that the marine sector only donated 12% of 1998's Indonesia Gross Domestic Income. Along with the effort of GoI to intensify the management of marine resource, conflicts of interests have been arising.

Based on the above facts, the management of marine resources needs to be planned, particularly by means of spatial planning on the level of local, regional and national. The marine spatial planning will become a means to coordinate the use of the Indonesian marine territory. One of the basic aspects of the marine spatial planning, alike the land spatial planning, is the definition of right, restriction and boundary of the legal areas managed by the users, which is called marine cadastre. Thus, marine cadastre is of the critical elements of the management of marine resources.

Marine cadastre is quite a new concept in Indonesia. Considering facts from the above, the authors argue that stakeholder analysis is of essential step on foundation of solid basis for implementation of marine cadastre concept in Indonesia. By identifying characteristics and interests of stakeholders on marine cadastre, as well as conflicts and relations among stakeholders, through stakeholder analysis, capacity and appropriate type of participation of different stakeholders could be identified and further lead to formulation of conceptual design of implementation of marine cadastre in Indonesia. Moreover, this paper describes stakeholder analysis on marine cadastre in Indonesia based on existing regulations and publications on marine resource management in Indonesia.

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## 1. INTRODUCTION

Marine cadastre is argued to be an essential means of marine resources management. Indonesia is a maritime country as its territory covers 5.8 million square km of sea, which is approximately two third of its territory. From the 5.8 million square km sea coverage, 0.3 million square km is Indonesia's marine territory, 2.8 million square km is categorised as archipelago waters and Exclusive Economic Zone as large as 2.7 million square km. Unfortunately, the huge marine resources potential of Indonesia has not been optimally managed. This is due to the fact that the marine sector only donated 12% of 1998's Indonesia Gross Domestic Income. Along with the effort of GoI to intensify the management of marine resource, conflicts of interests have been arising.

Based on the above facts, the management of marine resources needs to be planned, particularly by means of spatial planning on the level of local, regional and national. The marine spatial planning will become a means to coordinate the use of the Indonesian marine territory. One of the basic aspects of the marine spatial planning, alike the land spatial planning, is the definition of right, restriction and boundary of the legal areas managed by the users, which is called marine cadastre. Thus, marine cadastre is of the critical elements of the management of marine resources.

Marine cadastre is quite a new concept in Indonesia. Not until 2003 have marine cadastre been followed up by a research on conceptual design for its implementation in Indonesia. This research was involving Indonesian National Land Agency (*Badan Pertanahan Nasional/BPN*) and Institute for Research and Community Services of Bandung Institute of Technology. The results of this research were the proposed tenure type attached to marine parcel and masterplan for marine cadastre 3D data management. Moreover, marine cadastre-related publications, such as Haroen and Kusuma (2006), Widodo *et al* (2002) and Patlis *et al* (2001), have also been identified. However, those publications were only highlighting technical aspects of and current policy of Government of Indonesia (GoI) on marine cadastre.

Besides legal and technical aspect, institutional aspect is believed as of important feature of any type of cadastre. From the wider perspective of cadastral system, institutional development is necessarily to be implied for allowing the adoption of long-term strategic actions (Enemark, 2005). Moreover, Enemark (2005) states as well that adoption of comprehensive policy on land management is crucial since this will drive the legislative reform, which in return resulted in institutional reform and finally implementation with its entire technical and human resource requirement.

Unfortunately, the importance of institutional aspect has not yet realised by most major stakeholders of marine resources management in Indonesia. Purwaka and Sunoto (2001) indicated that there were public, private and community institutions involved in exploitation of marine natural resources, while Tamtomo (2004) looked at marine cadastre from point of view of two of its major stakeholders, which are Ministry of Marine and Fisheries and National Land Agency (*Badan Pertanahan Nasional/BPN*). However, the numbers of identified institutions by both publications are still limited, whereas there are still many institutions related, either directly or indirectly, to marine cadastre. This in response has contributed to overlapping of jurisdiction of those related to marine cadastre.

According to Allen and Kilvington (2001), stakeholder analysis is the identification of a project's key stakeholders, an assessment of their interests, and the ways in which those interests affect project riskiness and viability. Stakeholders are persons, groups or institutions with interests in a policy, programme or project. This concept provides a basis on designing project by identifying the goals and roles of different groups, and by helping to formulate appropriate forms of engagement with these groups.

This paper adds complexity of marine cadastre from its institutional aspect, while, on the other hand, simplifies it by means of stakeholder analysis. Considering facts from the above, the authors argue that stakeholder analysis is of essential step on foundation of solid basis for implementation of marine cadastre concept in Indonesia. By identifying characteristics and interests of stakeholders on marine cadastre, as well as conflicts and relations among stakeholders, through stakeholder analysis, capacity and appropriate type of participation of different stakeholders could be identified and further lead to formulation of conceptual design of implementation of marine cadastre in Indonesia. Moreover, this paper describes stakeholder analysis on marine cadastre in Indonesia based on existing regulations and publications on marine resource management in Indonesia.

## **2. STAKEHOLDERS OF MARINE CADASTRE IN INDONESIA**

It is previously mentioned that stakeholder mapping on marine cadastre in Indonesia has mostly done from sectoral and institutional point of view. However, it is identified from some publications mentioned in above that there are three stakeholder groups on marine cadastre in Indonesia, namely public, private and community institution. Unfortunately, stakeholder analysis could not be done only from these general groups of stakeholder.

In order to initiate stakeholder analysis, the identification of characteristics, interests and conflicts of interests of marine cadastre stakeholders, as well as relations among them, in Indonesia is done by imitating arrangement applied in general land administration. There are at least four sub-systems of land administration (Enemark, 2005), which are Land Tenure, Land Value, Land Use and Land Development. In this paper, value of marine space is disregarded on some extent in order to focus on foundation of conceptual design of implementation of marine cadastre in Indonesia.

## 2.1 Development of Marine Space

As stated in Enemark (2005), this sub-section describes stakeholders involved in foundation of new physical infrastructure, implementation of construction planning and the change of use of marine space through planning permission and granting of permits. Stakeholders under this component of marine cadastre are classified into those involved in governance of development of marine space in Indonesia.

According to Regulation of Government of Republic of Indonesia no. 25 year 2000 on Authority of Central and Regional Government on Regional Autonomy, there identified stakeholders involved in governance of marine space as follows:

1. Central Government, including the President of Republic of Indonesia and his/her ministers, in charge on:
  - Policy making and arrangements on exploration, conservation, management and utilisation of marine resources at out of 12-nautical-mile sea territory, including archipelagic waters and its undersea surfaces, as well as Exclusive Economic Zone and continent base
  - Policy making and arrangements on management and utilisation of treasures of submerged vessels at out of 12-nautical-mile sea territory
  - Policy making and arrangements on national and provincial sea territorial
  - Standardisation of coastal and small islands management
  - Law enforcement at out of 12-nautical-mile sea territory, specifically international-related affairs
2. Ministry of Home Affairs, the ordinate of Provincial and Municipal Government
3. Provincial Government, in charge on:
  - Governance of inter-provincial affairs within 12-nautical-mile sea territory of province in question
  - Planning and management of provincial sea territory
  - Exploration, exploitation, conservation and management of marine resources within provincial sea territory
  - Conservation and management of biotic marine resources within provincial sea territory
  - Granting permission on fisheries within provincial sea territory
  - Monitoring of utilisation of fisheries within provincial sea territory
4. Municipal Government, in charge on governance of a third of provincial sea territory of municipality in question
5. Regional Autonomy Advisory Council (*Dewan Pertimbangan Otonomi Daerah/DPOD*), advises the President of Republic of Indonesia on policy in regional autonomy, including relegation of municipal-related autonomy to Provincial Government

6. Municipal House of Legislation, approves proposals on implementation of authority through cooperation and relegation of municipality's authority to Provincial Government

Especially regarding Ministry of Marine and Fisheries, according to Regulation of Minister of Marine and Fisheries of Republic of Indonesia no. Per.17.Men/2005 on Organisation and Job Description of Ministry of Marine and Fisheries, it has a wide-spread authority on supporting the execution of Central Government authority on marine and fisheries, including:

- Policy making on macro development of Indonesia's sea territorial
- Marine space macro spatial planning
- Management and conservation of marine natural resources at out of 12-nautical-mile sea territory
- Supporting distribution of fundamental goods
- Management and conservation of natural resources at in and out of 12-nautical-mile sea territory

Furthermore, regarding contiguous zone constituted by UNCLOS 1982, there are stakeholders responsible on preventing and punishing infringement on area of jurisdiction in question. Those stakeholders are:

- Ministry of Treasury, in particular Directorate of Customs and Excise and Directorate General of Taxation
- Ministry of Justice and Human Rights, in particular Directorate General of Immigration
- Ministry of Marine and Fisheries, in particular responsible on implementation of sanitary regulation

## **2.2 Utilisation of Marine Space**

### **2.2.1 Spatial Planning**

According to Act of Republic of Indonesia no. 26 year 2007 on Spatial Planning, there existed several stakeholders on spatial planning in general, including marine space, as follows:

1. National Development Planning Agency (*Badan Perencanaan Pembangunan Nasional*/BAPPENAS), in charge on:
  - Constitution of macro national planning
  - Policy making on supporting macro development
  - Integration of inter-sectoral and –regional plan
2. Ministry of Marine and Fisheries
3. Provincial Government, in charge on spatial planning of provincial territory and providing providing marine-related spatial information

4. Municipal Government, in charge on spatial planning of municipal territory and providing providing marine-related spatial information
5. National Coordinating Agency for Surveys (*Badan Koordinasi Survey dan Pemetaan Nasional/ BAKOSURTANAL*), National Institute of Aeronautics and Space (*Lembaga Penerbangan dan Antariksa Nasional/LAPAN*) and Mapping and Hydro-oceanography Bureau of Indonesian Navy (*Jawatan Hidro-Oseanografi Angkatan Laut/ Tentara Nasional Indonesia Angkatan Laut/JANHIDROS TNI AL*) in charge on formulation of technical policy in marine natural resources survey, as well as providing marine-related spatial information

### 2.2.2 Fisheries

On fisheries-related issues, there are at least two regulations of Government of Republic of Indonesia, which are regarding to Fisheries and Management of Natural Resources in Exclusive Economic Zone of Indonesia. Regulation of Government of Republic of Indonesia no. 15 year 1990 on Fisheries identifies stakeholders of marine cadastre as follows:

- Ministry of Marine and Fisheries, in charge on fishery-related policy. Especially regarding Indonesia's fishery enterprises to explore fishery resources using vessel unit sized between 30 to 60 Gross Tonnage, Directorate of Capture Fisheries is responsible for on granting of dispensation for Indonesia's fishery enterprises operational within 12-nautical-mile sea territory
  - Provincial Government, grants permits to fishery enterprises for its operational within provincial sea territory
  - Municipal Government, grants permits to fishery enterprises for its operational within municipal sea territory
  - Indonesian nationality individual, including fishermen and fish farmers, the eligible subject of exploitation and cultivation of fishery resources within 12-nautical-mile territory, either personally or under fishery enterprises
  - National legal person, the eligible subject of exploitation and cultivation of fishery resources within 12-nautical-mile territory
  - Indonesia Investment Coordinating Board (*Badan Koordinasi Penanaman Modal/BKPM*), grants permission to national fishery enterprise with overseas investments in it for its operational within 12-nautical-mile sea territory
  - Ministry of Treasury, responsible for taxation on fishery activities
- Besides the above stakeholders, there are additional stakeholders according to Regulation of Government of Republic of Indonesia no. 15 year 1984 on Management of Natural Resources in Exclusive Economic Zone of Indonesia, which are:
- Overseas legal person, eligible for exploitation and cultivation of fishery resources under specific circumstances that Indonesian nationality individual and national legal person have not yet fulfilled catchment quota constituted by this regulation
  - Ministry of Agriculture, constituted catchment quota and spesification of vessel unit and tools on exploitation of fishery and other biotic natural resources within

Indonesia's Exclusive Economic Zone and provides information regarding places and procedures for overseas vessel unit to acquire permits on exploitation and cultivation of fishery and other biotic natural resources in Indonesia, as well as regulates management and utilisation of biotic natural resources within Exclusive Economic Zone that has not yet constituted by this regulation

- Ministry of Transportation and Indonesian Navy, approve and provide information regarding places and procedures for overseas vessel unit to acquire permits on exploitation and cultivation of fishery and other biotic natural resources in Indonesia proposed by Ministry of Agriculture

### 2.2.3 Coastal and Small Islands Management

Management of coastal and small islands in Indonesia is constituted by Act of Republic of Indonesia no. 27 year 2007. According to this act, stakeholders of coastal and small islands management are as follows:

- Ministry of Marine and Fisheries, takes control of every natural resources and relegates power on management and exploitation of every natural resources to public and private institution, as well as Indonesia nationality individual
- Provincial Government, responsible planning, utilisation, monitoring dan controlling of land and marine ecosystem for enhancement of wealth of community in provincial territory
- Municipal Government, responsible planning, utilisation, monitoring dan controlling of land and marine ecosystem for enhancement of wealth of community in provincial territory
- Local communities, including indigenous community, traditional and modern fishermen, fish farmer, tourism and fishery enterprise, are main stakeholders of utilisation of natural resources of coastal areas and small islands
- Higher learning institution, including university and Agency for Assessment and Application of Technology (*Badan Pengkajian dan Penerapan Teknologi/BPPT*), responsible for management of coastal areas and small islands through capacity building, education, applied research and policy recommendation

### 2.2.4 Management of Seasand Exploitation

Management of exploitation of seasand is constituted by Directive of President of Republic of Indonesia no. 2 year 2002. In this directive, it is clearly described stakeholders on management of exploitation of seasand, which are:

- Ministry of Home Affairs, perform coordination with provincial and municipal government on management of seasand exploitation within areas engaged by seasand exploitation
- Ministry of Industry and Trade, performs coordination on planning the management of exploitation and export of seasand

- Ministry of Marine and Fisheries, performs coordination on marine, coastal and preservation of marine natural resources spatial planning within areas engaged by seasand exploitation
- Ministry of Energy and Mineral Resources, performs coordination on monitoring of production and technical aspect of seasand exploitation
- Ministry of Forestry, performs coordination on conservation of biotic natural resources and their ecosystem within areas engaged by seasand exploitation
- State Ministry of Environment, performs coordination on environmental aspect related to seasand exploitation
- Indonesian Army, performs coordination on aspect of national defence related to seasand exploitation
- Indonesian Police, performs coordination on monitoring and orderliness of seasand exploitation
- Provincial and Municipal Government, grants permits on seasand exploitation

Moreover, in general, these stakeholders are responsible as well in mineral exploration and exploitation in Indonesia.

#### 2.2.5 Sea Pollutions and Damages

According to Regulation of Government of Republic of Indonesia no. 19 year 1999 on Control on Pollution and Damages of Sea, stakeholders on monitoring and controlling effect of sea pollutions and damages are as follows:

- State Ministry of Environment, supports the President of Republic of Indonesia coordinating and constitution of policy on environmental management
- Environmental Impact Management Agency (*Badan Pengendalian Dampak Lingkungan/BAPEDAL*)
- Ministry of Marine and Fisheries

#### 2.2.6 Tourism

According to Purwaka and Sunoto (2001), stakeholder on marine resource management related to tourims is Ministry of Culture and Tourism. This ministry is responsible on regulating coastal areas for tourism and natural resources conservation. Furthermore, Tamtomo (2004) adds that Ministry of Home Affairs and Ministry of Trasportation are responsible as well in this area of jurisdiction.



### 2.2.7 Marine Ecosystem Conservation

According to Purwaka and Sunoto (2001) and Tamtomo (2004), marine ecosystem conservation is managed by Ministry of Forestry and State Ministry of Environment. Additionally, Regulation of Minister of Marine and Fisheries of Republic of Indonesia no. Per.17.Men/2005 constitutes that Ministry of Marine and Fisheries is responsible as well in conservation of marine ecosystem in Indonesia.

### 2.3 Tenureship of Marine Space

National Land Agency (*Badan Pertanahan Nasional/BPN*) is of institution in Indonesia eligible for granting tenureship. However, it is not clear yet whether marine is area of jurisdiction of BPN. Furthermore, since the foundation of Ministry of Marine and Fisheries on 1999, as well as promulgation of Act of Republic of Indonesia no. 22 year 1999 and Act of Republic of Indonesia no. 32 year 2004 on Regional Governance, tenureship are also given by Provincial and Municipal Government, while Ministry of Marine and Fisheries is responsible on providing guidelines for Provincial and Municipal Government on granting permission regarding management and exploitation of marine and fishery resources.

## 3. STAKEHOLDERS CAPACITY ASSESSMENT

### 3.1 Ministry of Marine and Fisheries

Based on description of characteristics, interests and conflicts of interests of marine cadastre stakeholders, as well as relations among them, Ministry of Marine and Fisheries has a wide-spread authority in all aspects of marine cadastre. However, in most aspects except fisheries, jurisdiction of Ministry of Marine and Fisheries is overlapping with others' jurisdictions. The foundation of Ministry of Marine and Fisheries unfortunately was not followed by re-organisation of other public institutions related to marine and fishery issues, including transferring specific section of other public institutions that is in charge in the above issues to Ministry of Marine and Fisheries. Besides overlapped area of jurisdiction, this in return could trigger disputes between Ministry of Marine and Fisheries and other marine-and-fishery-related public institutions, in particular considering that there existed experts on this issues in other public institutions. This affects as well capability of this ministry to cope with its wide-spread tasks due to limitation on competent human resources.

On the other hand, re-organisation of marine-and-fishery-related public institutions could lead to organisational inefficiency of Ministry of Marine and Fisheries. It is previously mentioned in above that in order to avoid overlapping of jurisdictional area and to cope with its wide-spread tasks in marine and fishery issues, Ministry of Marine and Fisheries should have capacity for absorption of sections in other public institutions that are in charge on these issues. This will in response inflate the number of its employee and, on the other hand, lessen the number of employee of other institutions.

### **3.2 Development of Marine Space**

Based on description on Section 3, it could be identified that public institutions are fully in charge within constitution of policy on development of marine space in Indonesia. These public institutions could further be classified into three groups of stakeholder, which are Central, Provincial and Municipal Government.

Central Government includes the President of Republic of Indonesia and ministries related to development of marine space. Some of these ministries are Ministry of Home Affairs, Ministry of Marine and Fisheries, Ministry of Treasury and Ministry of Justice and Human Rights. Furthermore, it should be highlighted as well the role of Ministry of Foreign Affairs on defining sea territory of Indonesia through conventions and agreements. As constituted by Act of Republic of Indonesia no. 22 year 1999 and Act of Republic of Indonesia no. 32 year 2004 on Regional Governance, Central Government is responsible on management of marine and fishery resources at out of 12-nautical-mile sea territory, including archipelagic waters and its undersea surfaces, as well as Exclusive Economic Zone and continent base.

In relation to its authority, Central Government has enormous capability on management of marine and fishery resources. This is due to the supports from all ministries related to development of marine space.

Having constituted by Act of Republic of Indonesia no. 22 year 1999 and Act of Republic of Indonesia no. 32 year 2004 on Regional Governance, Provincial and Municipal Government are in charge on development of marine space within the sea territory of province and municipality in question. In some extent, governance of development of marine space in general by Provincial and Municipal Government is agreeable. This is due to the fact that Provincial and Municipal Governance are sub-ordinates of Central Government, in which mirrors the presence of sub-ordinates of all ministries related to development of marine space.

Besides the above public institutions, there are two stakeholders from public institution group in charge on development of marine space, either directly or indirectly, which are DPOD and Municipal House of Legislation. Even though these stakeholders are responsible as well on constitution of policy on development of marine space, however, DPOD and Municipal House of Legislation's main task is to provide consultancy services on this issue, either directly or indirectly.

### **3.3 Utilisation of Marine Space**

According to identified regulations on utilisation of marine space, there are three groups of stakeholder, which are public, private and community institution. As mentioned in Section 4.1, Ministry of Marine and Fisheries has a wide-spread authority on utilisation of marine space. Besides Ministry of Marine and Fisheries, there are other public institutions involved in utilisation of marine space, such as BAPPENAS, BAKOSURTANAL, LAPAN, JANHIDROS TNI AL on marine spatial planning; BKPM, Ministry of Agriculture, Ministry of Transportation, Indonesian Navy and Ministry of Treasury on Fisheries; higher learning

institution and BPPT on coastal and small islands management; Ministry of Home Affairs, Ministry of Industry and Trade, Ministry of Energy and Mineral Resource, Ministry of Forestry and State Ministry of Environment on exploitation of abiotic natural resources; State Ministry of Environment, BAPEDAL and Ministry of Forestry on marine and fishery resources conservation; Army and Police on national defence and orderliness; and Ministry of Culture and Tourism, Ministry of Home Affairs and Ministry of Transportation on tourism. However, authority of Ministry of Marine and Fisheries is mostly overlapped with tasks of other public institutions, except on fisheries, while, on the other hand, the above mentioned public institutions besides Ministry of Marine and Fisheries have been performing their tasks before the foundation of Ministry of Marine and Fisheries on, not only utilisation of marine space, but also on utilisation of space in general.

Stakeholders from public institution group could further be divided into those which are responsible on policy constitution, policy implementation and research on utilisation of marine space. In general, all above stakeholders are responsible on constitution of policy on this issue. However, only Ministry of Marine and Fisheries, Provincial and Municipal Government, Indonesian Army and Police, Ministry of Forestry, Ministry of Culture and Tourism, State Ministry of Environment, BAPEDAL, Ministry of Energy and Mineral Resources and BKPM are responsible on policy implementation. Furthermore, there are several stakeholders on utilisation of marine space capable on performing researches, such as higher learning institution and BPPT.

### **3.4 Tenureship of Marine Space**

In general, tenureship in Indonesia is given by BPN. BPN has a long history on delivering tenureship in Indonesia. BPN was initially established by Dutch Colonial Government on 1823 with Cadastral Agency (*Kadastrale Dienst*) as its name on its initial years. Between 1942 and 1955, its name was altered into Bureau of Land Registration. Since 1955, Bureau of Land Registration became an independent body and named as Ministry of Agrarian.

However, since its initial establishment, BPN tasks have only been related to land. Even though it is the only eligible public institution for delivering tenureship, BPN's role and readiness on delivering tenureship of marine space is still questioned.

Furthermore, considering the promulgation of Act of Republic of Indonesia no. 22 year 1999 and Act of Republic of Indonesia no. 32 year 2004 on Regional Governance, Provincial and Municipal Government have a full authority to grant permits on management and exploitation of natural resources. This includes granting permits on management and exploitation of marine and fishery resources. However, as land has been managed centrally in Indonesia, Provincial and Municipal Government could not issue tenureship. Issuance of tenureship is managed by representation of BPN in provincial and municipal level.

#### 4. CONCLUSION

The authors argue that re-organisation of Ministry of Marine and Fisheries is necessarily to be done. This is due to the overlapping of jurisdiction of this ministry with other public institutions, in particular on marine issues. Other stakeholders of management of marine resources have mostly performed their tasks on management of natural resources in general. Even though it is necessary to establish special organisation focused on management of marine resources, considering its extensive scope, however, by relegating authority on marine to specific ministries and agencies that have been performing tasks related to management of marine resources, in particular on marine cadastre. In case that this kind of arrangement is implemented, the authors suggest that there should be separation on management land and marine resources in ministry and agency in question. On the other hand, the authors suggest that Ministry of Marine and Fisheries is focusing on fishery issues, while, at the same time, acting as coordinator on marine cadastre issues.

Specifically on issuance of tenureship on marine cadastre, the authors suggest BPN to hold full control on delivering tenureship and permits related to marine cadastre. Considering its wide-spread coverage, BPN is capable on performing this task. Considering full authority of Provincial and Municipal Government due to Regional Governance Act, Provincial and Municipal Government could consult further arrangement in relation to permit granting on management of marine and fishery resources to BPN. However, considering its limited authority on issuance of tenureship and permits, in which formally limited to land resources only, the authors suggest that BPN should be re-organised and brought-back to its initial structure as Cadastral Agency.

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