Sinnar Taluka Overview: Water resources and cropping patterns

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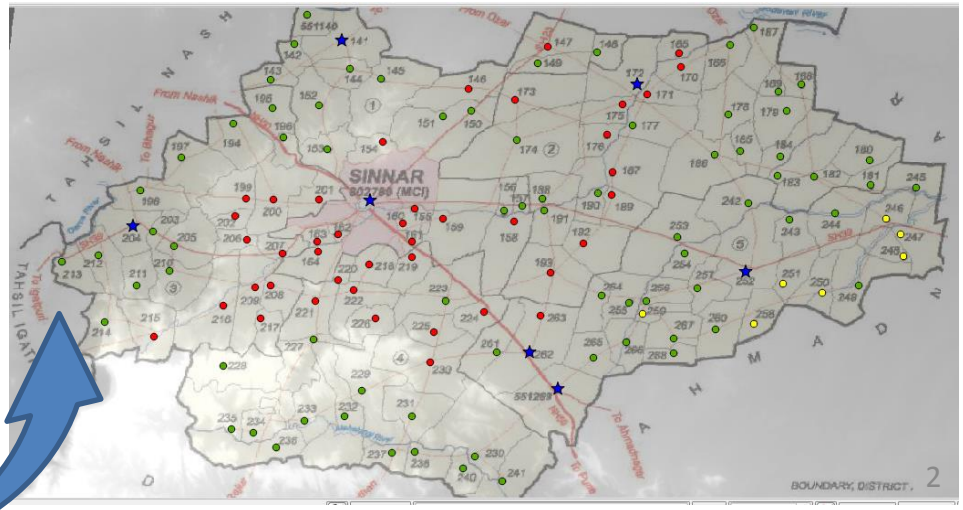
TD603 field trip

Sinnar Taluka Overview

- Nashik district: large vegetable producing district with big agricultural markets
- Water situation
  - Rainshadow region of the western ghats
  - Largely dry and drought prone with drinking water scarcity
  - Highest groundwater exploited taluka in Nashik district



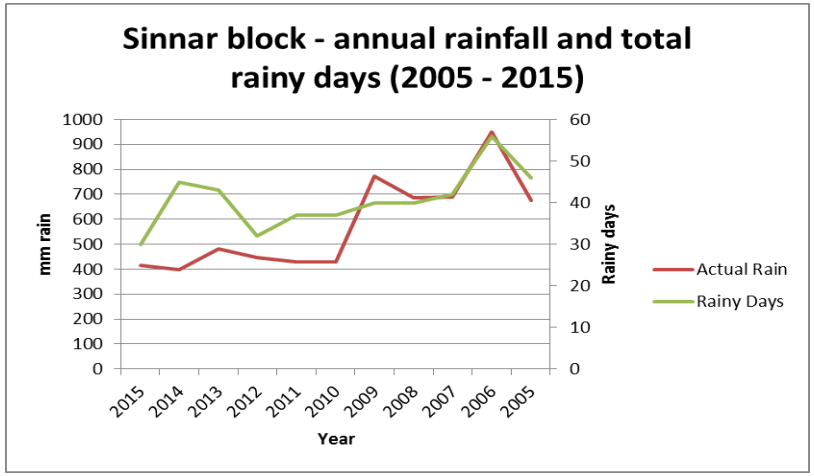
Sinnar Taluka – Cropping

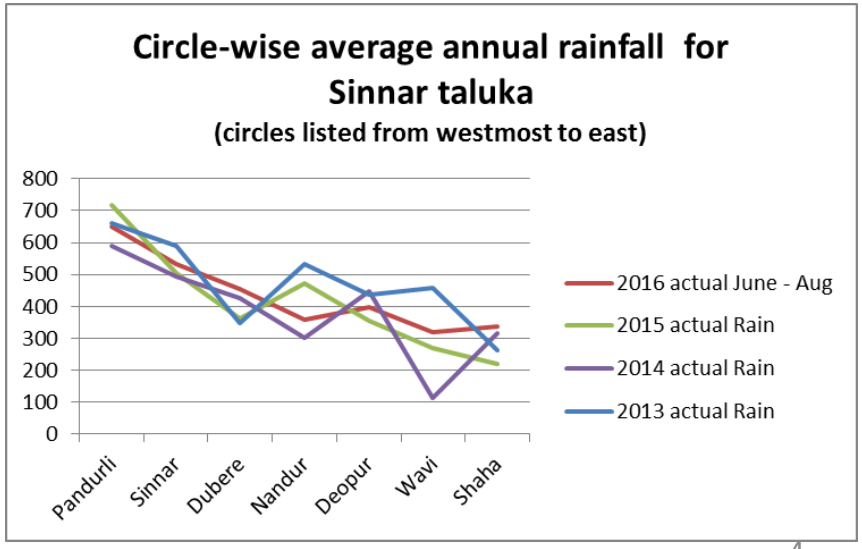
- Changing trends in cropping pattern
  - Shift towards cash crops including horticulture
    - *per acre more crop/more cash, greater market dependence*
  - Move towards higher water infrastructure for assured access
    - High well density, horizontal bores, farm ponds, increasing distance from water source to farm (multi-stage pumping)
    - drip irrigation, sprinklers
    - *Rising cost of per unit water => more incentive for cash crops*

- What is the impact of this on low-irrigation farmers? Do the overall gains offset the losses in the region?
- Promotion of horticulture: is it sustainable? Can it be done sustainably?
- Allocation of irrigation water : how do we ensure *Per drop more crop* across the region?

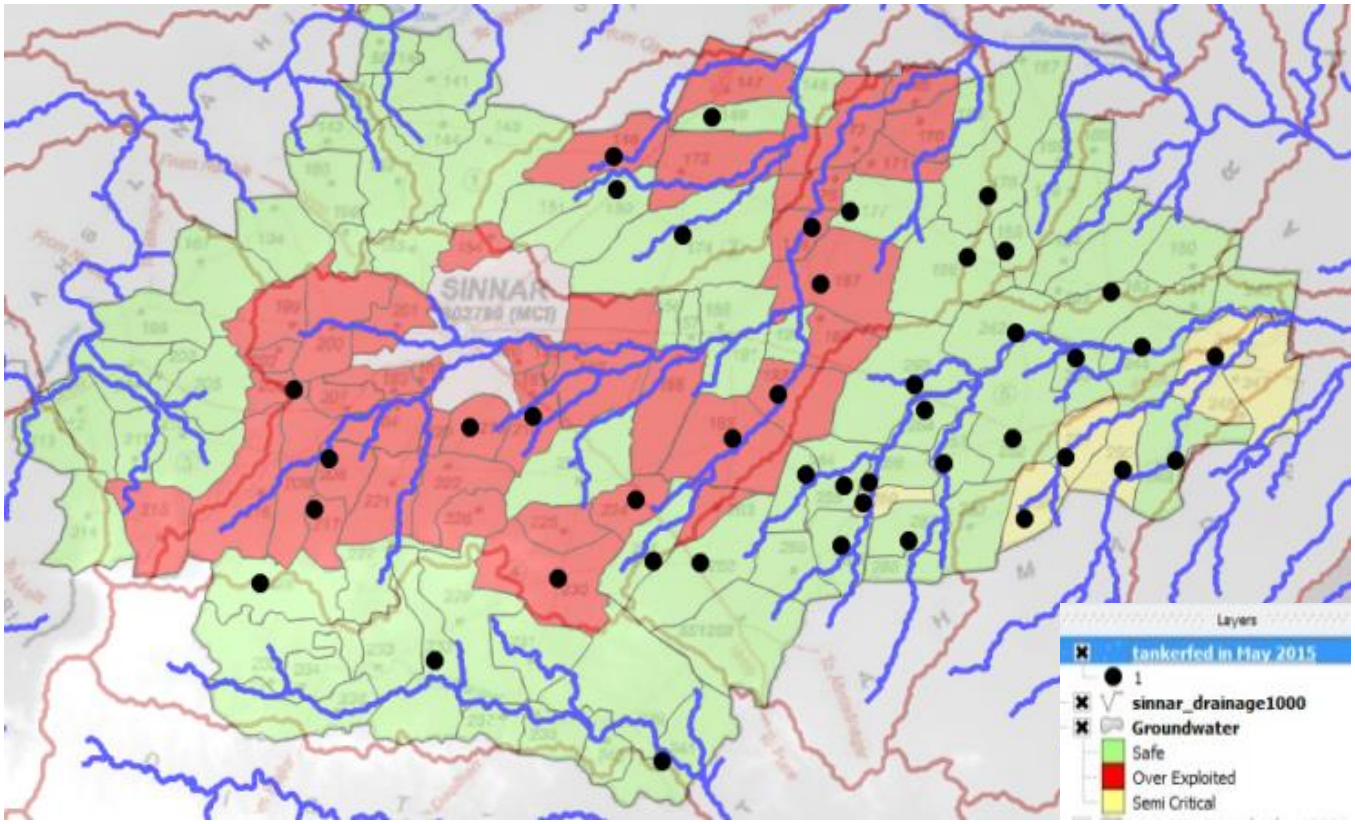
Sinnar Taluka - Rainfall

- Taluka average annual rainfall 616 mm
- Steady decline in past 10 years *(435mm, 132% received so far in 2016 monsoon)*
- High regional differences from west to east





Sinnar taluka – GW development and drinking water scarcity



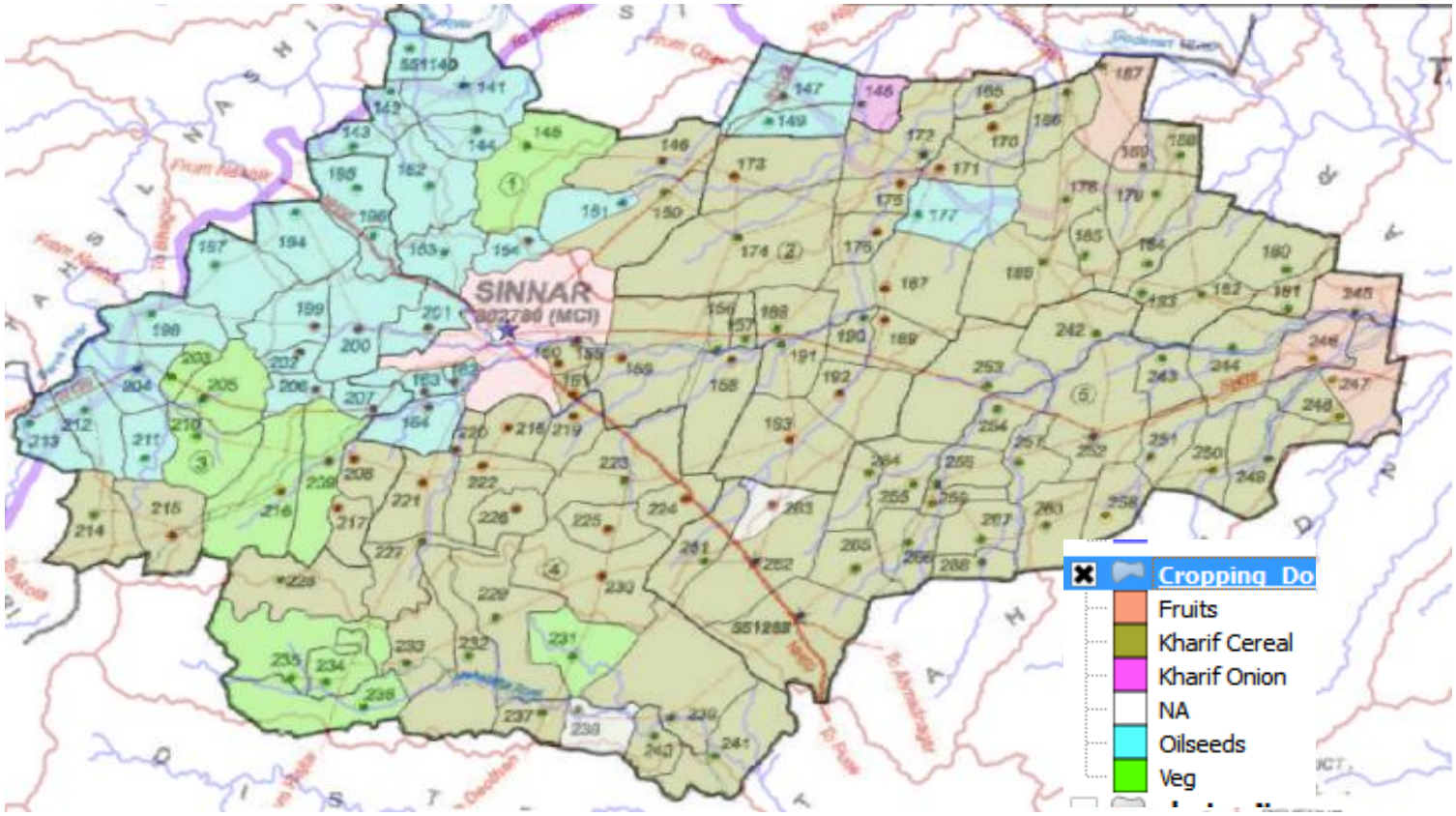
Sinnar block cropping pattern

- Significant area under foodgrains (45%) and oilseeds (16%)
- Increasing vegetable cultivation (from 13% of cultivable land in 2008-09 to 18% as of 2014)
- Kharif crops: bajra, soyabean, onions, vegetables, maize, peanuts (also tur, cotton sowing)
- Rabi crops: wheat, harbhara, onions, vegetables

Crop type	Hectares under cultivation (2014-15)	% of cultivable land
Kharif pulses	1,182	1%
Kharif cereal	30,617	31%
Kharif onion	4,558	5%
Rabi cereal	8,330	8%
Rabi harbhara	4,650	5%
Rabi onion	5,607	6%
Sugarcane	532	1%
Cotton	1,583	2%
Oilseeds	15,990	16%
Other Vegetables	7,084	7%
Fruits	4,906	5%
Gross sown area	85,038	87%
Total Cultivable land	98,226	100%

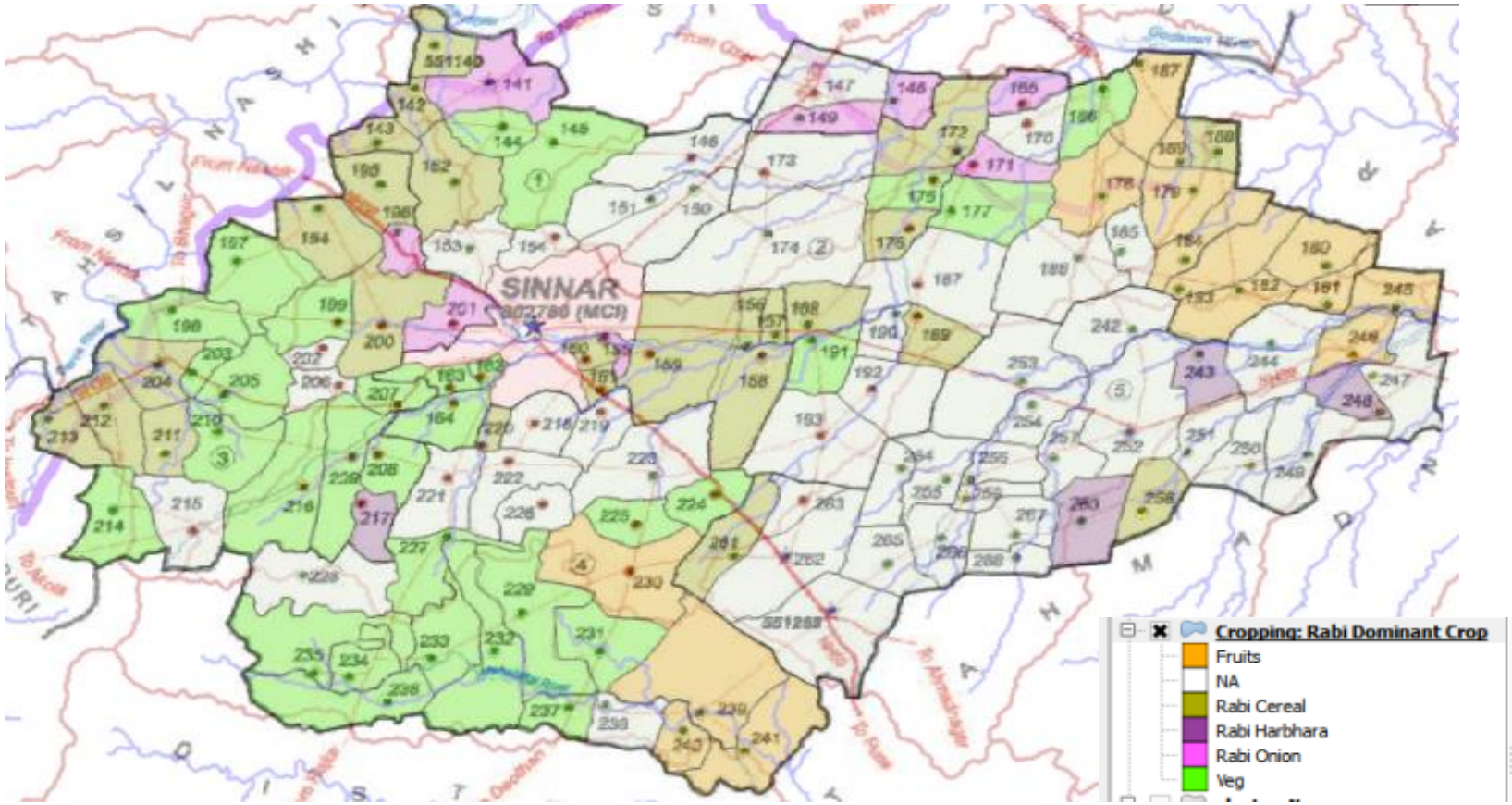
Source: Sinnar block Agriculture dept

Kharif 2015 dominant crop



Source: Sinnar taluka krishi office

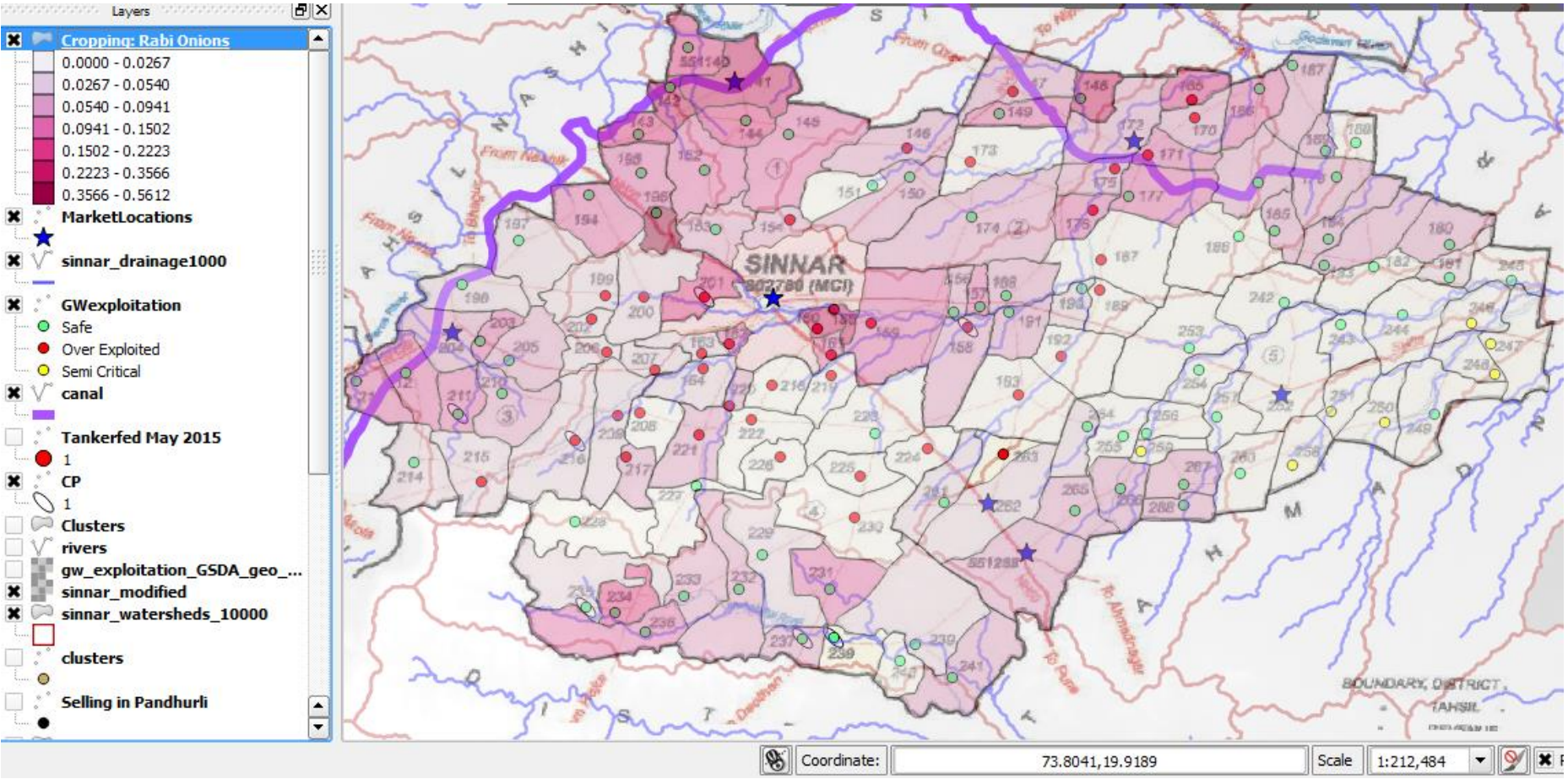
Rabi 2015 dominant crop



Source: Sinnar taluka krishi office

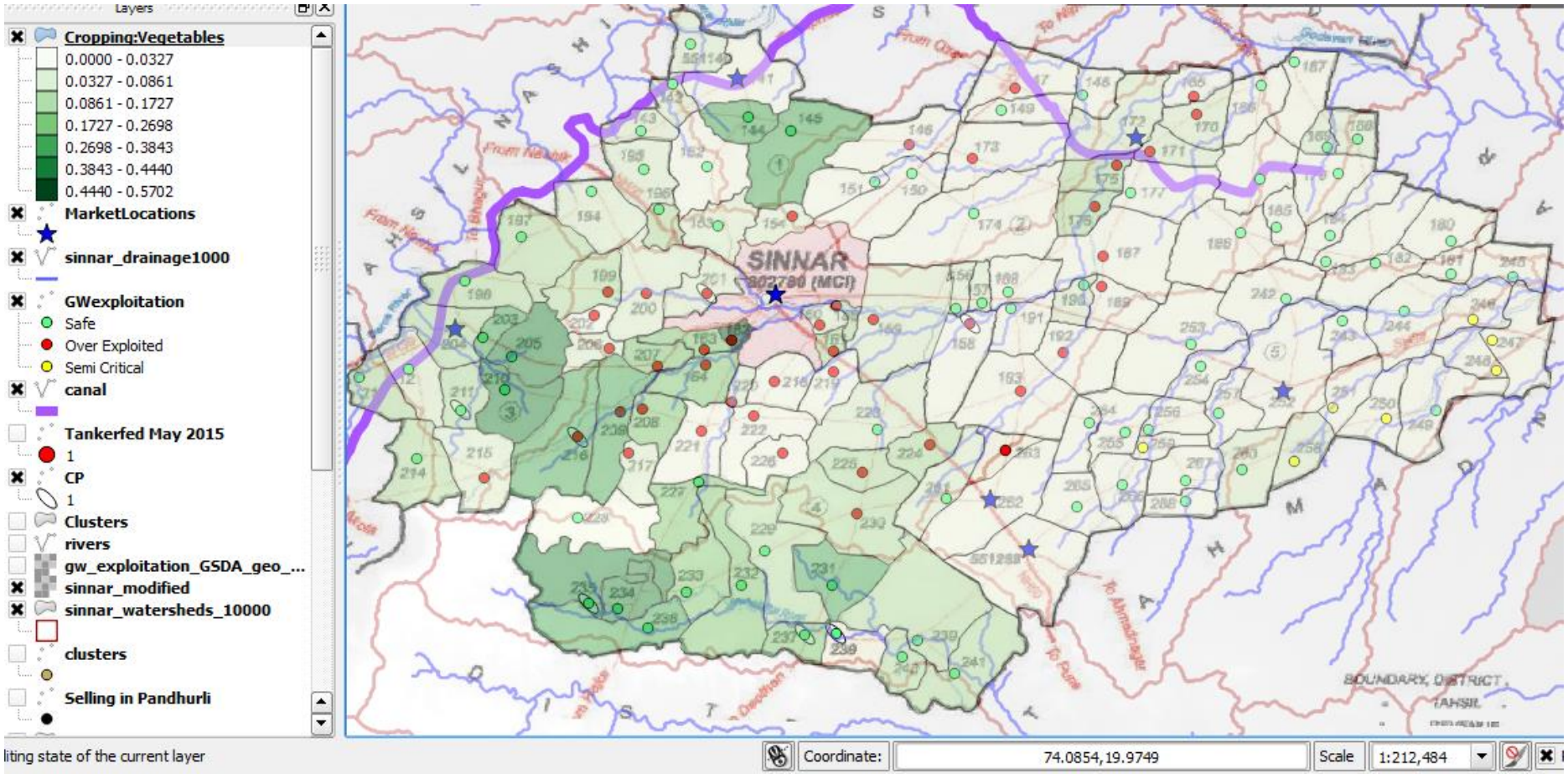
Cropping: Rabi Onions (2015-16)

(% share of net cultivable area under Rabi onions)



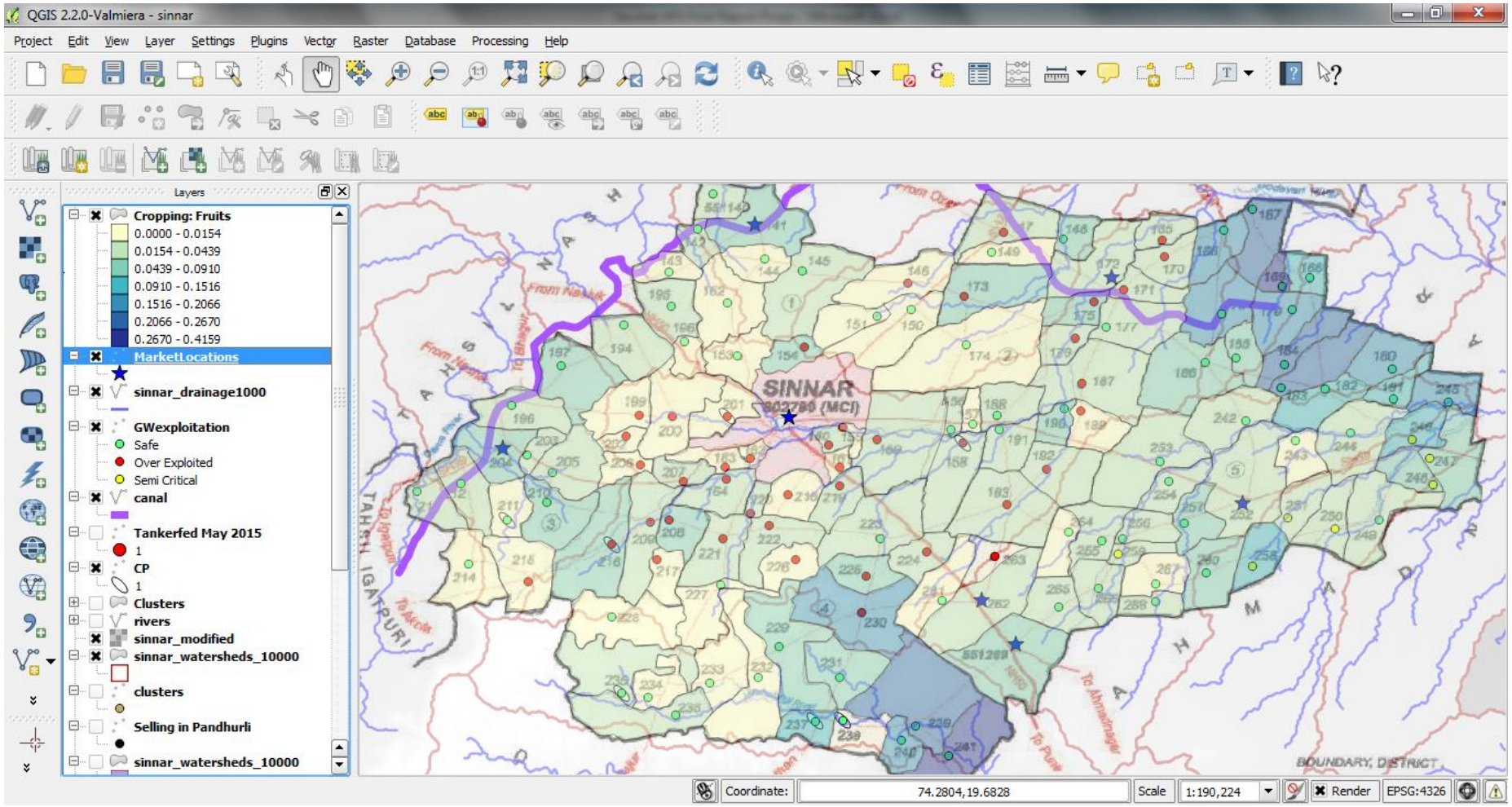
Vegetable cropping (Sep 2015)

% share of net cultivable area under vegetables

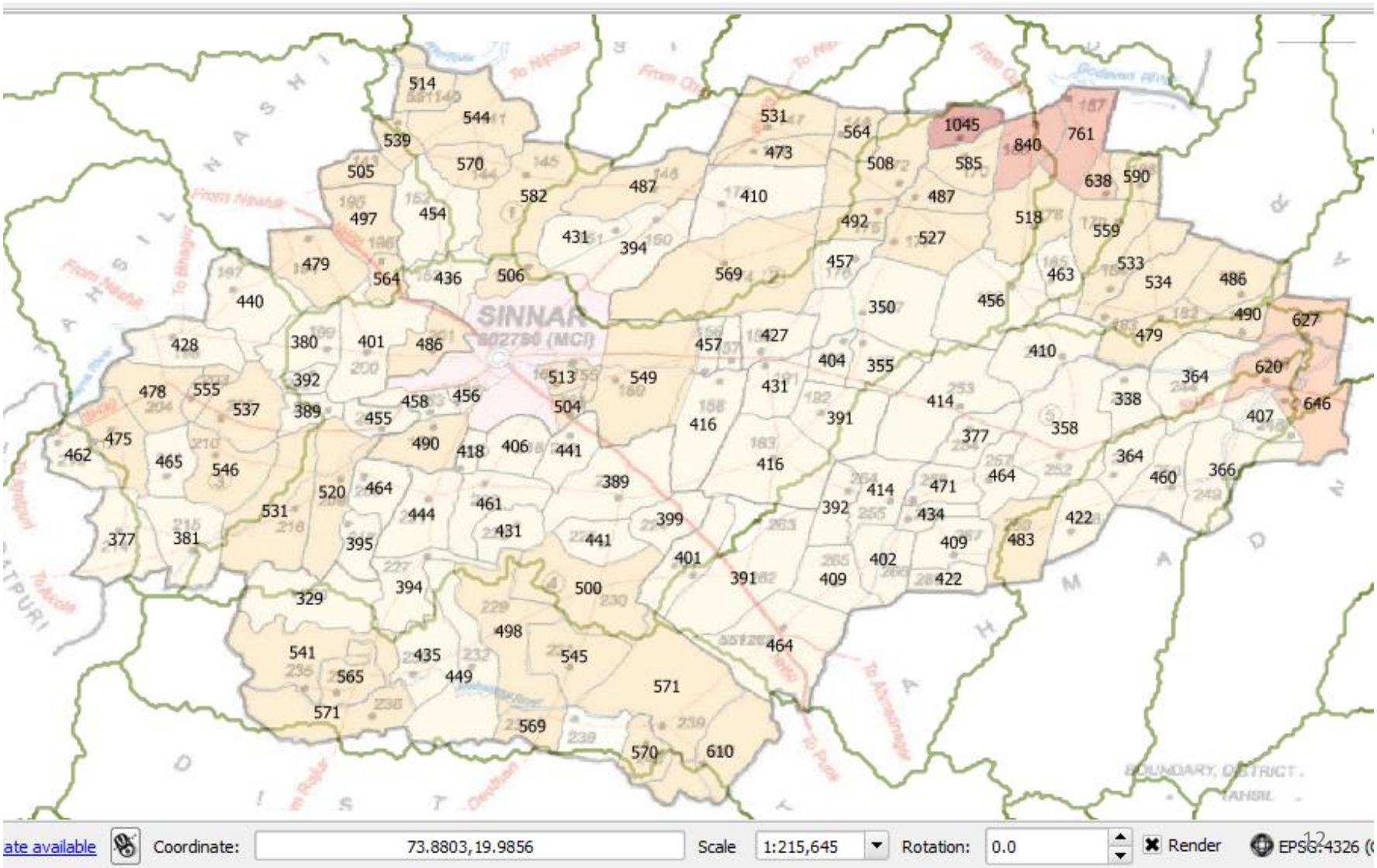


Fruits (2014-15)

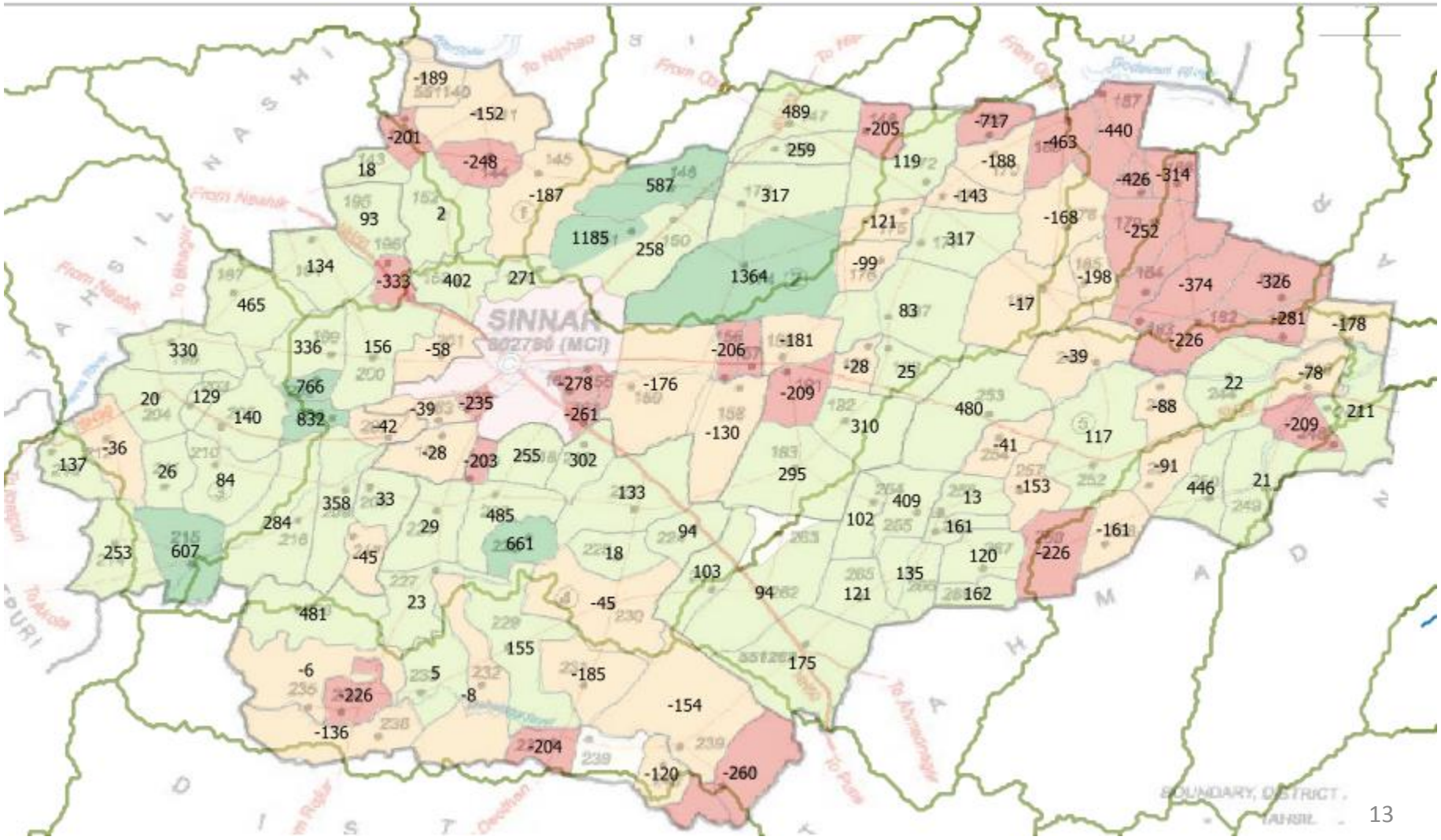
% share of net cultivable area under fruits (grapes, pomegranates)



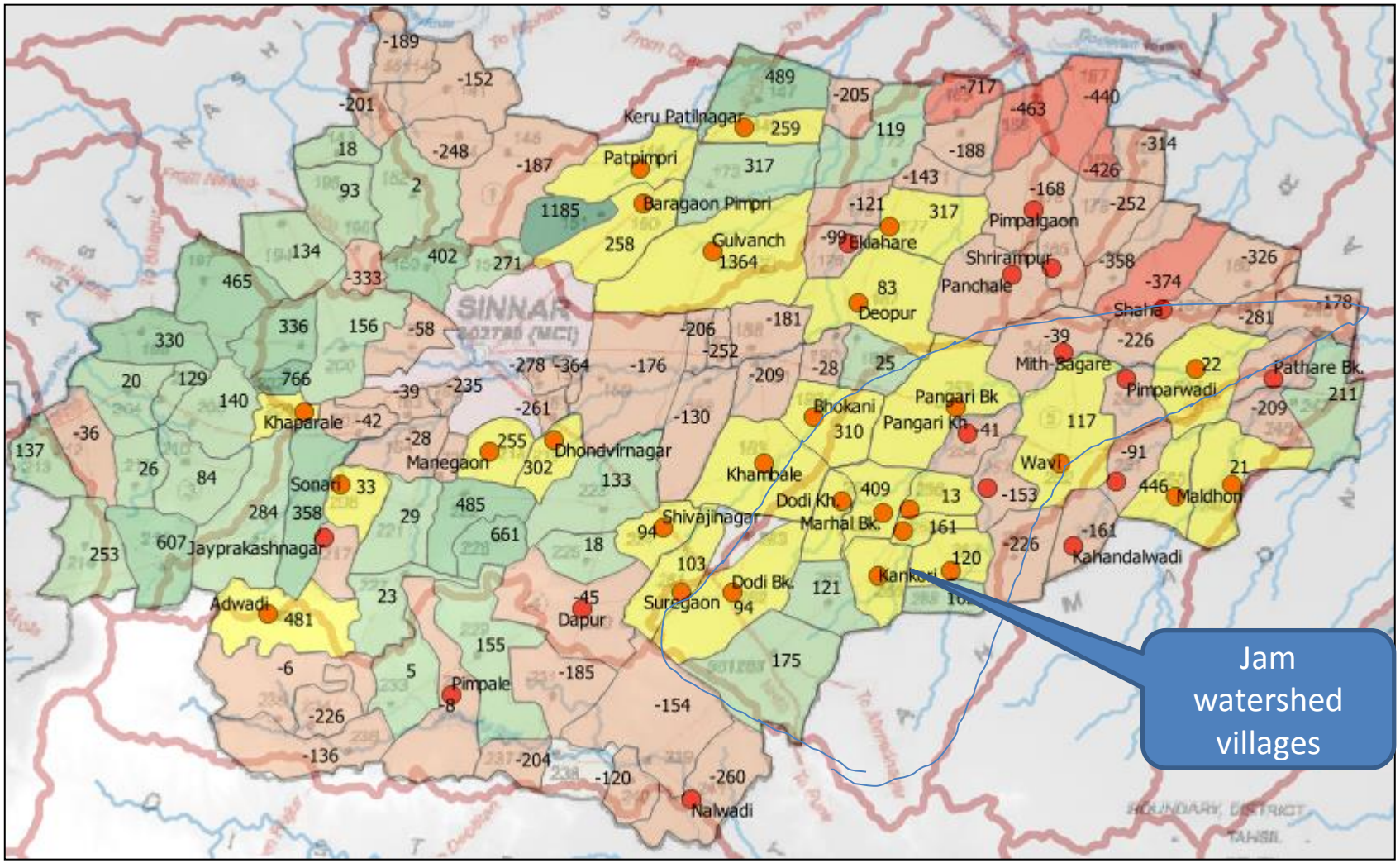
Total mm crop water requirement based on 2015 cropping



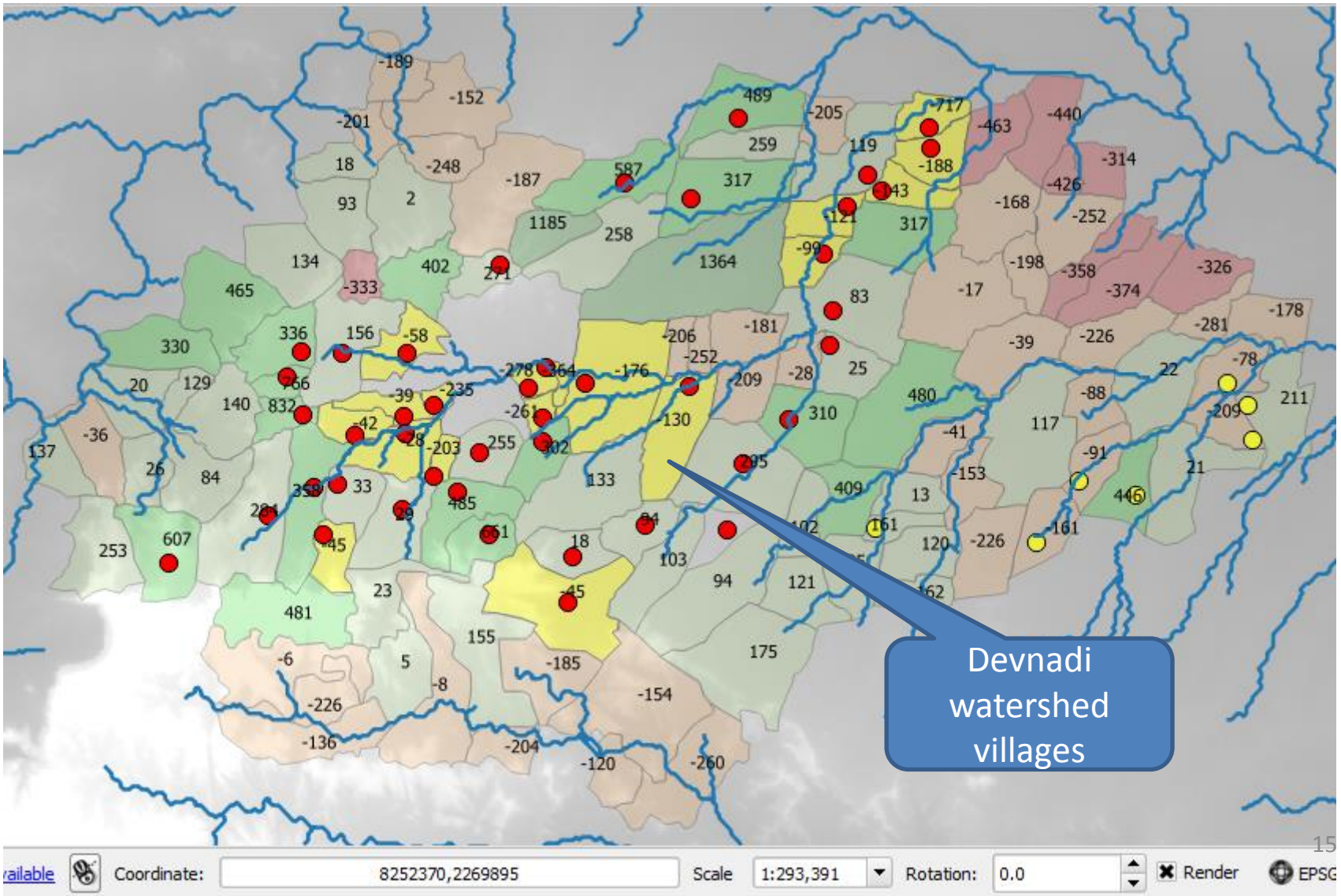
mm water use beyond rain in cultivable area



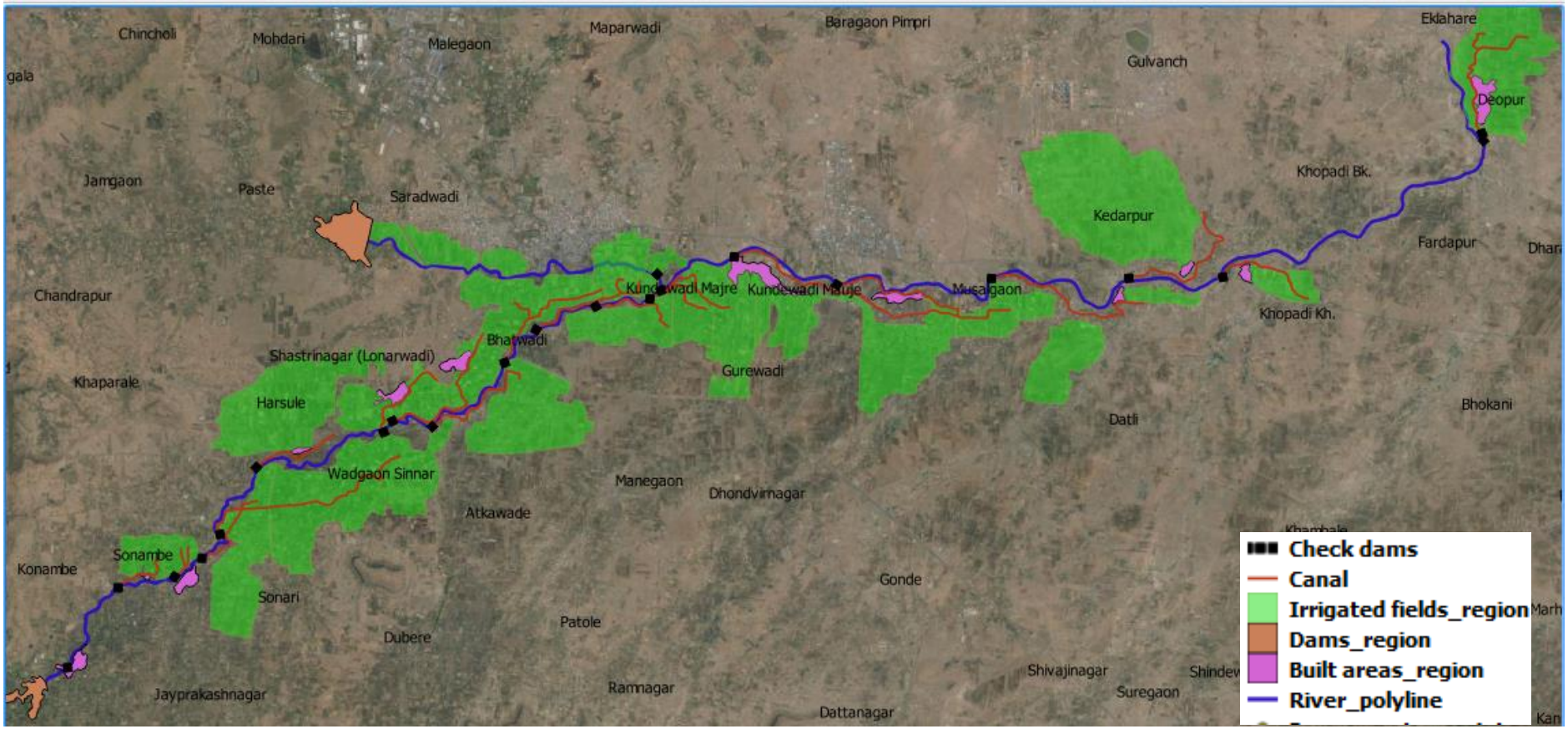
Villages +ve in water use yet tanker-fed



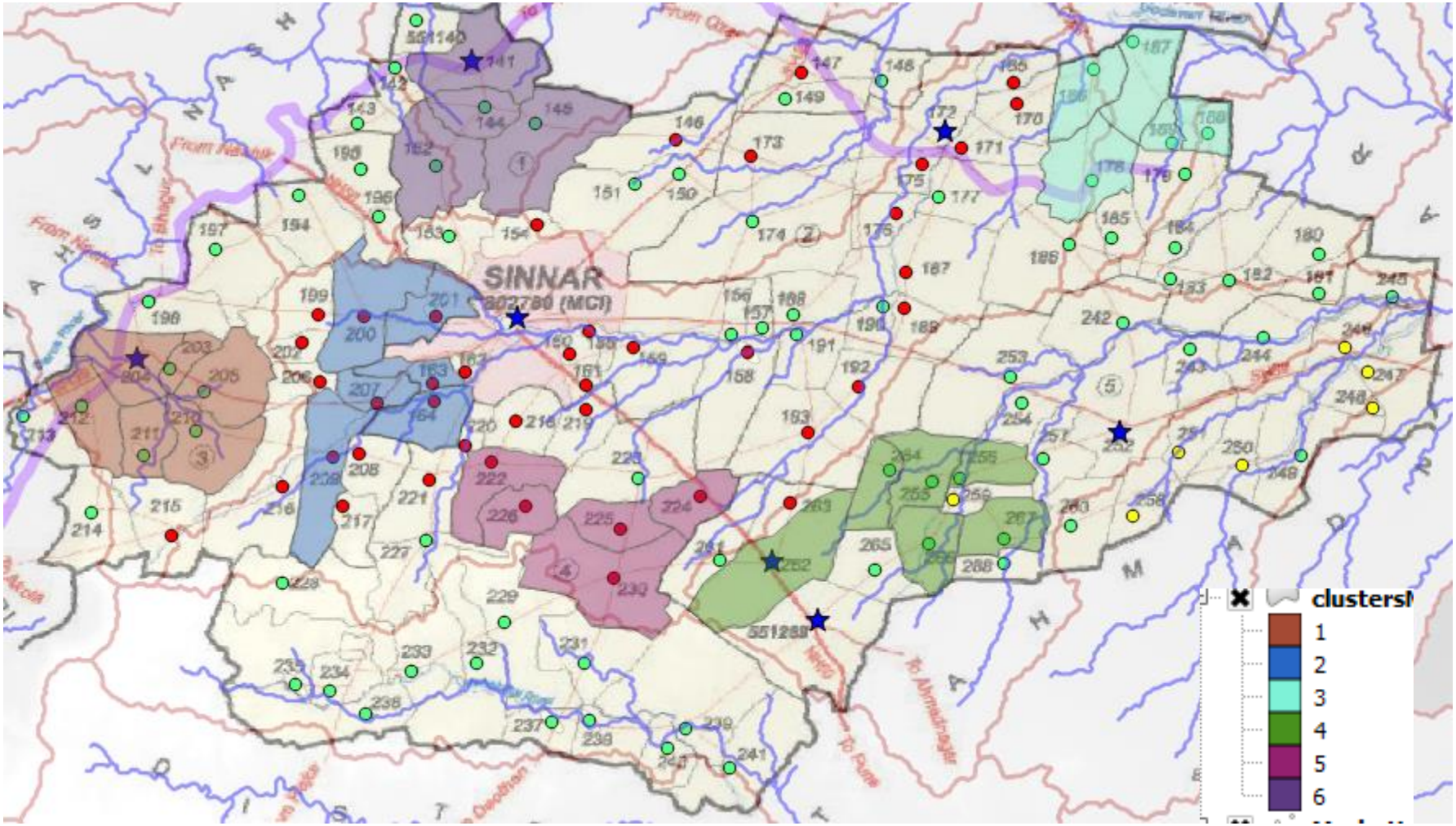
Villages –ve in water use and GW overexploited



Diversion based irrigation on Devnadi – important intervention to counter GW exploitation



Village level studies



Village level studies

- Slides by Gopal

Conclusions and way ahead

- Changing cropping patterns increasingly more water-intensive
  - cash-crops and horticulture accompanied by kharif crop failure and drinking water scarcity
  - Need to understand regional flows of groundwater and surface water
- Inequity in access to water for irrigation
  - Importance of canal/surface water allocation
    - Tail-end effect
- Need to carefully re-examine the emphasis on horticulture and NHM farmponds