Inanco a local wisdom in endemic fish species conservation in lake Poso

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Abstract. Lake Poso is one of the ancient tectonic lakes in Central Sulawesi and is also the main habitat for several species of endemic fish that can only be found in this lake including bungu Poso Mugilogobius amadi (CR) and Buntingi half-duck Adrianichthys kruyti (CR). The threat of changes in catchment areas, pollution, geological phenomena, and overfishing make these endemic fish species very difficult to find. During the implementation of the Indonesian Bird Program with the Imunitas Association, one of the activities was the creation of a semi-natural habitat for fish and other aquatic animals, namely “inanco”. This concept departs from the traditional model but with a touch of modernization that is making rocks with aisles at the bottom of the lake and stacking the wood on it so as to allow for the development and protection and habitat of fish, Sogili (eels) and other aquatic animals and plants. This Inanco is made at a depth of 3-5 meters in a lake with good sunlight intensity and penetrates the bottom of the lake in accordance with hereditary knowledge. This concept was made for the preservation of Adrianichthys kruyti bunting fish, Bungu Mugilogobius sarasinorum, and several small fish species, shrimp and crabs and even snails. As a result, one of the species that is rarely found, Bungu Mugilogobius sarasinorum, is now beginning to be encountered frequently in Inanco locations around the mouth of the Meko and Salukai estuaries on the shores of Lake Poso. Further observation is needed on the impact of “Inanco” practices on endemic fish species in Lake Poso and the importance of identifying local wisdom for the conservation and conservation of endemic fish species in Lake Poso.

1. Introduction
Poso Regency consists of 19 districts, 28 villages and 142 villages with an area of 8,712.25 km² and a population of ± 240,812 people in 2018 [1].

Lake Poso is the third largest lake in Indonesia after Lake Toba in North Sumatra and Lake Towuti in South Sulawesi with an area of 368.9 km² (36,890 ha) with a panoramic coastline 127 km at an altitude of 650 meters above sea level, a maximum depth of 384.6 meters, average depth average of 194.7 meters and brightness reaching 10 meters with high biodiversity and the existence of several research references that indicate the existence of endemic fish species in Lake Poso.

2. Method and Approach
Participatory Conservation Planning (PCP) is used to develop participatory conservation area management plans. PCP identifies conservation priorities in an area in designing efficient and
effective conservation strategies. Facilitate the analysis of the human context in conservation and provide indicators of success.

PCP views conservation issues from a general human perspective by examining the area (system), analysis of changes that occur in the system and the stresses and sources of pressure (sources) that cause the changes to occur. A broader understanding of the community is very useful in the analysis of the parties (stakeholders), as well as in designing strategies that are more likely to achieve success ends the indicator.

One of the strengths of PCP lies in its flexibility, where information and prejudices that grow in the process are recorded clearly, in addition, the process can also be repeated routinely, and can also be updated with new information and discoveries. Through the involvement of partners and stakeholders, the PCP process also produces strategies that are more likely to succeed.

Just like the people who live in and around the forests in Indonesia, so do the people around Lake Poso. Communities have very high interests in the region, for example in terms of claims to territorial rights or in terms of local economic links. Where livelihoods are still dependent on natural resources.

The need for community participation in natural resource management is no longer negotiable. As the largest stakeholder, the community around natural resource centers is the group of interests that most determines the success or failure of conservation efforts in an area.

Programs that use the PCP method were carried out in 4 villages namely Meko, Salukai, Owini and Uranosari villages, Pamona Barat District - Poso District to achieve Co-Management of the Lake Poso Watershed. The program is organized into two program components namely; (1) Collaborative management of watersheds, (2) Community empowerment in watershed management.

The implementation of community PCP identifies systems that they think are important and are identified up to 8 systems per village, then all systems are assessed for trends and behaviors by looking at their condition (five to ten years before - now - and the conditions if they continue until 5 or 10 the coming year, looking at the pressure on the system that causes change, the parties involved that influence the system, then formulate strategies for what needs to be done to reduce the pressure and achieve success. Then generate recommendations for some program activities to restore or maintain existing system conditions and even improve existing systems.

3. Results and Discussion
The recommendation of the PCP result states that there is a system that changes both the quality and quantity of the system related to the management of the Poso Lake. One of them is no longer applied to local knowledge of Inanco.

Inanco is a natural habitat for all fish and animals and other aquatic plants that are made for their natural habitat and breed to ensure the availability of fish stocks, sogili and other lake water animals and plants in the area. This location is a location that has ideal conditions for the development and protection of fish from other predators in the lake by piling rocks and dead wooden sticks at the bottom of the lake. The wood and rocks that are piled up will eventually be overgrown with moss and other plants and water so that it becomes fertile. This condition causes the population and growth of fish, sogili, and other lake animals better than the old area in the lake and the availability to take is always available. Inanco was indeed protected and regulated for the benefit of the kingdom as a place for fish stocks and royal sogili and the village government at that time.

The collection will only be done when needed as during the harvest party "Padungku", when there are royal guests or guests at the beginning of the reign in Inanco area. Retrieval of time was also with traditional equipment in the form of pana (arrow), fish spear (sarompo), fish trap made from bamboo (bubu), catcher from bamboo (sango), using a hook / fishing rod and unique when fishing for endemic fish bungu Mugilogobius amadi (CR) by using finely woven rattan and fishing hooks on both ends of the rattan and fishing together with the boat during the monsoon season to collect the fish in that location as needed at that time. The location for making Inanco is always the same place until now.
Then this concept of local wisdom above then developed again but with a touch of modernization that is making Boronjong stone with passageways at the bottom of the lake and stacking the wood on it so that it allows for the development and protection and habitat of fish, sogili (eels) and other aquatic animals and plants. This Inanco was made at a depth of 3-5 meters in a lake with good sun-shining intensity and redeemed the bottom of the lake in accordance with the former location of Inanco in the previous royal era.

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This concept was made for the preservation of endemic species of Lake Poso, namely buntingi half-duck *Adrianichthys krutii* (CR) [2], bungu fish *Mugilogobius amadi* (CR), and several small fish species, shrimp and crabs and even snails.

The manufacturing process steps are:

**Preparation:**
1. Gabion weaving
2. Taking wood and stone
3. Transportation of gabion wire and wood

**Installation:**
1. Installation of retaining poles
2. Installation of boronjong at the bottom of the lake
3. Installation of wooden boards and beams
4. Laying the retaining stone on the beam board

Since this process was made in 2017, one of the species that has been stepped up is that the Bungu *Mugilogobius amadi* (CR) fish has now begun to have a lot of pupulation and is often encountered around the mouths of the Meko and Salukai rivers close to the Inanco location created by the Lake Conservation Group Meko and Salukai villages which are also accompanied by with the agreement of the village as a result of Participatory Conservation Planning (PCP) which one of the agreements regulates the use of environmentally friendly fishing gear and an agreement not to dispose of and wash the tankers and tools contaminated (poisons) pesticides, herbicides, etc. in the river as well as watershed and catchment areas protection agreements and even agreements its rehabilitation by reforestation and planting of river bank reinforcement plants for farmers bordering directly on the Meko river and Salukai river in Pamona Barat District and conducting periodic forest and lake health monitoring conducted by the Conservation Group in the village namely the "Bungu Lestari" des a Meko, the "Mahapi" group in the Salukai village, the "Soga Jaya" group in the Owini village and the "Dharma Lestari" group in the village of Uransari which is a Cepf program activity in collaboration with Burung Indonesia with the "Imunitas" Community Innovation Association as the implementor in 4 villages in the Pamona Barat District, Kabuaten Poso, namely the villages of Meko and Salukai in the coastal areas and the villages of Owini and Uransari in the upstream part that borders directly with the protected forest and Bancea Nature Tourism Park.

**4. Conclusions**
The preservation of local wisdom "inanco" is needed to foster the spirit of conservation and saving of Lake Poso because it directly protects the watershed and watershed management that contributes to the
preservation of the natural resources and ecosystem of the Poso lake KBA which is supported by the community, government and business enterprises.

The development of local wisdom is also a tourist attraction for the public and domestic and foreign tourists. Finally, "Inanco" can be preserved and provide opportunities for the growth and development of this endemic lake fish species and other lake animals in the future.

References

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