


Discussion of Rodent KAP survey results + general knowledge

Kumharra & Dhamanpani in Mohgaon
Paudi and Dudhera in Samnapur



Outline

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2. rodent species
3. rat damage
4. what attracts rodents?
5. population dynamics
6. rats and diseases
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8. cultural perceptions
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1. General information villages

- Main livelihood sources: agriculture, labour work (MGNREGA, Out-migration), Panchayat related work, Livestock rearing (goat, pig, chicken), skilled work, non-timber forest produce (NTFP) (e.g. mahua, tendu).
- rats are considered a serious problem
- most rats occur in homestead and fields and cause damage in both

What	Kumharra	Dhamanpani	Paudi	Dudhera
Tribe / caste	Baiga tribe and OBC	Gond tribe	Gond and OBC	Gond and OBC
Number of Households	236	85	120	72
Average household size	4-6	4-5	5-6	4
Average land holding size	3 acres	1-2 acres	2-3	1.5-2 acres
Total respondents (male – female)	11 (3-8)	16 (3-13)	10 (2-8)	8 (0-8)
Age range	28-60	24-50	30-60	25-40



2. Rodent species

- The **Tharela/Tareli rat** (likely the *Bandicota bengalensis*, lesser bandicoot rat) was called the 'boss of the rats', the strongest rat around that can even fight snakes.. It is a large rat, lives alone, is active at night and weighs 250-500 grams. One animal itself can destroy 20% on a 10 decimal (1 acre = 100 decimal) land. It does not only eat whatever it cuts, it stores a lot of food in the burrows that can be up to 3 feet deep. Out of 100 cuts it may only eat 10, that other 90 is stored in the burrows. After getting the harvest into the storage, they see Thareli the most. All the rice is put in heaps, there nearby the Thareli have their burrows.
- **Katheli species** (likely the Indian gerbil, *Tatera indica*) is found in the forest, they live in groups, and are night-active. Its belly is white, the upper is light brown, with a white tail. They can make a very big hole and pierce holes in foundations of houses. Ravi is their season, they hide under bushes or in the field they make a nest, in nov/dec they are seen the most.



- **Chaura (soft furred field rat, *Millardia melitada*)** is also found in the forest and is night-active. They have a white tail, resemble Kotheli, but are a bit smaller in size. They live under small bushes. Mostly found in fallow land on the edge of forests. Chaura is there in all seasons. After brick houses are made instead of mud houses, they can't get through and it's less, but in mud houses it is too much. They break up sleep of people, at night they make those chu-chu noises. When people find a chaura in a food drum, the chaura can't get out, then people do turning inside the drum and the chaura will die.
- **Gharwala or Ghareli**, also called chuha (**likely the house rat, *Rattus rattus***), the most common rat to see. King of the house, very clever rat.
- **Indian bush rat, *Golunda ellioti*** is locally called a jungle rat.

- **Chote** (likely the house mouse, *Mus musculus* / *Mus domesticus*), very small in size but they can cut the stems of paddy rice.
- **Ghuus (could be Larger Bandicoot rat??)**
the biggest rat at the house. it comes from a hiding place and then enters the Kothi, it stays inside and eats, they can finish everything. It is at equal competition with cats. It has a fat moustache, is bigger in height than other rats, but looks similar to Thareli, though Ghuus is slightly fatter and bigger.

- Other forest species include: **Bhaisadal** and Other species mentioned are: **Gharuli**, (*Suncus murinus*), **Bandrachote**.
- **Chuchundar (chu chu)** (*Suncus murinus*), is shrew.
- **Baanskata** a forest rat species. Literally it means “bamboocutter” these are rats that can cut the bamboo from the roots, you see them in bamboo only.

Additional info Ghuus

- Ghuus does not come a lot, but if it comes it can break the walls, it even caused 1 house to fall. It takes out dust around it, that is how it is identified. They create such big holes in the bunds, this breaks the bunds in monsoon. They stay in the field. It disturbs the people a lot, the damage caused by Ghuus.
- The food they take into the burrows then they close the burrow from the inside with soil.
- They create burrows everywhere, you don't know where they are. in 2021 they flooded all the burrows with a waterpump in Paudi, to destroy all burrows. They caught an entire tub of rats. They did this right after the rice harvest, before the ploughing for the ravi season.

3. Rat damage

- frequent damage both at home as in the field
- highest damage during harvest time of kharif season (october - november) and bari season (March-April)
- household items damaged: clothes, papers, electric wires, floors, unbaked walls, plastic drums and food containers. And rats sometimes bite small chicks.

Kumharra village

#	Crop	Normal produce (kg)	Lost produce (kg)	% loss	Price/kg	Monetary loss (INR)
1	Maize	350	175	50	9	1575
2	Paddy	500	150	30	13-14	2100
3	Pulses	350	100	29	45	4500
4	Millets (kodo)	250	50	20	18	900
	Total	1450	475	32,25		6975

Dhamanpani village

#	Crop	Normal produce (kg)	Lost produce (kg)	% loss	Price/kg	Monetary loss (INR)
1	Maize	200	30	15	11	330
2	Paddy	140	35		13	455
3	Millets (average kodo and kutki)	150	45	30	34	1530
4	Pulses			25		
	Total	490	110	23.75		2315

Paudi village

#	Crop	Normal produce (kg)	Lost produce (kg)	% loss	Price/kg	Monetary loss (INR)
1	Paddy rice	1200	550	46	17,5	9625,0
2	Maize	150	35	23	32,5	1137,5
3	Tomato	900	300	33	20	6000,0
4	Matar / Chana (chickpeas)	1000	15	2	35	525,0
	Total	7050	900	22,56		17287,5

Dudhera village

#	Crop	Normal produce (kg)	Lost produce (kg)	% loss	Price/kg	Monetary loss (INR)
1	Paddy rice	1000	150	15	17,5	2625,0
2	Maize	250	55	22	12,5	687,5
3	Tomato	400	55	14	50	2750,0
4	Peas	300	55	18	32,5	1787,5
5	Cowpeas	550	55	10	25	1375,0
	Total	2500	370	17,27		7850,0

Discussion

- The better the harvest, the more rats damage
- Especially young stems they eat, they like it because it is a bit soft
- Damage overall is about 15-20%

4. What attracts rodents?

- Months of high rodent activity:
 - Paddy (Nov to Jan) during harvest season; as the crops come to mature, the rats come out of their holes
 - Maize (October)-harvesting season,
 - Pulses (Feb to march)
 - Lean season is from March – June/July (the monsoon starts in July)
- what is the influence of forest nearby crop fields?
- what are hiding places of rats in different seasons?
- what is the influence of garbage piled in homestead land to?

5. Rat population dynamics

During the dry and lean periods, where do the rats stay/hide? What do they eat?

- In the field: mostly in field bunds. They store/hide grain in the holes in the field (bunds) in holes. They stock up food inside their burrows and thus survive the dry/lean period.
- In the home under the roof/ceiling.
- They will even find food in a sealed container. They will always find a way to enter

Discussion:

- are rat number changing through time, if you compare the last 10 years?
 - All villages mentioned it is increasing.
- if increasing or decreasing, what are possible reasons?

6. Rats and diseases

- people do not know of any diseases caused by rats to humans or livestock, but we know rats vector more than 60 different diseases.
- also urine/feces traces are found and then cleaned, but not for clear reasons of risk of diseases.
- Even fever can be a sign of a rodent caused disease.

7. Storage

Which of these storage materials is/are most effective against rats?

- Banda (made of brick and plastered with soil/dung mix or cement) is good compared to others
- But rats can still gnaw through it, even though the structure has bricks.
- Dhamanpani: Note, they have seen a metal drum which they think could be a better storage material compared to a Banda.

Discussion:

- we show few options in the other presentation on rodent-proof storage, to be discussed there.
- what is availability of metal/tin materials? what can people spend?
- are people willing to do modifications in their current storage structures? (if any)

8. Cultural perceptions

- people kill snakes and owls, since they are scared of them or there is bad omen. Is this really the case, and is there an approach possible to promote these animals?
- how do the people in the villages look at other predator animals, e.g. mongoose, raptor birds etc.
- what is the perception on killing rats, is there reservation against it?

9. Rat management

- poison, rodenticides used - where are they mostly used, what type of products are they, where to get them?
- how many people use practice of smoking out burrows in your village? and when is this normally done? (which month/season)
- what other methods could we try according to you?
- how can we ensure the entire community participates in rat management?
- what would be the most important factors for community to do rat management?

10. Reflection

- what kind of support to community is needed for successful uptake of rat management?
- according to you what conditions are ideal for rats? how could we turn that around and make it difficult for rats?
- how does rat management relate to other agricultural practices, is there a linkage?
- share any other reflection or question