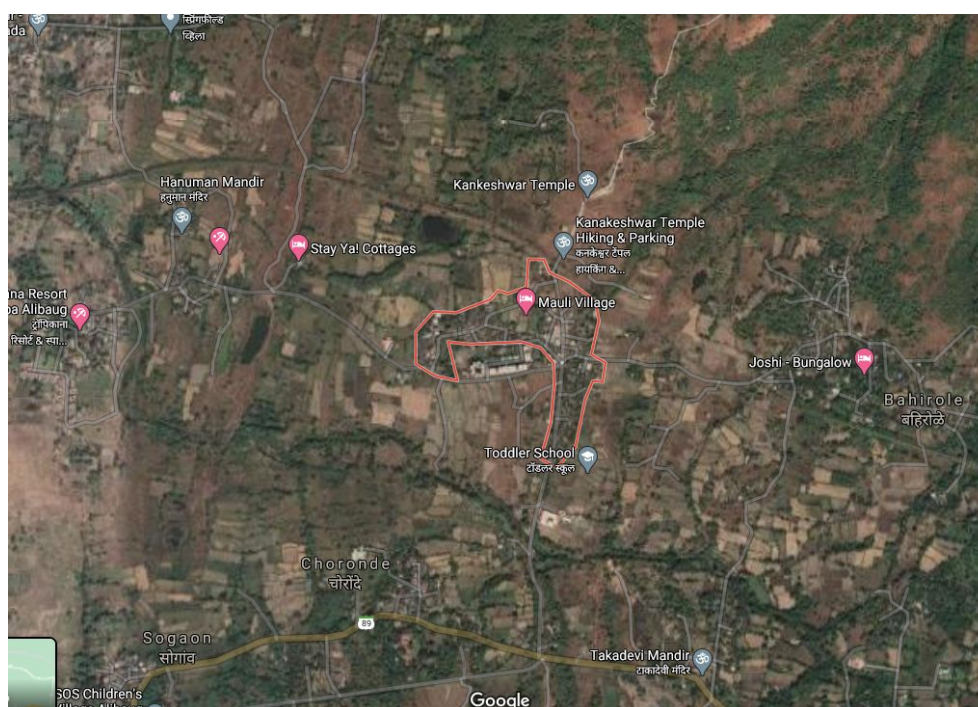


## Food Production and Consumption in a Gram Panchayat Case Study Description

This is a case study description under the “आपले प्रश्न, आपले विज्ञान” initiative of Unnat Maharashtra Abhiyan (UMA), a joint program of Govt. of Maharashtra and CTARA, IIT Bombay. The initiative aims to convey to students that Science is a method of studying the reality around us. It is the systematic documentation of a problem, uncovering its aspects and moving towards solving them. An important output of such People’s Science is a well-organized factual report which can be useful to residents, elected representatives, regional agencies and to other students and teachers.

The objective of this particular study is to study the “food balance” in a given Gram Panchayat (GP), i.e., what do people in a village produce and what do they consume. The gap between this is either filled by the Public Distribution System (PDS) or must be bought from the market.

An important component of food is the staple crop. This is rice, in the case of Kokan, but it could be *jawari*, *bajri* and wheat for other areas of Maharashtra. Let us begin with Kokan as an example. We would like to estimate how much rice does a village produce and how much does it consume. As an example, let us take the village of Mapgaon (Census Code 554017 (2011), Pin Code 402201), in Alibag taluka of Raigad district. A map is shown below.



From the 2011 census data, Mapgaon has a population of 992 in 252 households. The total area of the village is 262 hectares. By the data on the Raigad District webpage, there is a PDS shop in Mapgaon (details below).

The study will be organized to estimate the supply and the demand for rice. The basic method will be of sampling and interviews using questionnaires. Based on the results of the sampling, we will estimate the supply and demand. We will also examine if it is possible to enhance supply and improve food availability in Mapgaon, and analyse the various factors which impact the two.

We must begin by informing the village of our study. For this, we must send a letter to the Gram Panchayat office informing them and requesting their cooperation. Our next task is to verify the above key data items, i.e., area, population and households and update these. This can be done by contacting the Gram Panchayat office.

Let us begin with the supply side. As mentioned above, we will focus on two supply sources:

- Local agricultural production.
- PDS.

Note that the local *kirana* store is not a part of our measurement. It is assumed to be a part of the larger market from which people may buy rice and other food items.

To estimate production, we will sample land under rice cultivation. For this, the first step is to obtain (i) total agricultural land, and (ii) land under rice cultivation. This data should be available from the तलाठी or कृषी सहायक. The next step is to obtain the list of farmers who have sown rice, and the area under rice cultivation. From this data, we must prepare a list of farmers to interview. The objective is to record their production and various factors which influenced it. We will also record how they disposed of their rice, i.e., sell to the market or save for self-consumption.

Some important factors to consider:

- How does the yield, i.e., quintals/acre for a particular farmer compare with other farmers within the village, and the taluka average.
- How many people from his/her household participated in farming.
- How were the monsoon rains and how did that impact his/her yield.

Moving to PDS, we must understand the various types of ration cards and their entitlements in terms of rice. We may then visit the PDS shop and see the break up of households in terms of these different types of cards. We may then compute the total entitlement and compute the actual uptake of rice from the shop.

We now move to consumption. Given that there are 252 households, if we decide on a sample of 10%, we get 25 households. We use the household list from the gram panchayat office and select about 30 households at random. We must make sure that the random sample does cover all *padas* of the village.

We will then conduct detailed surveys of these households and understand how much rice they consume for the year and its sources, i.e., their own produce, through the PDS shop or the market. We will also record the difficulties that households face.

Again, possible factors to consider:

- Is the household per-person consumption below the village average? What could be the reasons?

- Are they supplementing their diet with other staple grain or other foods?
- How important is PDS to the household consumption?

We can now come to the final part. This is aggregating the supply and the demand data and preparing the supply-demand numbers. This may be compiled in a report which presents the rice scenario and the factors influencing production and consumption. We may then make some interesting observations or useful suggestions for the residents, local or regional agencies and others.

This study helps us understand how to measure nutritional status of a community and its relationship with farming, support from the state, the role of money.

Details:

1. Fair Price Shop: “शारदा महिला बचत गट”, contact संजय शिंदे, 9921054958.