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Joint development of offshore energy resources in East Asia

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The Joint Development of Offshore Energy Resources: Prospects and Issues in East Asia

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Abstract

Disputes over offshore energy resources in disputed waters in East Asia are increasingly becoming a source of conflicts in the region. However, the growing needs for energy resources led to joint development in the disputed waters.

In the absence of mutually agreed maritime boundaries joint development might be the best practical way to develop offshore energy resources, while not prejudicing each others’ claims. A wide range of issues such as legal, financial, contractual, operational, international problems may arise from joint development. This article discusses prospect and issues of joint development of offshore energy resources in East Asia.

Key Words: Offshore energy resources, Joint development, Joint development zone, Maritime disputes, Maritime boundary

Overview of Offshore Energy Resources in East Asia

In the mid-20th century, countries around the world in the face of rapidly increasing energy demands began to pay attention to offshore hydrocarbon resources. Despite higher costs and greater risks, energy resources needs and advancement in ocean technology led to the extensive exploration and exploitation of offshore energy resources, represented by oil and natural gas.

The primary catalyst for this is a growing concern for limited production from onshore oil reserves, whose production remains at peak for more than two decades. Oil production
countries have pursued resource nationalistic energy policies which culminated in the oil crisis in the 1970s. For energy resources poor countries such as in Northeast Asia, the stable supply of energy has been a vital matter for their economies, and even their own existence.

Countries around the world have exerted every effort to secure more energy resources, and offshore oil production has become extremely important in the global energy supply. Started in the early 1940s offshore oil production has grown from a modest 1 million barrels per day in the 1960s to nearly 25 million barrels per day in 2005, which account for one-third of world crude oil production. Up through 2005, a total of 503 billion barrels (455 billion barrels of crude oil and 48 billion barrels of natural gas liquid) have been discovered offshore, of which 204 billion barrels have been produced, leaving estimated remaining reserves at nearly 300 billion barrels. The U.S. Geological Survey 2000 World Petroleum Assessment indicated the higher status of offshore oil in the future global energy supply. According to its assessment, undiscovered offshore hydrocarbons are estimated at 306 billion barrels of crude oil and 95 billion barrels of natural gas liquid, accounting for 47% of total undiscovered oil in the world.

In terms of regional distribution, world’s largest offshore oil producing regions overlap those of major onshore oil production such as Persian Gulf/ Middle East, North Sea, West Africa, and Gulf of Mexico, all of which represent 80% of the total of offshore oil production as of 2005. The Asia-Australia region accounts for 11.2 % of offshore oil production. Notably some Southeast Asian countries including Indonesia, Malaysia, and Thailand are rich in offshore hydrocarbons. In contrast, Northeast Asian countries such as Japan, South Korea, and Taiwan, with the notable exception of China, are endowed with
either very scarce energy resources, or virtually none. Thus these countries are heavily or
totaly dependent on imports from overseas to meet their rapidly growing energy
demands. Japan, China, South Korea, and Taiwan together are the largest oil importers,
ranking second, third, fifth, and tenth respectively. It is noteworthy that China’s
expanding economy in recent years demands tremendous energy resources, like an
energy hungry dinosaur. China, which has 18.3 billion barrels of proven oil reserves,
produces 3.8 million barrels per day and consumes 7.4 barrels per day. Having been a net
oil importer since 1993, China depends on 35% of its oil consumption on import as of
20033.

As East Asian countries, led by China, endeavored to develop offshore oil and gas
deposits in overlapping claimed waters, it gave rise to conflicts with neighboring coastal
states. The unilateral attempt of coastal states to develop offshore hydrocarbons in the
East China Sea and the Yellow Sea (or the West Sea of Korea) where most of maritime
boundary delimitation remains unsettled, and territorial disputes over the Senkaku islands
and the Spratly islands exist is becoming a source of regional conflict. Conversely coastal
states’ relentless quest for offshore oil and natural gas renders it more difficult to settle
boundary delimitation and fuels territorial disputes over islands of which waters are said
to be in rich in oil and natural gas.

Despite the intransigence of East Asian countries with respect to maritime sovereignty
disputes, the growing domestic needs for energy resources led to negotiation to develop
offshore resources in a mutually beneficial manner. Some Asian countries came to
agreements for joint development for offshore hydrocarbons, putting conflicting maritime
boundary and territorial claims aside. As recently as April 2007, Chinese Premier Wen
Jiabao and Japanese Prime minister Shinzo Abe agreed to jointly mine contested oil and gas fields in the East China Sea, while leaving matters concerning joint development zone to further discussions⁴. Precedents of joint development are found in South Korea-Japan in 1974, Malaysia-Thailand in 1979, and Indonesia-Australia in 1988. In March 2005, a memorandum of understanding was signed by China, the Philippines, and Vietnam to resolve the energy exploration issues among the three countries in the South China Sea. The countries agreed to do seismic surveys in the area which includes the Spratly islands, without giving up their respective territorial claims⁵.

In the absence of mutually agreed maritime boundaries joint development might be the best practical way to use offshore resources efficiently, while not prejudicing each others’ claims. As a provisional measure to reach the final boundary agreement, joint development is also expected to ease tensions between countries in dispute and permits the development of natural resources in the contested area, which otherwise would be unrecoverable.

For joint development to be implemented, however, a lengthy negotiation process among parties is involved and a large number of issues are concerned. A wide range of issues such as legal, financial, operational, technical, political, international problems may arise from joint development, each of which is essential to joint development. The following sections will discuss provisions for joint development in international law, fundamental elements for joint development, and implications for the East Asia region.

**International Law Governing the Development of Offshore Resources**
The development of international law concerning offshore resources proceeded with coastal states’ extended jurisdictional claims beyond territorial waters in the mid-20\textsuperscript{th} centuries. Customary law which was primarily concerned with navigational freedom and state jurisdiction over narrow band of territorial waters came to the formulation of codified principles to accommodate coastal states’ increasing demands for exclusive rights to offshore resources. A watershed event in this regard was the 1945 Truman Proclamation on the Continental Shelf in which the U.S. asserted the exercise of jurisdiction over the natural resources of the subsoil and seabed of the continental shelf\textsuperscript{6}. The Proclamation inspired coasta lstates around the world to claim extended jurisdiction over the continental shelf. Mexico and Argentina in 1945 and 1946 respectively declared their own jurisdiction over the resources on their continental shelves, followed by Chile and Peru, both of which declared in 1947 their extended jurisdiction up to 200 nautical miles from the coastlines. Whereas the U.S. was motivated by the need for offshore energy resources, Latin American and African countries were more concerned with the protection of their offshore fishery resources by insisting exclusive sovereign rights within extended jurisdiction\textsuperscript{7}. The claims to extended jurisdiction over offshore resources ultimately resulted in the codification of provisions relating to the continental shelf in the 1958 Geneva Convention on the Continental Shelf and the 1982 UN Convention on the Law of the Sea (UNCLOS). It was inevitable that extended jurisdictional claims to the continental shelf and the Exclusive Economic Zone gave rise to overlapping claims between states with adjacent or opposite coasts, whose breadth is mostly less than 400 nautical miles wide.
However, provisions for the boundary delimitation of contested continental shelf areas in international laws are problematic. The 1958 Geneva Convention on the Continental Shelf defines the continental shelf as; “the seabed and subsoil of the submarine area adjacent to the coast but outside the area of the territorial seas, to a depth of 200 meters, or beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas; to the seabed and subsoil---.”

Under the Geneva Convention the principle of the equidistance line (or the median line) plus special circumstances is embodied as the criteria for the delimitation of continental boundary between states with opposite or adjacent coasts. For states with adjacent opposite coasts, it states that “--- the boundary of continental shelf --- shall be determined by agreement ---. In the absence of agreement, and unless another boundary is justified by special circumstances, the boundary line is the median line, every point of which is equidistant from the nearest point of the baselines---.” For states with adjacent coasts, it provides that “the boundary of the continental shelf shall be determined by agreement--. In the absence of agreement, and unless another boundary line is justified by special circumstances, the boundary shall be determined by application of the principle of equidistance from the nearest points of the baselines---.”

The Geneva Convention sets forth that agreement between concerned states is the most critical criterion in determining the continental shelf boundary. Otherwise both agreement and special circumstances for another boundary line, the median line (or the equidistance line) principle is to be applied. With regard to its application, what constitutes special circumstances came under contention. Moreover, the jurisprudence of the International Court of Justice (ICJ) in 1969 weakened much of the foundation of the equidistance
principle of the Geneva Convention. In February 1969, in its judgment of the North Sea Continental Shelf Cases, the ICJ not only denied the universality of the median line principle, but it also invented an alternative criterion based on the natural prolongation of the land territory\textsuperscript{11}.

In order to accommodate growing demands of developing countries for extended exclusive jurisdiction over offshore living and non-living resources, the 1982 UN Convention on the Law of the Sea created the Exclusive Economic Zone (EEZ), which extends out up to 200 nautical miles from the baselines, and devised a new definition of the continental shelf. Within the EEZs, coastal states are entitled to sovereign rights to exploring, exploiting, conserving, and managing the natural resources of the waters superjacent to the seabed and of the seabed and its subsoil; and to jurisdiction with regard to; 1) the establishment and use of artificial islands, installations, and structures; 2) marine scientific research; 3) the protection and preservation of the marine environment\textsuperscript{12}.

The UNCLOS defines the continental shelf as; “the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines.”

Despite the fact that both the EEZ and the continental shelf, to the limit of 200 nautical miles from the baselines, generate the same sovereign rights, as far as the seabed and the subsoil are concerned, there exists a clear distinction in respect of claim; whereas every coastal state is entitled to the continental shelf without a formal claim under the Geneva Convention\textsuperscript{13} and UNCLOS\textsuperscript{14}, for the EEZ coastal states are needed to claim officially the limits of the EEZ under UNCLOS.
UNCLOS reaffirms the principle of the natural of prolongation of the land territory, held in the 1969 North Sea Continental Shelf Cases. In respect to the criterion of the continental shelf delimitation, UNCLOS provides the principle of equitable solution, stating that “the delimitation of the continental shelf between states with opposite or adjacent coasts will be effected by agreement on the basis of international law--- in order to achieve an equitable solution.” Apart from the equidistance line principle set forth in the 1958 Convention, UNCLOS provides the equitable solution principle as the criterion of the continental shelf delimitation. Contrary to a clear-cut criterion in the Geneva Convention, the vague mechanism of “equitable solution” in UNCLOS has given rise to a great deal of controversy as to the criteria of being “equitable”. In the absence of the definite meaning, some judicial clues for the “equitable solution” are found in the precedents of continental shelf boundary delimitation cases.

Surveying the precedents of boundary delimitation cases, Professor Jon Van Dyke at University of Hawaii concluded the key principles that emerge from the decisions rendered during the past 25 years are; 1) the natural prolongation principle no longer receives much attention; 2) very small islands tends to be ignored altogether and even larger islands have a reduced role in affecting a maritime boundary because their coastlines will inevitably be shorter than that of an opposite continental land mass or larger island; 3) countries appear to have a right to avoid being totally suffocated by an ocean zone of a neighbor that cuts them off from access to the seas altogether and innovative corridors have been constructed to avoid that result; 4) Decision-makers tend to give each competing country some of what they seek, to protect their vital security interests. Another important emerging trend is that most countries now prefer a single
maritime boundary that divides the exclusive economic zone and the continental shelf at the same location\textsuperscript{17}.

In practice coastal states in continental shelf boundary dispute are not likely to opt to the third party resolution for the following reasons: 1) a nationalistic sense that sovereign rights of their own should be determined by themselves; 2) unpredictability that their own claims might not be fully accepted and might surrender their calms; 3) political risk at stake when vital national interests are not preserved; 4) difficulty of reaching agreement for the third party resolution since all state parties are not likely to agree; 5) the decision of the third party in favor of a state will aggravate relationships with the other in tension; 6) the third party resolution including judicial decision is a lengthy and costly process.

UNCLOS encourages states concerned to make every effort to enter into provisional arrangements of a practical nature and not to jeopardize or hamper the reaching of the final agreement\textsuperscript{18}. Joint development for offshore resources in this sense is a provisional arrangement, pending the maritime boundary delimitation. It is also a compromise of states concerned for both the development of offshore resources and the integrity of maritime domain.

**Essential Factors to be Considered for Joint Development**

As illustrated above, the joint development of offshore resources, in principle, is the agreement of state parties as to how to jointly explore and exploit offshore energy resources in contested areas, and how to share revenues and costs generated from the joint development. State parties are responsible in building the framework of joint development, and subsequently determining in the details of joint operations. The
structure of the joint development agreement primarily relies on the agreement of states concerned. Thus there are significant variations in the joint development arrangements that are in existence today---there are at least 20---but most fall into one of three basic models\textsuperscript{19}.

Model I: each state retains authority to license its own nationals (or other licensees selected by the state) to operate within the joint development

Model II: a joint authority with licensing and regulatory powers manages development of the resources on behalf of both states; and

Model III: one state manages development of the resources on behalf of both with the other state’s participation limited to revenue sharing and monitoring.

There are a number of factors common as well as essential to the joint development arrangement, irrespective of its variation. In fact, the negotiation of joint development between governments concerned primarily concerns those factors which will determine the structure of the joint development arrangements. Below this paper will discuss some of fundamental issues to be considered for the joint development agreement.

\textit{Creation of the Joint Development Zone (JDZ)}

As far as the definition of the joint development zone is concerned, it can be defined as the area where states concerned with overlapping jurisdictional claims agreed to jointly develop offshore resources in the area of overlap of such claims. Having said that, without JDZ, the existence of the dispute over the boundary delimitation might prevent the exploitation of offshore resources and investors may not be willing to invest in the disputed area. The first and most significant step for the creation of the joint development
zone is that concerned states need to acknowledge the existence of overlapping claims and agree on the scope of the area of such claims. Where state parties significantly differ on the areas of overlapping claims at the outset, it will be extremely difficult to compromise the area of the joint development arrangement during negotiations.

The characteristics of JDZs differ in relation to the boundary delimitation. In some cases the maritime boundaries between the states concerned have already been delimited with joint development of an area being part of the overall delimitation process. The Bahrain/Saudi Arabia, Kuwait/Saudi Arabia, Qatar/Abu Dhaibi, France/Spain, and Iceland/ Norway Agreements are examples of joint development regimes established in connection with delimitation20. In other cases, joint development arises subsequent to the delimitation of boundaries as a result of transboundary unitization clauses, such as those which appear in the treaties concluded by the United Kingdom with its neighbors concerning continental shelf delimitation21. Finally, there has been joint development in areas of overlapping claims with no reference to or prior need for a settled international boundary between the two states. The Sudan/Saudi Arabia, Japan/South Korea, and Thailand/Malaysia Agreements are examples of joint schemes as alternatives to a boundary22.

The actual area of the zone will normally be described in terms of geographical coordinates joined by appropriate lines. Of course, there will also be a depth element to the zone -- the sea, seabed, and subsoil -- and it will be necessary to take this account23.

Structure of the Joint development Arrangement

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As pointed out earlier, there are three basic models with respect to the joint development arrangements. The differences of the three models primarily are concerned with how the decision-making structure is organized and how the authority to grant license or concession is allocated. It is an essential part of joint development in deciding the directions of cooperation between the state parties in the joint development, and thus, in practice negotiations are primarily concerned with opting for the types of structure of the joint development, which mostly fall into one of the following existing structures.

1) Joint venture structure

It might also be called a single state structure or a concurrent development structure. Each government will be entitled to nominate its own concessionaries to undertake development activity. Having each nominated one or more concessionaries to develop a specific part of the zone, the governments will be required to ensure that their concessionaries enter into a joint operating agreement with each other. This form of joint development structure allows each state party to grant development contracts under its own legislative framework and development regime. The recipients (contractors) thereof from each state party must enter into joint operating agreements between/among them to proceed with development operations in the designated zone. The concessionaires will have to divide the petroleum recovered by the joint venture in the shares that have been agreed by the states. The arrangement sounds quite simple. However the question arises as to which laws and regulations—both in relation to petroleum activities and otherwise—will apply to the zone. The 1978 Japan/South Korea Agreement may represent this form of structures. In most cases, there has been set up a joint commission composed of
representatives from both states, in which the joint commission plays only a supervisory or consultative role.

2) Joint authority structure

It might be also called an interstate joint venture structure. Neither state is directly responsible for the management of development, nor choosing concessionaries. Instead both states delegate the power they have in respect of such management -- or even their actual right to the resources -- to a single body, which could be called a joint authority. In this instance, the joint authority will exercise the rights and take responsibilities pertaining to exploration and exploitation of seabed minerals, and this supra-national body will have a direct licensing power. The best example of this is to be seen in the Thai/Malaysia MOU where the joint authority (set up in 1979) assumes rights and responsibilities on behalf of both states in respect of mineral exploitation, as well as development, control and administration of the system. The 1974 Sudan/Saudi Arabia Agreement, the 1988 Indonesia/Australia Agreement, and the 2001 Nigeria/Sao Tome E Principe Agreement fall into this category. In the case of the Nigeria-Sao Tome agreement, the treaty provides for the creation of the Joint Ministerial Council (JMC) with overall responsibility for activities within the JDZ and the Joint Development Authority (JDA) responsible to the JMC, responsible for the management of activities within the JDZ. The JDA is governed by a board consisting of four executive directors, two appointed by Nigeria and two by Sao Tome. Decisions of the executive directors are to be arrived at “by consensus,” failing which the matter is to be referred to the JMC.
The disadvantage of this model is that in some way or another state parties surrender their sovereignty to the joint authority in respect of the development of the JDZ. State parties are reluctant to empower the joint authority core rights such as the licensing power, and thus the joint authority is likely to be a joint administrative body to merely implement what has been decided at the governmental level of the state parties. Another important issue arising from the creation of the joint authority is as to the application of laws and regulations to govern the joint body. The state parties need to come up with laws and regulations applicable to the operation of the joint body, unless they agree to apply either of those of the state parties. Furthermore, the legal personality of the joint body needs to be discussed in order to address liability and other applicable legal issues.

3) Single state structure

As set forth in the Model III of the British Institute of International and Comparative Law, it is a form of joint development that allows one state to manage development of the resources on behalf of both with the other state’s participation limited to revenue sharing and monitoring. It will probably involve that single state managing the zone as if it were an undisputed part of its territory or maritime areas, and as a result applying its own legislation and regulations, in particular in relation to the collection of revenue. Examples of this are the 1969 Qatar/Abu Dhabi Agreement and the Timor Gap Zone of Cooperation Treaty of 1989 between Indonesia and Australia in respect of areas A and B where petroleum operations will take place under Indonesian or Australian laws respectively with 10% revenue going to the other state. This type of the joint development has the virtue of simplicity, but it also has the drawback of “big brother”
suspicion relating to possible loss of sovereignty and a fair division of benefits\textsuperscript{33}. Thus the most essential prerequisite to the single state structure may be trust between the state parities.

\textit{Types of Petroleum Development Regime}

The problem arises of choice of a particular petroleum development regime when different regimes exist under the different national legal systems of the parties involved in a joint development zone\textsuperscript{34}.

The choice of a petroleum development regime is concerned primarily with how to share benefits and costs generated from petroleum development operations between state parties and oil companies, and how to secure state parties’ participation in petroleum operations. While the joint development arrangements involve agreements between state parties, the petroleum regime is concerned with the types of contracts between state parties and oil companies. There are a number of petroleum development regimes in practice. The adoption of a particular petroleum development regime by state parties may be determined primarily from the economic benefit perspective, but also from other relevant factors including political considerations and technology transfers.

\textbf{1. Licensing system --- Concessions}

Some of the manifest deficiencies of a licensing or concessions regimes are\textsuperscript{35}:

a) The state is essentially a tax/royalty collector in a concessions regime;

b) Supervision of petroleum operations is only through exercise of regulatory powers;
c) The state does not involve itself in critical decisions such as pace and extent of exploration or determination of commerciality of a discovery;

d) A fiscal regime under a concession system is relatively inflexible and, therefore, is not as sensitive as a contractual regime to such factors as geological prospectivity, well productivity, costs and price projections.

2. Joint ventures

In order to overcome structural weakness of concessions, namely that under such a regime the concessionaire owned all of the petroleum produced and in effect controlled all critical aspects of petroleum options, joint ventures were introduced both in established and new producing countries as a means of correcting some of these deficiencies.

Joint ventures thus provided a means by which governments acquired ownership of a part of the petroleum produced, as well as secured active participation in decision-making and management of petroleum operations. The government “take” was improved since in addition to royalty and tax, the government also became entitled to its share of petroleum and/or profits (dividends). However in order to gain this additional benefit the government had to assume the burden of contributing a proportionate share of the exploration, development and operating costs.

Under a carried interest participation option, it was a condition of the license (concession) granted by the government, that in the event of a discovery, the government (or national oil company) could, within a stipulated period, exercise an option to participate. In other words, the entity could become an equity partner by acquiring up to a
stipulated percentage by agreeing to contribute a proportionate part of exploration and/ or development and operating costs.\textsuperscript{38}

3. \textit{Production-sharing contract}

Under a production-sharing contract (PSC), the government (or national oil company) will engage the oil company as a contractor to provide technical, financial, and commercial services. Under a PSC the oil company only acquires an entitlement to a stipulated share of the oil produced ("cost oil") as a reward for the risk taken and services rendered by it. The government is the owner of the petroleum produced, subject only to the contractor’s entitlement to its share of the production. An advantage of a PSC is that with a cost recovery limit, the government or the national oil production company secures its share of profit oil from the very inception of production, which is likely in normal cases to be more substantial than a royalty payment under a concession\textsuperscript{39}.

4. \textit{Hybrid form}

Production-sharing contract with a carried interest participation option Hybrid forms, such as a production-sharing contract with a carried participation option (China, India), have been developed. Since under a PSC the government retains ownership of the petroleum produced except for the contractor’s share, and further since the government is able to participate in petroleum operations, it is not necessary for the government to seek participation in order to secure ownership of its share of oil or to involve itself in the management of petroleum operations. The principal benefit of the government’s
participation is to increase its share of the production by exercising the option after a discovery is made\textsuperscript{40}.

**Provisions for Preservation of Rights**

It is essential that joint development agreements provide for a “without prejudicing” clause facilitating the state parties’ engagement in the development of offshore resources, by putting the delimitation disputes aside. In the case of the 1978 South Korea/Japan Agreement, it provides for a “without prejudicing” clause\textsuperscript{41}, stipulating that “nothing in this agreement shall be regarded as determining the question of sovereign rights over all or any portion of the Joint Development Zone or as prejudicing the positions of the respective parties with respect to the delimitation of the continental shelf”.

It is worth noting that in the 1988 Indonesia/ Australia Agreement, the provision for “without prejudicing”\textsuperscript{42} is aimed to prevent a weakening of each state’s position on the continental shelf delimitation or sovereignty claims, which might arise from the disproportionate revenue share. Under the agreement, revenues collected in the sub-zones B and C are shared in proportion to 90 to 10 in favor of the nearest state party.

**Unitization\textsuperscript{43}**

What if oil or gas deposits straddling the sub-zones of a joint development zone (JDZ) or the boundaries of the JDZ are discovered after the joint development zone is agreed? Unless there is agreement on the straddling resources, it is highly likely that this new discovery would give rise to a dispute with respect to contractual problems between concessionaires of the sub-zones or the ownership of discovered resources between the
state parties. In order to prevent such possible disputes in relation to potential straddling resources, it is necessary to provide for a unitization clause which provides a consultation obligation of state parties as to the effective ways of exploiting such resources. Whether or not an agreed maritime boundary exists is a distinction between joint development and unitization. A unitization agreement first defines the extent of the field or fields in question. The parties then decide together how exploration will be conducted (usually by a singly operating company) and how the revenue from the field will be shared.

The first such arrangement was conducted between Norway and the United Kingdom in 1976 concerning the Frigg field straddling their maritime boundary in the North Sea, and most unitization agreements can be found in the North Sea. However, more recently, Nigeria and Equatorial Guinea completed a unitization agreement for the Zafiro-Ekanga field in 2002. The 1978 South Korea/Japan Agreement also provides for unitization that in the event that any single geological structure of field of natural resources extends across any of lines of the JDZ or lines bounding the sub-zones of the JDZ, concessionaires need to seek to reach agreement as to the most effective method of exploiting such structure or field.

**Other Issues**

Other fundamental issues to be agreed upon during negotiations include taxation, dispute settlement, security, environmental protection, and health and safety.

The applicable tax regime depends primarily on the types of the joint development arrangement. In the case of joint venture structure, each of concessionaires will pay income taxes to the state party which awarded the concession under the tax regime of the
state party. As for the single state structure, the managing state is responsible for collecting revenues from concessionaires under its tax regime and will share the revenues with the other state party in proportion to agreement. The position in relation to joint authorities, however, is less certain. Since the joint authority is responsible for the award of concessions, it might seem natural that it should itself collect revenue in relation to such concessions, and pass the appropriate shares on to the governments. To do so, the joint authority would have to adopt and apply its own tax regime. This was in fact the route followed in the Nigeria-STP zone.\textsuperscript{47}

In terms of dispute resolution with respect to the interpretation and application of the joint development agreement, three aspects of disputes are envisaged; 1) disputes between state parties; 2) disputes between a state party(or joint authority) and a concessionaire( or contractor) ; 3) disputes between concessionaires( or contractors). For the settlement of disputes arising between the state parties, diplomatic efforts or direct consultation between the state parties are preferred, as set forth in the 1974 South Korea/Japan Agreement and the 1988 Indonesia/Australia Agreement.\textsuperscript{48} The two bilateral agreements in this regard are distinctive that whereas the South Korea/Japan Agreement provides for a referral to the third party arbitration when diplomatic efforts fail, the Indonesia/Australia Agreement has not provided for any further settlement mechanism in the event of failure of direct consultation. However in order to facilitate dispute settlement between a state party (or joint authority) and a concessionaire (or contractor), the Indonesia/Australia Agreement provides for an obligatory clause of binding commercial arbitration in each production sharing contract. In contrast, the South Korea/Japan Agreement has not employed such settlement mechanism.
As the number of offshore drillings significantly increased in recent years, a common standard dealing with the problem of pollution arising from oil operations and abandoned installations has been required. Likewise, the needs for a common standard for the safety of navigation around the oil installations and the health of workers have emerged.

**Issues for Joint Development of Offshore Energy Resources in East Asia**

*Prospects of Joint Development*

As illustrated earlier, energy resources poor Northeast Asian countries are desperate to secure energy resources, from home and abroad. Remarkably China’s relentless pursuit of energy alliances across continents seems to have given rise to a change in the landscape of international politics. With a high priority of a stable energy supply to meet its unquenchable energy demands, China is expanding its energy diplomacy from the Middle East into Africa and South America.

Along with onshore oil drillings, China began to explore offshore energy resources in the 1980s in the East China Sea, which has been in dispute with Japan with respect to the maritime boundary delimitation and the ownership of the Senkaku(or Daio-yu dao) islands. The Chinese grand plan was to build seven oil and natural gas fields in the Xihu Trough, including the Pinghu, Canxue, Duanqiao, Tianwaitian, and Chunxiao sites covering an area of 22,000 square kilometers. While most deposits in the Xihu Trough are on the Chinese side of the Japanese drawn median line, the Chunxiao gas field is only 3.1 nm west of the Japanese median line on the Chinese side, and thus becoming most controversial between the two countries. When China began to develop the Chunxiao gas field in Aug 2003, Japan demanded that China should stop the project because the gas
field would siphon off its energy resources from the Japanese EEZ. In July 2005 the Japanese government granted a private oil firm, Teikoku Oil Company, a permit to explore oil and gas fields in the vicinity of the median line claimed by Japan. As pointed out earlier, the two countries recently agreed on joint development of the contested gas fields, but they remain wide apart on how to proceed with such a plan\textsuperscript{50}.

Despite the East Asian countries’ relentless quest for offshore energy resources, which might even be described as a “resource war” in the seas of East Asia, the unsettling conflicting territorial and boundary claims has prevented from developing offshore energy resources. As far as the boundary delimitation of EEZ and continental shelf in Northeast Asia is concerned, most of maritime boundaries remain unsettled. Of nine maritime boundaries\textsuperscript{51}, only one -- North Korea vs. Russia-- has been fully delimited, and the rest are either partially settled, or completely unsettled. In addition sovereignty disputes are going on over the ownership of islets such as Dok-do (or Take Shima), Senkaku islands (or Daio-yu dao), Spratly islands, and Parcel islands.

Given the complicated nature of maritime disputes in East Asia, joint development might be a practical way to use offshore resources in a mutually beneficial manner, setting overlapping territorial and boundary claims aside. However the geopolitical nature of East Asia, especially Northeast Asia, which lacks trust in each other, has served as a barrier to joint development arrangements in the contested areas. Meanwhile, disputes over offshore energy resources in East Asia are becoming a serious source of conflicts posing a threat to peace and stability of the region. However, there is a positive view with regard to prospects of joint development in East Asia that, as evidenced in the case of 1974 South Korea/Japan joint development agreement, which will be discussed in the
following section. That is, the needs for energy resources would promote cooperation and lead to joint development of offshore resources beyond political divergences of concerned states. East Asian countries are expected to be more concerned with joint development of offshore energy resources, given the nature of maritime territorial and boundary disputes, the growing significance of offshore emergency resources, and the vital energy security issue.

A Case of Joint Development in East Asia: 1974 South Korea/Japan Agreement

Background

The Agreement between the Republic of Korea and Japan concerning Joint Development of the Southern Part of Continental Shelf adjacent to the Two Countries (hereinafter referred to as the 1974 South Korea/Japan Agreement) signed in 1974 was remarkable in many respects. Although no commercial discovery has been made yet, the agreement itself is a significant model of joint development of offshore energy resources in the absence of mutually agreed boundaries. Furthermore, the agreement for joint development is a cornerstone for further maritime cooperation in the region of East Asia, given long-held strained relations between South Korea and Japan and the complicated nature of maritime disputes in the semi-closed seas of Northeast Asia.

The negotiation for the joint development arrangement was prompted by a UN report in 1969 which raised a high probability of oil reservoirs on the continental shelves in the East China Sea and the Yellow Sea. The Committee for the Cooperation of Joint Prospecting for Mineral Resources in Asian Offshore Areas (CCOP) under the UN
Economic Commission for Asia and the Far East\textsuperscript{53} (ECAFE) put out a geology survey report in which it concluded: “a high probability exists that the continental shelf between Taiwan and Japan may be one of the most prolific oil reservoirs in the world” and that “a second most favorable area for oil and gas is beneath the Yellow Sea.

In the wake of the UN report, concerned countries such as South Korea, Japan, and Taiwan rushed to declare their own jurisdiction of the continental shelf both in the East China Sea and in the Yellow Sea. However the three countries differed on the legal principle of their continental shelf claims: Japan insisted on the median line principle; Taiwan on the natural prolongation of land territory; and South Korea on the combination of both, that is, the natural prolongation of land territory principle toward Japan in the East China Sea and the median line principle toward China in the Yellow Sea.

As a result, by late Sept. 1970, altogether 17 sea-bed zones were established by these three coastal states alone, with their unilateral claims overlapping to such an extent that only four of the 17 zones remained uncontested. For many of the zones, oil exploration contracts were promptly signed between the coastal sates and Western oil companies\textsuperscript{54}. Inspired by the anticipation of being oil production countries, the three countries agreed on joint development in mid-1970, pending the delimitation of contested areas. However, to complicate matters, Japan, China and Taiwan were involved in a territorial dispute over the ownership of the Senkaku (or Diao-yu dai) islands in the East China Sea. Correspondingly China strongly protested the joint development scheme on the grounds that China was entitled to the proposed continental shelf areas for joint development. As a consequence, the first attempt of joint development by South Korea, Japan, and Taiwan ended up failure. After Taiwan dropped out of the joint development scheme for political
reasons relating to China, South Korea and Japan again engaged in negotiation for joint development late in 1972. The first oil crisis, which began in Oct. 1973, gave a decisive impetus to their efforts, leading to the signing of an arrangement in January 1974. Additionally the two countries agreed on the continental boundary delimitation of the continental shelf in the Korea Strait. South Korea ratified the joint agreement in December 1974, but its implementation was delayed until June 1978 when Japan finally ratified it.

**Distinctive features of the Agreement**

This section will discuss distinctive features of the Agreement. In principle along with efficiency of joint development, the Agreement is equally concerned with the integrity of sovereignty claims of the two countries to the contested continental areas. Such an underlying tenet is embodied throughout joint development mechanisms, such as sub-zones of the JDZ, managing structure of the JDZ, application of laws and regulations, without prejudicing clause, unitization, and dispute settlement.

1) The Joint Development Zone (JDZ)

The JDZ covers 24,092 square nautical miles of overlapping areas in the northern part of the continental shelf adjacent to the two countries. The perimeter of the JDZ is connected by 20 segments of straight lines and subsequently the JDZ is divided into 9 sub-zones, each of which shall be explored and exploited by concessionaires of the two states. In terms of characteristics of the JDZ, it is an alternative to boundary in the absence of reference to the boundary delimitation in the Agreement.
2) Joint Venture Structure

The Agreement may represent the type of joint venture structure in managing the JDZ. Each state party is entitled to authorize one or more concessionaires to each sub-zone. Correspondingly the terms of concession contracts, including the sharing of benefits and expenses, depend on negotiations between each state party and concessionaires. Once concessionaries are nominated by each state party, then the concessionaire(s) of each state party is required to enter into an operating agreement which will provide for the sharing of resources and expenses, designation of operator, and the settlement of disputes. The operator designated by agreement between concessionaires of both parties is responsible for exclusive control of all operations\(^58\).

3) The Joint Commission

The Joint Commission is established to consult matters concerning the implementation of the Agreement. The Commission, consisting of four members appointed by each state party, performs a supervisory task of overall exploration and exploitation activities.

4) Benefits and Expenses

Concessionaires are entitled to an equal share of natural resources, and expenses are shared in equal proportions between concessionaires. The concessionaire’s share of extracted natural resources in the JDZ is subject to sovereign rights of the state party which granted concession\(^59\). Accordingly each state party imposes taxes and other charges on its own concessionaries with respect to exploration or exploitation activities in the JDZ\(^60\).
5) Applicable Laws and Regulations

In the application of the laws and regulations, except where otherwise provided, a state party applies its own laws and regulations to exploration and exploitation in the sub-zones where the state party’s concessionaires act as operators. It allows a state party to manage independent exploration and exploitation activities in the sub-zones where the state party designated operators.

6) Duration

The Agreement remains in force for 50 years, and each state party can terminate it anytime thereafter, with 3 years’ prior notice to the other party.

Factors to be Considered for Further Joint Development Arrangements

Like in the case of the South Korea/Japan Agreement, the soaring energy demands and the growing concern for energy security promote joint development in the contested waters in East Asia beyond divergent national interests. However there are many barriers to joint development arrangements in the seas of East Asia.

Strained relations

The long-term political nature of East Asia, including lingering imperial heritage and mutual distrust, is blamed for the lack of international cooperation. Furthermore growing chauvinistic nationalism in the region renders it more difficult to deal with territorial and maritime boundary issues in such a manner which is practical and mutually beneficial. As evinced in disputes between China and Japan over oil and gas deposits in the East China
Sea, rivalry relationships among Northeast Asian countries are a significant obstacle to the joint development of disputed offshore resources. When a peculiar situation of the Taiwan Strait and the Korean Peninsular is considered, the matters concerning joint development are more complicated. In particular the rise of China as a global power, with its rapid economic growth and reinforced military forces, is reshaping geopolitics in the seas of East Asia, and strategic national interests at sea are becoming increasingly significant and divergent.

**Divergence of state systems**

Disparity in political, economic, and legal structures between state parties of joint development schemes will inevitably make negotiations intricate. Especially negotiations between countries with differing state systems, such as between communist China and capitalist neighbor countries, will be more complicated. As China becomes more involved in most of maritime boundary disputes in East Asia, its differing primary state arrangements relating to joint development from those of its neighbors, including gaps in political, economic and judicial systems, laws and regulations, taxation, and accounting, may become a serious obstacle.

With respect to the application of laws and regulations in the South Korea/Japan Agreement, for example, South Korea and Japan were able to agree on applying the laws of the operator’s country in each sub-zone since the two countries did not have radical legal differences. In contrast, there exist large disparities in state arrangements between China and other countries in the region, of which differing legal systems may pose an obstacle to the application of laws and regulations.
**Pre-existing rights**

Countries in boundary disputes frequently grant oil companies concession or license in disputed waters, as a way to make it public and bolster their sovereignty claims. As a result, when the joint development scheme is carried out, contractual problems between a state party, which granted the concession or license, and contractors may arise. Thus pre-existing rights of contractors frequently became an obstacle to the establishment of the JDZ, like in the joint development treaties of Thailand/Malaysia and Indonesia/Australia. The Tai/Malaysia Agreement has not worked as intended because of difficulties integrating existing licenses into the operating system which will be established under the Agreement. Prior to the signature of the Indonesia/Australia Treaty, there had taken place in the area demarcated as Area A of the Zone of Cooperation petroleum exploration, seismic studies and drilling of wells by a number of oil companies pursuant to permits granted under the Australia Petroleum Act 1967. The Treaty is silent about pre-existing “rights” of contractors.62

Unless the status of pre-existing rights of contractors is negotiated between state parties, each state party which granted concessions will be forced to deal with the pre-existing rights of contractors in such a manner which does not undermine trust of the state party. Such methods may include compensation and favorable considerations in granting concession in the JDZ. Similarly existing fishery rights in the contested, rich fishing grounds waters of East Asia, appears to be also a significant issue. In addition, assuring the freedom of navigation is another concern. As a means of mitigation, the South Korea/Japan Agreement provided for the fisheries and navigation protection clause,
stating that fisheries and navigation in the superjacent waters of the joint development zone will not be unduly affected\textsuperscript{63}.

\textbf{Opposition of the third party}

As stated earlier differing principles with respect to maritime boundary delimitation, coupled with territorial disputes, are blamed for unsettled disputes; South Korea insists on the median line principle, as opposed to China’s natural prolongation of land territory in the Yellow Sea (or the West Sea of Korea); Japan is on the median line principle while China is on the natural prolongation of land territory. Territorial disputes in the region of East Asia include Dok-do (or Take Shima in Japanese) between South Korea and Japan, the Sekaku islands (or Diao yu dao in Chinese) between China and Japan, Northern Territories between Japan and Russia, and the Spratly islands in the South China Sea. Under such circumstances, joint development in disputed areas may give rise to opposition of the third party. Especially in the East China Sea where claims of China, Japan, and South Korea overlap, a joint development scheme may cause opposition of the third party. China firmly opposed to the joint development scheme between South Korea and Japan on the ground that it violated it sovereign rights in the region.

\textbf{Conclusion}

This paper discussed many aspects of joint development arrangements for disputed offshore resources and addressed issues to be considered in this regard. The prominent merit of joint development is to jointly develop offshore energy resources in disputed areas in such a manner which is mutually beneficial to disputants, setting boundary
overlaps aside. Another remarkable feature is that sovereignty claims of state parties are not affected by such joint development schemes. Joint development schemes require a high degree of cooperation in disputed waters between state parties with differing state arrangements.

With a high priority of securing energy resources, East Asian countries are increasingly concerned with the development of offshore energy resources. In the absence of mutually agreed maritime boundaries, however, unilateral development of offshore resources in disputed areas is likely to cause serious conflicts, which could escalate toward military clashes. Given the nature of maritime boundary and territorial disputes in East Asia which are not expected to be settled in the near future, joint development appears to be the best practical option at this juncture. As discussed previously, joint development arrangements involve a variety of factors. The structure of joint development will be varied, dependent on negotiations of state parties. Of such factors mutual trust between state parties is the key to joint development schemes. Although China and Japan recently agreed on joint development of the disputed oil and gas fields in the East China Sea, there seems to be a long way ahead for joint development to be implemented for such reasons.


2 Ibid.


4 Asashi Shimbun, April 14, 2007.


6 In the Truman Proclamation the United States declared: Having concern for the urgency of conserving and prudently utilizing its natural resources, the Government of the United States regards the natural resources of the subsoil and the sea-bed of the continental shelf beneath the high seas, but contiguous to the coasts of the U.S., subject to its jurisdiction and control.


8 The Convention on the Continental Shelf, Article 1.

9 Ibid, Article 6(1&2).
The ICJ declared: Delimitation is to be effected by agreement in accordance with equitable principles, and taking account of all the relevant circumstances, in such a way as to leave as much as possible to each Party all those parts of the continental shelf that constitute a natural prolongation of its land territory into and under the sea, without encroachment on the natural prolongation of the land territory of the other.  


UNCLOS, Article 56 & 57.

The Convention on the Continental Shelf, Article 2(3).

UNCLOS, Article 77(3).

UNCLOS, Article 83.


Ibid.

UNCLOS, Article 83(2).


Ibid.


In the model agreement of the British Institute of International and Comparative Law, the development authority of this form is called “concurrent development authority”. I understand that it is named after its function that each state party “concurrently” operates the licensing system in the joint development zone.

David Lerer, op. cit.


Ibid.

David Lerer, op. cit.


Hurst Grove, op. cit.: 85.

David Lerer, op. cit.

Clive R. Symmons, op. cit.

Ibid.


Kamal Hossain, op. cit.

Ibid.

Ibid.

Ibid.

Ibid.

Ibid.

Ibid.

Ibid.

Agreement between the Republic of Korea and Japan concerning Joint Development of the Southern Part of Continental Shelf adjacent to the Two Countries, Article 28.
Article 2 stipulates that “nothing in this treaty and no acts of activities taking place while this treaty is in force shall be interpreted as prejudicing the position of either contracting states on a permanent continental shelf delimitation in the zone of cooperation nor shall anything contained in it be considered as affecting the respective sovereign rights aimed by each contracting state in the zone of cooperation”.

The method of unitization was developed to exploit onshore separate oil deposits in a consolidated manner. Unitization, referred to as unit operation, is the consolidation of separate tracts overlying a common reservoir so that many tracts can be operated as one. In terms of the geological structure of oil resources, unitization is necessary to preserve and control within the reservoir to recover the greatest amount of oil since the free-for-all form of extraction may dissipate the pressure within the well.


Ibid.

Agreement between the Republic of Korea and Japan concerning Joint Development of the Southern Part of Continental Shelf adjacent to the Two Countries, Article 23.

David Lerer, op. cit.

Agreement between the Republic of Korea and Japan concerning Joint Development of the Southern Part of Continental Shelf adjacent to the Two Countries, Article 26.


When a state has more than two maritime delimitation disputes with other states, it is considered one for clarity.

It is also referred to as the Emery Report since the survey team was led by Dr. K. O. Emery.

In 1974 the Commission was re-titled the Economic and Social Commission for Asia and the Pacific: ESCAP).


Ibid.

When the exploration contract expired in 1987 with no commercial discovery, both countries agreed to amend the Appendix of the Agreement to promote exploration activities and ease drilling obligations. As part of such purposes, the number of sub-zones was adjusted to six sub-zones of more or less equal size and the drilling obligations have been eased from eleven to seven in light of the international crude oil market situation of low oil prices then.

The 1974 South Korea/Japan Agreement, Article 2&3.

Ibid, Article 4, 5 & 6.

Ibid, Article 16.

Ibid, Article 17(2).

Ibid, Article 19.

Hazel Fox, op. cit.:42.

The 1974 South Korea/Japan Agreement, Article 27.