















regional autonomy era, there has been a wrong understanding of interregional spatial planning.

The upstream area that is the largest water supplier is left to think alone in formulating its spatial planning and supervising the behavior of the people – who usually prefer to farm seasonal crops or who often explore protected forests. In consequence, there is high sedimentation of the earth's surface at the upstream area, bringing sedimentation to the flowing river.

Meanwhile, downstream, the Regional Government is faced with disempowerment in managing their city's spatial planning and their citizen's activities. The river that flows at the center of the city is surrounded by buildings, thus there are no more open green spaces that function as safety belts. Strangely, these buildings often possess building permits. Worse, there are also illegal non-permanent buildings that jut into the river, narrowing the river's flowing area.

The government does not dare to act upon these illegal homes or buildings that unreasonably obtained permits. Worse, there is a high sedimentation rate and a lack of efforts to carry out countermeasures against the increasing amount of weed and the regular mounds of trash. These problems disturb the river's function as the media that channels water. Then, in the rainy season, the river can no longer function well, and the high debt of water causes floods.

In the regional autonomy era, there is already an emphasis on the importance of interregional cooperation. But at the practical level, there are still many regions that fail to fully understand it. It is difficult to carry out this interregional cooperation, especially when it regards environmental and natural resource management, including water management. There are still many conflicts in water management between regions.

There are many governmental policies at the national, provincial, and city/regency levels that contribute to the emergence of conflicts. Thus, it is difficult to resolve the water resource conflicts that occur. If there are categorizations, these policies tend to be directed at various forms of pragmatic orientations, including economic orientation, privatization, unsynchronized legal regulations, regional egos, and lack of a just and even distribution of water resources, which are described as follows:

**First**, is economic orientation. This includes the conflict that involved the Surakarta City Government and Klaten Regional government, as well as the Surakarta government and the Karanganyar Regional Government. It started from

the Decrees of the Klaten Regent and the Karanganyar Regent that drastically increased the price of every cubic meter of water, causing continuous conflicts.

**Second**, the spirit of privatization. Almost all conflicts that happen in the Surakarta area are inseparable from the interest in the privatization of water resources. It includes the conflict between PT. Aqua and the Klaten people, where the company obtained the permit to exploit a local spring, caused a drastic decrease in water debt for the people. There is limited water for the people's farms, making the people worry that their crops will fail.

**Third**, unsynchronized legal regulations. A policy model that causes conflicts is apparent in the conflict between the Surakarta City Government and the Klaten Regional Government. The Surakarta Mayor argued that there is no legal basis for the Surakarta government to have to pay for the water. Even, the Surakarta Mayor has repeatedly stated that the main problem is not the amount of money that has to be paid, but whether or not the legal basis that becomes a reference of this decree exists. Even though there are already related regulations, for example, the Regional Decree of the Central Java Province No. 7 of 2002 on Taxation on Surface Water Intake and Usage and Klaten Regional Decree No. No. 7 of 2012 on the Third Party Contribution to the Region. The legal basis for interregional cooperation of Subosukawonosraten is regulated in the Inter-City/Regency Common Regulation No. 10/2001, No. 590/398/2001, No. 42/2001, No. 5/2001, No. 54.a/2001 also No. 590/1414/2001 which were signed on October 30<sup>th</sup>, 2001. This legal basis is then extended with the Common Regulation of Surakarta, Boyolali, Sukoharjo, Karanganyar, Wonogiri, Sragen dan Klaten Mayors/Regencies No. 11.D/2006, No. 36/2006, No. 26/2006, No. 8/2006, No. 26.a/2006, and No. 1/2006 that was signed on October 30<sup>th</sup>, 2006 and that applies forever. Among the things that this Common Regulation stipulates is cooperation in the clean water sector.

**Fourth**, the regional ego becomes another cause behind water-related issues at Surakarta ex-Residency. Since 1998 or post-Reformation, using the footsteps of regional autonomy, the areas that have water springs have the right to manage the water resources that they have. This authority places them in a highly profitable position, both economically and politically. Not all aspects of regional autonomy support the existence of water resource management in the regions, one of them is how regions do not have the authority to manage water resources that originate from watersheds.

**Fifth**, there is an uneven distribution of water resources for the people. It is a fact that the case of uneven distribution causes water resource conflicts. This case has involved conflicts between farmers and also between farmers and the water irrigation managers. This triggers protests or even prolonged conflicts.

**Sixth**, regulation introduction is seldom held. This leads to the non-compliance of business owners, the government, and society. Regulations are made to create order and peace in a structure, [23]. Some citizens of Surakarta City suggest that they have made peace with the condition and regard that the existing regulations cannot give them a solution to preventing water resource conflicts around them.

**Seventh**, there needs to be regulations that not only regulate law enforcement but also those that become a solution to water resource conflicts. These regulations can be made like a regulation that adopts the principle of sustainable city development.

## 4 Discussion

Concerning water resource management in Japan, [24], to support the agricultural sector, the water supply is taken from rivers, groundwater, and water reservoirs. Irrigation network facilities are developed to distribute the water to agricultural locations. The farmers have a high awareness of operating, maintaining, and using water. Thus, there are seldom any conflicts in the water resource usage. In implementing the operational, maintenance, and water usage activities, the farmers of each area (*chiku*) form organizations that aim to manage and regulate the water assets, named "*tochikairyoku*". This organization associates with water-using farmers whose scope of responsibility includes carrying out operational, maintenance, and water distribution managerial activities. In the amendment of the law that regulates the water resources in Japan, this organization has legally been accommodated, [25].

a research entitled "Watershed of Begawan Solo Upstream above Gajah Mungkur Dam, Wonogiri", showed that the Begawan Solo upstream watershed is highly strategic, considering that the area watered by the Gajah Mungkur dam is very extensive. Its role is crucial in the Regional Autonomy era, as the water flows in several regions. It is the mainstay to water the agricultural land in Sukoharjo, Klaten, Surakarta, Karanganyar, and Wanogiri Regencies. The watershed development is directed at developing and rehabilitating facilities to control floods and erosion, supply clean water, and increase

crop production. But, behind that, there are conflicts of interest in water allocation and distribution, that involve different water user sectors that involve several cities and regencies along the Begawan Solo watershed, [26].

To resolve the conflicts of interests related to interregional water allocation and distribution, the regulations and the usage of water at the Gajah Mungkur dam and the Begawan Solo watershed cannot be separated. On the contrary, it should be holistically interrelated based on the ecosystemic approach. There cannot be partial regulations on the watershed areas from the upstream up to the downstream, as they are interrelated. Thus, to prevent prolonged interregional conflicts of interest, in the era of regional autonomy, there needs to be a centered regulatory policy with coordination and authority divisions between the Central, Provincial, and City/Regency Governments, [26].

Decentralization opens up the chance for interregional conflicts if these regions tend to be economically unequal, [27]. This may be seen from the low Regional Original Income, the income of the real sectors, and social inequality, seen from the high poverty rate. Apart from that, the high population rate also highly burdens the regions to push socio-economic development. Apart from the factors above, lack of coordination and unclear legal regulations also have the potential to create conflicts in interregional water usage or water distribution. The current decentralization policy still potentially causes water-related conflicts; thus, the government should formulate a clear legal regulation that is agreed upon by the related parties.

The ecoregional approach is a new paradigm in spatial developmental planning, [28]. This approach is one of the pioneering thoughts of sustainable development. It is understood that the development planning theories or concepts in an area keep on shifting according to the changes in the people's social, economic, cultural, and political conditions. In the middle of the shift of developmental concepts or approaches in the context of natural resources, including those of water resources, there is also the emergence of conservatory concepts, whose approaches are no longer aimed merely at achieving economic welfare, but have shifted towards the direction of the sustainable developmental concept. The essence of sustainable development is to internalize environmental aspects in planning developmental activities. The Sustainable Areal Planning Approach is an implementing instrument of development in the current era. It may be manifested through the Ecoregional Approach. The main characteristic of this approach is the planning

that is adapted to ecologic boundaries. It follows the natural characteristic similarities as well as natural phenomena – or ecoregions – instead of following administrative boundaries, [25].

Law No. 32 of 2009 on Environmental Protection and Management has placed the ecoregional model as a principle. As a consequence, it must be implemented as a basis that is complied with by regional governments in formulating policies on environmental protection and management, including policies on regional water resource management. The ecoregional principle means that environmental protection and management must consider characteristics of natural resources, ecosystems, geographic conditions, local people's culture, and local wisdom.

The ecoregional approach places water resource issues in a more extensive and more comprehensive scope, that does not acknowledge administrative areal boundaries. Thus, the water resource management issues cannot be understood based on the interests of regional egos, as its management is interregional.

The efforts to resolve water resource issues with the ecoregional approach are carried out by involving related areas, namely regional areas and especially upstream and downstream areas. Regional governments must have a mutual understanding to think about water management, based on a mutual agreement, written in the form of a memorandum of understanding between regional governments.

The water resource management with the ecoregional approach has attracted the attention of many. It is carried out by connecting water resource management issues with environmental ones. The water management that produces water-related services (in the downstream area) has the responsibility to carry out areal conservation (in the upstream area) for the environmental services it provides. This is so that the water – as a source of life and as a life necessity – may be sustained.

The ecoregional approach may be carried out through some steps. It starts by creating a mutual agreement between regional governments, that contain the system of water resource management, the mutual responsibilities, the rights and responsibilities of each party, and also the compensation obtained by the regional government at the upstream area. This mutual agreement is then implemented by each regional government. The legitimization is in the form of Regional Decrees that regulate the imposition of responsibilities and the rights of interregional water resource

management, beyond administrative areal boundaries.

In formulating a policy on water resource conflict management, the ecoregional approach must be supported by the society's involvement through participative approaches. In formulating the water resource developmental laws, the thoughts that are rooted in the participative approach must be accommodated. It is an implication of the strong efforts in implementing a democracy-based developmental model. Because of that, the legal renewal that will be implemented must position the law in a social community and with humanity as its main focus.

The participative approach is a deconstruction that places society in a detrimental position in managing environmental issues. In the legal sector, the participative approach is apparent in formulating regulations, implementing laws, and monitoring resolutions of natural resource disputes. Democratization in the law formulation is characterized by the entrance of the people's spirit. It is manifested in various forms, both directly or indirectly through houses of representatives. The participative approach places society as a subject in determining the management and the resolution of water resource issues. It is born from the demands of the democratization spirit that places the society as the holder of sovereignty.

Socio-political processes in this state have deconstructed various buildings and orders. They have been liquidated to their original form, namely "the people". The people have liquidated the Houses of Representatives and the election mechanisms of leadership. Slowly, Indonesia experienced a change from this deconstruction– from an artificial society to something more natural, [29]. This spirit of pure, people-based democracy becomes the great current that will push change in this country, including legal changes, especially in water resource management.

In the future, to propose suggestions for carrying out legal renewal related to natural resources and the environment, the people's autonomic power must be further accommodated. Organizations of interest, such as non-governmental organizations and environmental organizations must be placed in a better position to encourage the growth of civil society, [30]. Based on that, the society must be encouraged and they must be filled with the spirit to increase and strengthen their bargaining positions, including in resolving conflicts that happen in the diverse and complex communal life.

The legal policies on water resource development must place the society at greater access to strengthen the people's autonomy, to reach a civil

society. Social access includes access to public information, access to participation, and access to justice. The people's rights to the water resources must be better accommodated. Then, the state's obligation to guarantee the fulfillment of that right must be better implemented.

## 5 Conclusion

The water resource management conflicts at Surakarta ex-Residency have simultaneously increased with the increase of the water demand. Vertical water resource management conflicts happened between the society and the companies that have control over water and springs, due to profit-oriented water management policies. Apart from that, there are horizontal conflicts, such as those that happened between Regional Governments as a result of an inaccurate understanding of regional autonomy, that resulted in water resource management that is based on regional egos.

The governmental policies that resolve water resource management conflicts at the city/regency, provincial, or central levels contribute to causing water-related conflicts. This is because these policies are directed to various pragmatic orientations and regional egos, namely: (1) economic orientation, (2) privatization, and (3) the unsynchronized laws that regulate water resource management between regional governments that prioritize the interests of their regions.

The water resource conflict management policy with the ecoregional approach is carried out through several steps. There must be a mutual agreement between the Regional Governments, which is then followed up by each Regional Government. The legitimization is in the form of Regional Decrees that regulate the imposition of responsibilities and rights in water management. The water resource management policies must give greater access to the people. The people's access accommodates the people's rights and the government's obligation to guarantee the good fulfillment of those rights.

Then, it is suggested that there must be: (1) A mutual agreement between Regional Governments in the Surakarta ex-residency area must be formulated in managing water resources. It includes the usage of water resources and their preservation through conservation that must be carried out by each regional government; (2) There needs to be a review of the profit-oriented water resource management policies from the regional governments that direct to privatization, considering that the water resource is a limited non-economic resource, meanwhile, the current water resource management

is profit-oriented; and (3) The regional government needs to have the courage to take over the water resources that have so far been managed by private-owned entities and that do not have orientation for social welfare. In this case, the state-owned business entity, namely the Municipal Waterworks, must take over its management. This may also be carried out by partnering with private-owned entities, with the Municipal waterworks as the more dominant party in managing the business or in obtaining profit. All this is aimed at achieving maximum welfare for the people.

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### Nomenclature:

| No. | Abbreviation    | Meaning                      |
|-----|-----------------|------------------------------|
| 1   | m <sup>2</sup>  | Meter square                 |
| 2   | m <sup>3</sup>  | Cubic meter                  |
| 3   | km <sup>2</sup> | Kilometer square             |
| 4   | km <sup>3</sup> | Cubic kilometer              |
| 5   | Rp.             | Rupiah (Indonesian currency) |

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- Budiono: Conceived the research and provided materials and data for the research.
- Marjanah: Provided materials and data for the research as well as designed the methods.
- Yuspin: Selected research data as well as analyzed and interpreted the data.
- Hernanda: Analyzed the data and provided a description of the results.
- Absori and Mirielle: Wrote the introduction and arranged the script according to the instructions.
- Nurhayati: Analyzed and interpreted the data and wrote the paper.
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