D.P.I. TROUT FARMING IN THE SOUTHERN HIGHLANDS

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INTRODUCTION

The Department of Primary Industry's trout farming project in the Southern Highlands was started in 1972 and is now coordinated by the Provincial Fisheries Officer there, John Bado. The aim of the project is to help to improve the nutritional status of the people of Papua New Guinea by stocking suitable rivers with trout which will provide a good source of protein when caught and eaten by the local people.

There are two main parts to the project:

1. the hatchery at Mendi;

2. the trapping station at Komea.

THE HATCHERY

The function of the hatchery is to hatch trout eggs and raise the fish until they reach fingerling size, four to six weeks later. At this stage, they are ready to be released into suitable rivers, ponds and streams throughout Papua New Guinea.

Between July and October of each year, live trout eggs are imported from Australia. These eggs are called 'eyed ova' because, at this stage, the eyes of the fish inside the egg can be clearly seen as two black dots. The eyed ova cost K30 per 1000 and are flown to Mendi on ice inside an insulated container.

Cooking fresh fish for dinner

Before the eggs arrive at the hatchery, large ice blocks are made for use in lowering the temperature of the hatchery water so that it will be the same as that of the newly arrived eggs i.e. 4-8°C. If the temperature is not the same, then the sudden change when the eggs are put into the water could kill them. When the eggs arrive, they are carefully transferred from the trays in which they were packed to baskets inside troughs in the hatchery. Clean running water of pH 7 (neither acidic nor alkaline) passes continuously through the troughs at a rate of 45 *l*/min. This flows in through the perforated bottoms of the baskets, which are held firmly in place, and out through their sides. Gradually the water temperature is allowed to increase until it is the same as that in the local rivers and streams (15-20°C) and no further cooling is needed.

Most of the eggs hatch about eight days after arrival during late afternoon or in the evening when the water is warmest. The hatching is completed within 48 hours.

The newly hatched trout are called 'sack fry' because they carry all the food they will need for the next eight days in a sort of bag - called a yolk sack - which is an extension of their gut. Just before this food has been used up, the fry are transferred to clean troughs and start to feed on a commercially available, artificial food which is spread on the surface of the water.

When the fish reach the fingerling stage, four to six weeks after hatching, they are distributed for release into rivers, streams, and ponds in various areas of the country. The fish are transported to release areas in plastic bags inside insulated boxes. They must be kept away from heat and light and must be handled very carefully during transportation. When the fish reach their destination, they are released as early in the day as possible when the water temperature is lowest.

Releasing fingerlings into a pond

Trout fingerlings have been distributed to a number of places in Enga, Western Highlands, Central, Morobe and Chimbu Provinces and, according to John Bado, these fish have bred successfully in at least half of the rivers which have been stocked so far.

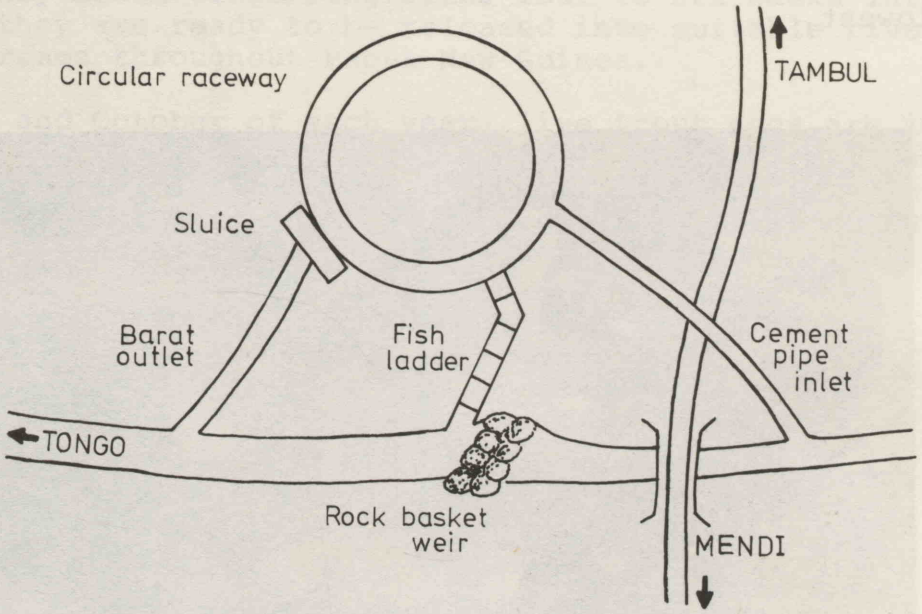
THE TRAPPING STATION

The trapping station has recently been established at Komea in the upper Mendi area with the aim of producing eggs from local trout and so reducing the need to import eggs from Australia.

The station is built near the banks of the Komea river and part of the river water is channeled through it. Trout swim up the channel into a circular section where they are caught by draining the water away. The ripe sperm and eggs inside the mature male and female fish are squeezed out by hand (stripped) and are mixed together to allow the sperm to fertilize the eggs. The fish are then released and the fertilized eggs are sent to the hatchery. In addition to the hatchery at Mendi, a new one is now being built at Komea to take advantage of this local supply of eggs.

FUTURE DEVELOPMENTS

There is still plenty of scope for further expansion of the trout farming project. D.P.I. is now hoping to get local people to set up their own small trout farms raising fingerlings in ponds to a size at which they can be sold as food.



Plan of the trout trapping station at Komea

Local man with a trout in the circular section (raceway) of the channel at Komea trapping station

The steps in the channel make it easier for the trout to swim up into the trapping station against the current. This part of the channel is called the fish ladder.

The new hatchery under construction at Komea