

ASAR: A Distinct Fishing Gear Used In the Cordillera Rivers

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Abstract

The Cordillera Administrative Region, dubbed as the “Watershed Cradle of the North” caters to 13 major rivers [1]. Five of which is being assessed by the National Stock Assessment Program of the Bureau of Fisheries and Aquatic Resources [2,3]. This study, under the BFAR-CAR NSAP was conducted to study the origin of the asar, a distinct fish trap being used in the Cordillera Rivers. It also wanted to determine the catch composition in six municipal landing centers identified. Data on the history and origin of the asar were obtained through interviews with fisherfolk in Abra, Kalinga, Benguet, Apayao and Ilocos Sur using open-ended questions. Data on fish composition and volume of catch were collected by NSAP-CAR data enumerators in six landing centers along the Rivers of Amburayan, Abra and Apayao-Abulug. The asar is also known as asal or kileb, a little difference due to the linguistic differences in the region. It is a passive and size selective but not species-selective fishing gear. It takes advantage of the increased volume of fish trapped during the rainy season. In Abra, asar was constructed based on basbasan – a tool used to separate rice grains from its stalk. In Benguet on the other hand was based in an old practice of filtering decaying plant materials in rice fields called asal. In Apayao, asar was introduced by Mr. Manuel Basilio, an Abrenian who migrated to Flora in 1964. NSAP data shows that 26 species of aquatic animals were caught by asar in the Cordillera Rivers in 2015. Asar as a gear contributed 5.5% to the total inland capture fisheries catch in 2015.

Keywords: Asar, Fishing Gear, Fisherfolk, landing center

Introduction

There have been limited studies on the fishing gears used by fisherfolk in the Cordillera Administrative Region [1]. CAR, being a land locked region, with a mountainous topography hosts 13 major river basins [4]. Its inland fisheries contributed 1, 035.74 MT to the Philippine catch in 2012. Its 13 major river basins have great water bearing capacities with an estimated drainage area of 18, 293 square kilometers suitable for water and energy exploration and other economic purposes [5].

The CAR comprises mostly of the Luzon Central Cordillera, a major geanticline mountain range. The area constitutes 139 mountains; the mountain ranges generally trend north-south to north-northeast. The region is drained mainly by Abra River in Abra and Mt. Province; Agno and Bued Rivers in Benguet and Baguio City; Magat River in Ifugao; Apayao, Chico, and Pamplona Rivers in Apayao, Mt. Province and Kalinga. As host to 13 major and principal river systems, the region prides itself as the watershed cradle of Northern Luzon. Most of the major river basins drain to regions 1 and 2. It supports different facilities like, irrigation, domestic use, and hydropower. Total drainage area is 25,634.38 sq.km [1,4].

CAR’s total land area is 18,293.7 sq. km., or about 6.1 percent of the country’s total land area. The predominant forestlands are used for agro-forestry, pastureland, and as production and protection forests. Roughly 10% of the region's area is devoted to agriculture [1]. Although the region is focused in agriculture, its major rivers also cater to different aquatic species and fishing becomes an alternative livelihood to the farmers of the region. The Bureau of Fisheries and Aquatic Resources-CAR in its National Stock Assessment Program conducts stock assessment in six major rivers in the Cordillera in the Amburayan River, Abra River, Apayao River, Ibulao River, Maragat River and Chico River [2]. NSAP in the region aims to evaluate the status of the riverine systems of the Cordillera.

Fishermen in these fishing grounds use different fishing gears in their capture fishing, however most of these gears are undocumented. In the NSAP study, an distinct fishing gear was learned to contribute to a 5.5 % of the total capture fisheries catch in 2015. This gear is locally called *asar*, asal, or kileb. In this study however, asar is used as the name of the fishing gear. The *asar* is a fish trap stationed in the water for a certain period of time where fishes are caught in a catch basin at the base of the trap. The fish when caught are naturally confined in a collecting unit from which escape is prevented by labyrinths and/or retarding devices such as gorges, funnels, etc. without any active fishing operation taking place [3].

The research aims to study the origin of the *asar* including its fish catch composition in six (6) municipalities identified in the Amburayan River, Abra River and Apayao River.

Materials and Methods

The study on *asar* was conducted in four fishing grounds namely the Amburayan River, Abra River, Apayao River and Chico River. The study concentrated in the municipalities of Kapangan and Atok in Benguet, Tineg, Tubo and Lagayan in Abra and Flora in Apayao. Data on landed catch and effort of the *asar* were gathered by data enumerators in the municipalities covered. These were collected based on the methodology of the National Stock Assessment Program methodology of collection [2]. Data collected in the municipalities were encoded in the NSAP database and later generated and converted into excel files for analysis. History, how it is used and its importance to fisherfolk were obtained through interviews with the fisherfolk of Abra, Kalinga, Apayao, Benguet and Ilocos Sur. Open ended questions were used during the interviews. Documentation on the building of the *asar* was collected by enumerators in the municipalities covered.

Results and Discussion

The *asar* is a distinct fish trap used to catch numerous fish species in the Cordillera Rivers. Fish traps are gears set or stationed in the water for a certain period, regardless of the kind of material used for their construction. These are gears in which the fish are retained or enter voluntarily and will be hampered from escaping. They are designed in such manner that the entrance itself becomes a non-return device, allowing the fish to enter the trap but making it impossible to leave the catching chamber [6-11].

Origin of Asar/Asal/Kileb

The *asar* is a distinct fishing gear in the Cordillera Administrative Region passed on from generation to generation of fishermen in the region [1]. However, there have been claims that the *asar* was introduced in the Cordillera by the Bago tribe and is originally found in the Ilocos Region.

In the municipalities of Sudipen and Alilem in Ilocos Sur, fishermen were interviewed on the origin of the *asar* in their area. Their accounts dictate that the *asar* or kileb as they commonly call it, started in the 1950s. However, it was eventually stopped in the 1980s due to the prohibition mandated by the Department of Environment and Natural

Resources because of the excessive use of forest trees in the construction of *asar* [4]. Accounts on the origin of the *asar* or asal or kileb differ from every province and fishing ground in the Cordillera.

Amburayan River, Benguet

In the Amburayan River, the asal, according to fisherfolk was passed to them by their ancestors. It started as an experiment when farmers thought of replicating the way they filter dirt and weeds from penetrating to their rice fields. This practice of filtering was called "*asal*" in the local dialect of the "*Kankanaeys*" meaning to filter. In replicating this practice in the fishing activity in the area, the name "*asal*" was retained; hence it is called so in the province of Benguet until now.

Abra River, Abra

Abra was once part of the Ilocos Region until its inclusion in CAR in 1987. It was this very reason, as explained by the fisherfolk of Abra

that there are claims that the *asar* originated in the Ilocos Region. Fisherfolk of Abra also claim that the *asar* was passed on to them by their ancestors. The *asar* in Abra was patterned with the "*basbasan*", an old instrument used in separating the rice grain from its stalks, way before the introduction of modern technology, the thresher. Fishing using the *asar* is still being widely practiced in the Abra River.

Apayao River, Apayao

Asar in the Apayao River is said to be introduced in 1964 by Mr. Manuel Basilio, 75 who hails from Abra. It was in 1964, when Basilio migrated in Apayao did he build an *asar* along the Apayao River in the municipality of Santa Marcela. Eventually, fisherfolk in the area adapted the *asar* as a fishing gear. Having started in the Sta. Marcela area, the *asar* in Apayao is now also being used by fisherfolk of the municipality of Flora.

Chico River, Kalinga

There are no certainties as to the origin of the *asar* along the Chico River. It already existed since the 1970s. Fisher folk in the area claim that as far as they remember, their grandparents would bring them to the Chico River where the *asar* is installed and they would help in handpicking the trapped fish. The name "*asar*" was already in place even before they were born.



Figure 1: An *asar* built along the Saltan River in Kalinga (photo by Naela S. Bilag)

Construction of Asar

The *asar* is made up of bamboo, hardwood tree trunks and branches, "*runu*" and cogon grass which are built to withstand the water current in the rivers. The bamboos are used as floorings and as sides of the *asar*. Hardwood tree trunks and branches and some matured bamboo trees are used as posts of the *asar*. Runu holds the posts together and the cogon grass are used as roofing of the little nipa hut built on the upper edge of the *asar*. The little nipa hut serves as a resting place for the fishermen who are waiting to collect the catch of the *asar*. Asar is built against the flow of the water in the river in order to trap fishes that swim with the water when the river gets murky during the rainy season. The lower part of the *asar* is designed to be wider than the upper part where the hut is set. When the rainy season arrives, water current becomes strong and murky and fishes lose control of their movement. They are then easily trapped in the *asar*. The fishermen would then handpick the fishes trapped in the *asar*.

The *asar* in Abra, Apayao and Kalinga is built individually along the stretch of the river. More often than not, there are a number of *asar*, five or more built in one setting in the river. In Kapangan and Atok in Benguet, however, fishermen build a single *asar* or *asal* as they commonly call it and subdivide it in three or more groups. The lower part of the *asar* which leads the water to the catch basin of the trap is measured to be ten (10) meters wide and two (2) meters long. Posts of the structure are measured from 50 cm to three (3) meters while the upper part where the hut is three (3) to four (4) meters wide. The flooring of the *asar* has spaces of one (1) centimeter. In Abra, the floorings are removable so that the fishermen could recycle them in the next construction but in Benguet, the flooring of the *asar* are nailed to the main structure of the *asar*.



Figure 2: Building of *asar* along the Abra River in Brgy. Pang-ot, Lagayan

Asar is constructed during the dry months of the year especially the summer months. Fishermen take a few weeks to a month to construct one *asar*. The construction of *asar* costs fishermen Php 6, 000.00 to Php 10, 000.00. In Apayao, however, the fishermen can sell the *asar* they built to other fishermen with a cost of Php 21, 000.00. Figure 3:



Figure 3: The *asal* in the Amburayan River in Cuba, Kapangan, Benguet (Photo by Mary P. Tauli)

Summary of Catch of *Asar*

Construction of the *asar* take a lot of effort and may cost a good amount of money but fishermen still build one because of its voluminous catch during the rainy season. *Asar* is a non-selective gear catching all fish that pass through its floor. In 2015, 27 species of fish and 5 species of crustaceans (freshwater prawns) were caught

in the *asar* with a total catch of 3.18 MT. *Asar* contributed 5.56 % of the 2015 total catch of capture fisheries in the Cordillera. Poblacion West in Flora, Apayao contributed the most of the *asar* catch in 2015 at 52 % of the total catch. Poblacion West, Flora 52% Kili, Tubo 20% Cuba, Kapangan 18% Naguey, Atok 5% Caganayan, Tineg 3% Poblacion, Lagayan 2% Catch

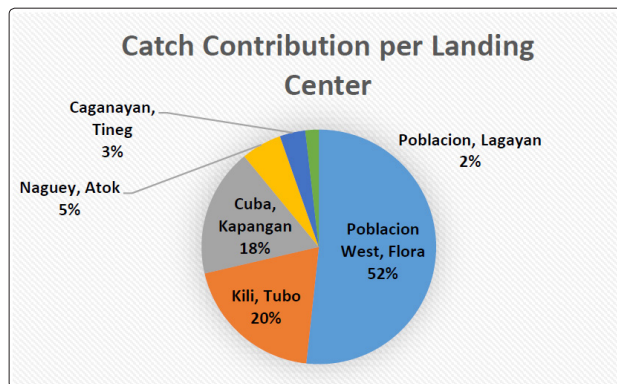


Figure 4: Catch contribution of *Asar* per landing center in 2015

From the 27 species of fish trapped in *asar*, there are six species belonging to the family *Gobiidae*, three species to family *Anguillidae*, two species to family *Mugilidae*, and one species each to the families of *Ambassidae*, *Carangidae*, *Cichlidae*, *Cyprinidae*, *Eleotridae*, *Kuhliidae*, *Leiognathidae*, *Poecilidae*, *Rhyacichthyidae* and *Zenarchopteridae*. Five species of the Phylum *Arthropoda* caught in the *asar* belong to the families *Atyidae* and *Palaemonidae*. There are 4 species belonging to the family *Palaemonidae* and one species belonging to the family *Atyidae*. In 2015, the *A. melanocephalus* contributed the most with 50.66 % of the total *asar* catch or 1.611 MT while *R. aspro* contributed 19.72 % or 0.627 MT.

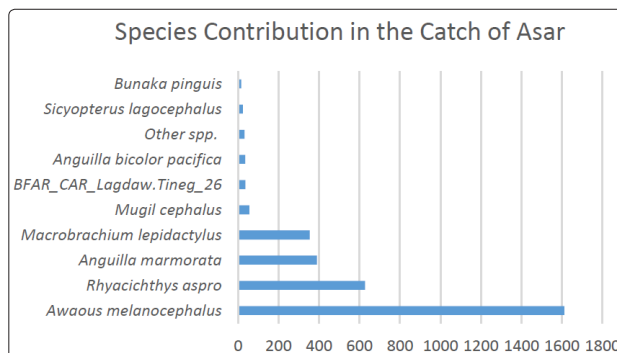


Figure 4: Species contribution in the catch of *asar*

Table 1: Fish families and count of species caught in the *asar*

Family	No. of Genus	No. Of Species
Ambassidae	1	1
Anguillidae	3	3
Atyidae	1	1
Carangidae	1	1
Cichlidae	1	1
Cyprinidae	1	1
Eleotridae	1	1
Gobiidae	5	6

Kuhliidae	1	1
Leiognathidae	1	1
Mugilidae	2	2
Palaemonidae	3	4
Poecilidae	1	1
Rhyacichthyidae	1	1
Zenarchopteridae	1	1
Grand Total	25	26

Conclusion

The *asar* is a distinct fishing gear used in the Cordillera Rivers. It is a passive and species selective fishing gear. In order to properly manage the fishing gear, further study on the effect of *asar* in the environment needs to be conducted. At the same time, further analysis on the length-weight data of the species caught is better to further understand the effects of the gear on the species caught.

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