



# In Situ Conservation of Traditional Rice Varieties of Uttara Kannada



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## INTRODUCTION

- Rice is an economically important food crop. It feeds nearly half the world's population and accounts for more than 50% of their daily calorie intake (Maclean et al. 2002).
- The world is losing genetic diversity of rice
- Major reason for this loss is the steady replacement of native varieties with high-yielding new varieties in large scale.
- India: Land of genetic diversity of rice (100,000 local varieties) and about 90% are feared to be lost

## IMPORTANCE OF TRADITIONAL VARIETIES

- ✓ High diversity at genetic level.
- ✓ Diverse qualities for rice- height of plant, colour, size, aroma, maturity and habitat.
- ✓ More fodder (5-7 ft height unlike new dwarf varieties).
- ✓ Disease, pest, drought and flood resistance more.

## OBJECTIVES

- To trace out traditional varieties remaining in Uttara Kannada
- To find out their special characters
- To estimate number of traditional varieties in the district using field survey and regression analysis for prediction of expected number in the district

## RESULTS AND DISCUSSION

Altogether, a total of 181 rice varieties were inventoried from 232 villages, during this survey. Of these, 101 varieties were traditional ones; 80 were new varieties, considered high yielding.

Taluk-wise numbers found and numbers expected are presented in the table:1

## HABITAT SPECIALIZATIONS

For flood tolerance Eg: Neermulka; Mysore mallige;  
Salinity tolerance Eg: Bili-kagga; Kari-kagga.  
Drought tolerance Eg: Jeddkeppi; One-kaddi.  
Variable maturity periods: Halga, Jeddubatha (90 -100 days); Dibnasaala, Bantwala (100 -120 days); Hegge, Aloorusanna ( 120 -140 days)

Figure 1: Map of Uttara Kannada district with 11 taluks

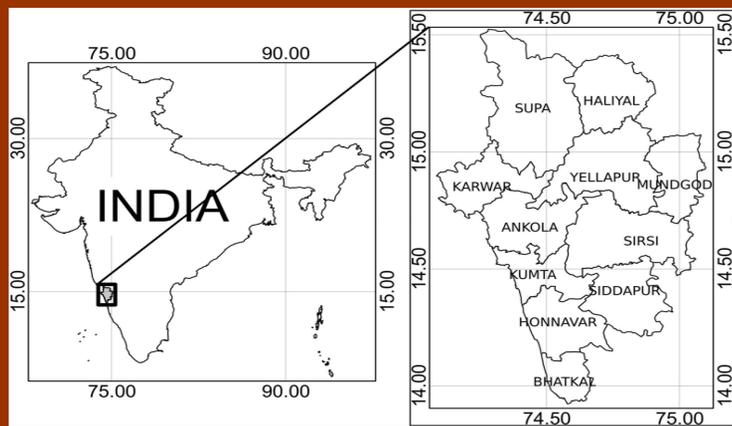


Figure 2: Trends of diverse traditional rice varieties in Uttara Kannada

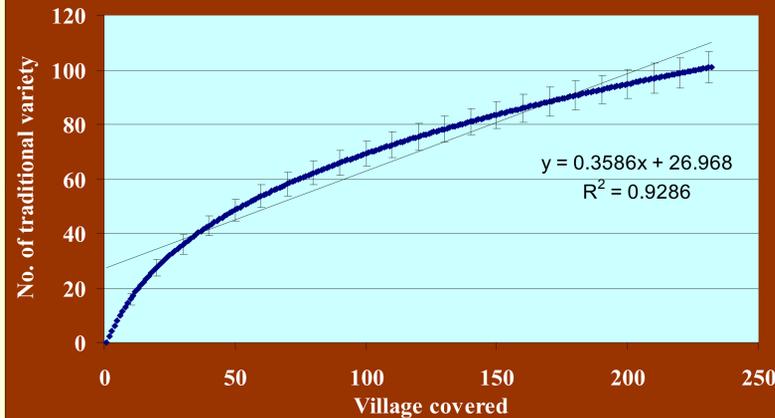


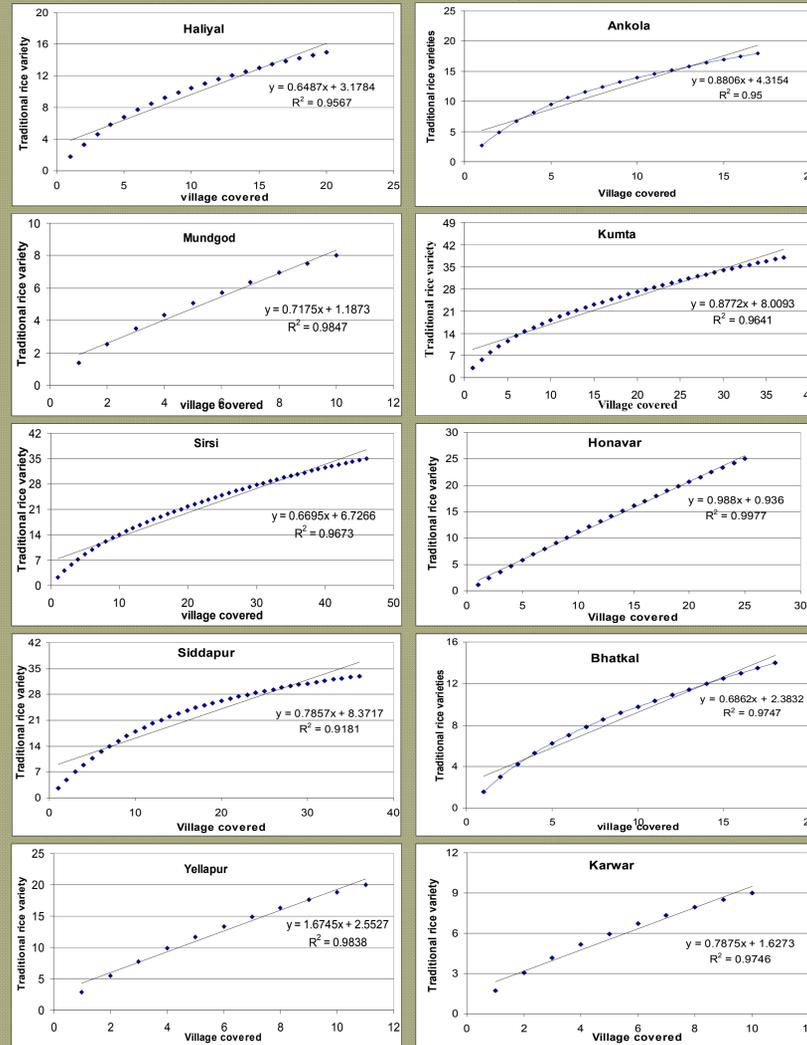
Table 1: Traditional rice varieties with expected varieties in 11 taluks of Uttara Kannada

| Taluks       | Village covered | Rice varieties |               | Total varieties encountered | Expected traditional varieties |
|--------------|-----------------|----------------|---------------|-----------------------------|--------------------------------|
|              |                 | Traditiona l   | New varieties |                             |                                |
| <b>Total</b> | <b>232</b>      | <b>101</b>     | <b>80</b>     | <b>181</b>                  | <b>492</b>                     |
| Ankola       | 17              | 18             | 14            | 32                          | 81                             |
| Bhatkal      | 16              | 14             | 15            | 29                          | 45                             |
| Haliyal      | 20              | 15             | 12            | 27                          | 92                             |
| Honna var    | 21              | 25             | 15            | 40                          | 93                             |
| Joida        | 2               | 1              | 10            | 11                          | -                              |
| Karwar       | 11              | 9              | 10            | 19                          | 45                             |
| Kumta        | 42              | 39             | 17            | 56                          | 112                            |
| Mundgod      | 10              | 8              | 10            | 18                          | 68                             |
| Sirsi        | 45              | 35             | 28            | 63                          | 155                            |
| Yellapur     | 11              | 20             | 13            | 34                          | 218                            |
| Siddapura    | 36              | 33             | 34            | 67                          | 165                            |

## Some traditional rice varieties in Uttara Kannada



Figure 3: Village-wise diversity sampling trends regarding traditional rice varieties in 10 taluks of Uttara Kannada (after rarefaction)



## CONCLUSIONS

- ✓ High landscape heterogeneity and strong in agriculture traditions make Uttara Kannada a stronghold of genetic diversity of rice and other crops
- ✓ The gene pool of rice was neglected all the while and even the agriculture department does not maintain data on local varieties
- ✓ Widespread introduction of dwarfish new varieties, considered high yielding, is a major threat to rice gene-pool.
- ✓ New varieties are susceptible to high disease and pest attacks and marginally high yield is often eclipsed by these drawbacks
- ✓ Introduction of new varieties has caused fodder crisis in the district which is adversely affecting milk production and availability of cattle dung for manure
- ✓ We have predicted using the sample survey method and regression analysis the talukwise numbers of local varieties available in Uttara Kannada; with nearly 500 expected varieties