

Saving the Icon: Apple Farmer Attitude to Climate Change in Batu City

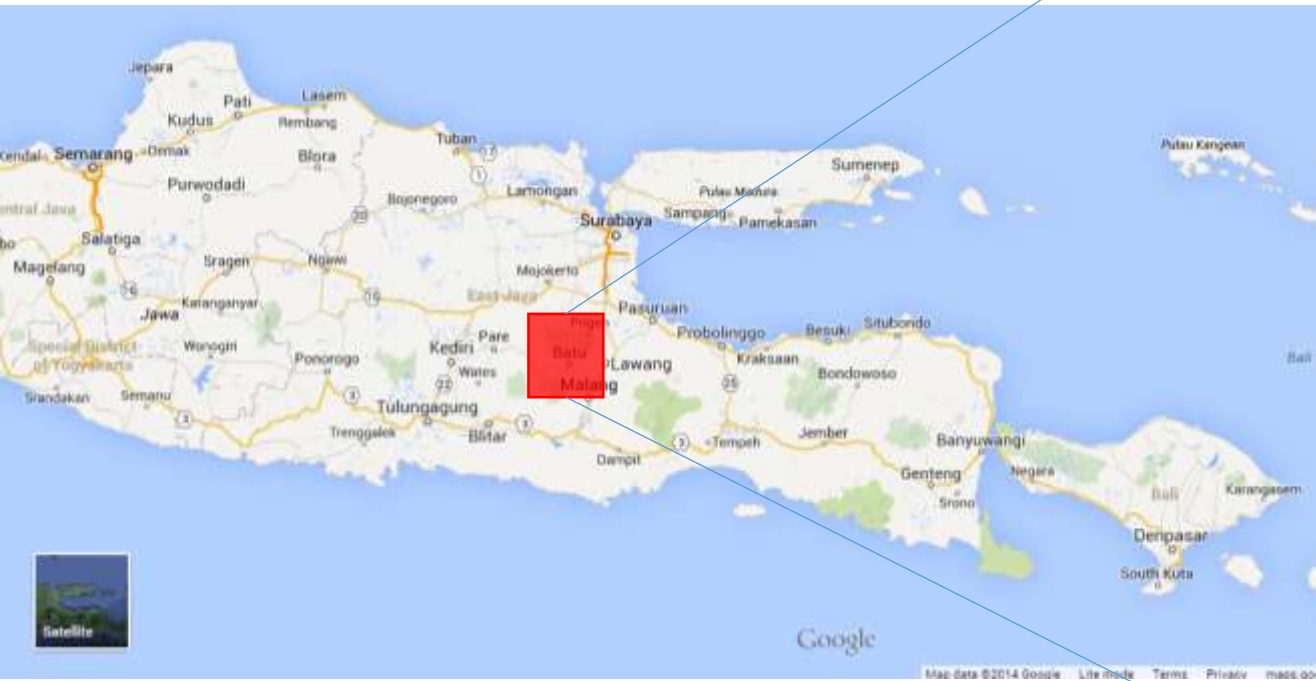
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Research location





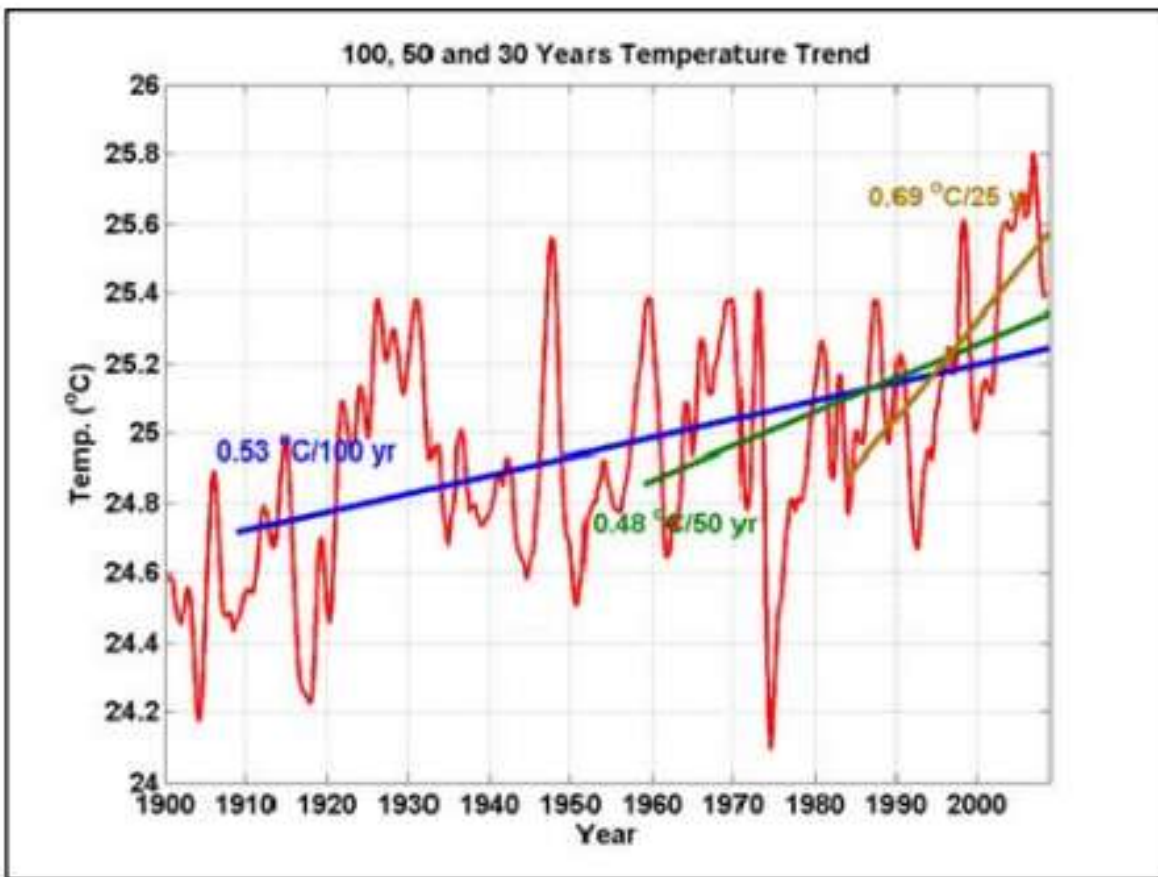
Apple farmer characteristic

Level of education	Junior high
Land ownership	0.4 hectares/average
Type of farming	Non organic
Number of labor	2-3 person/ha
Productivity	15 tons/ha

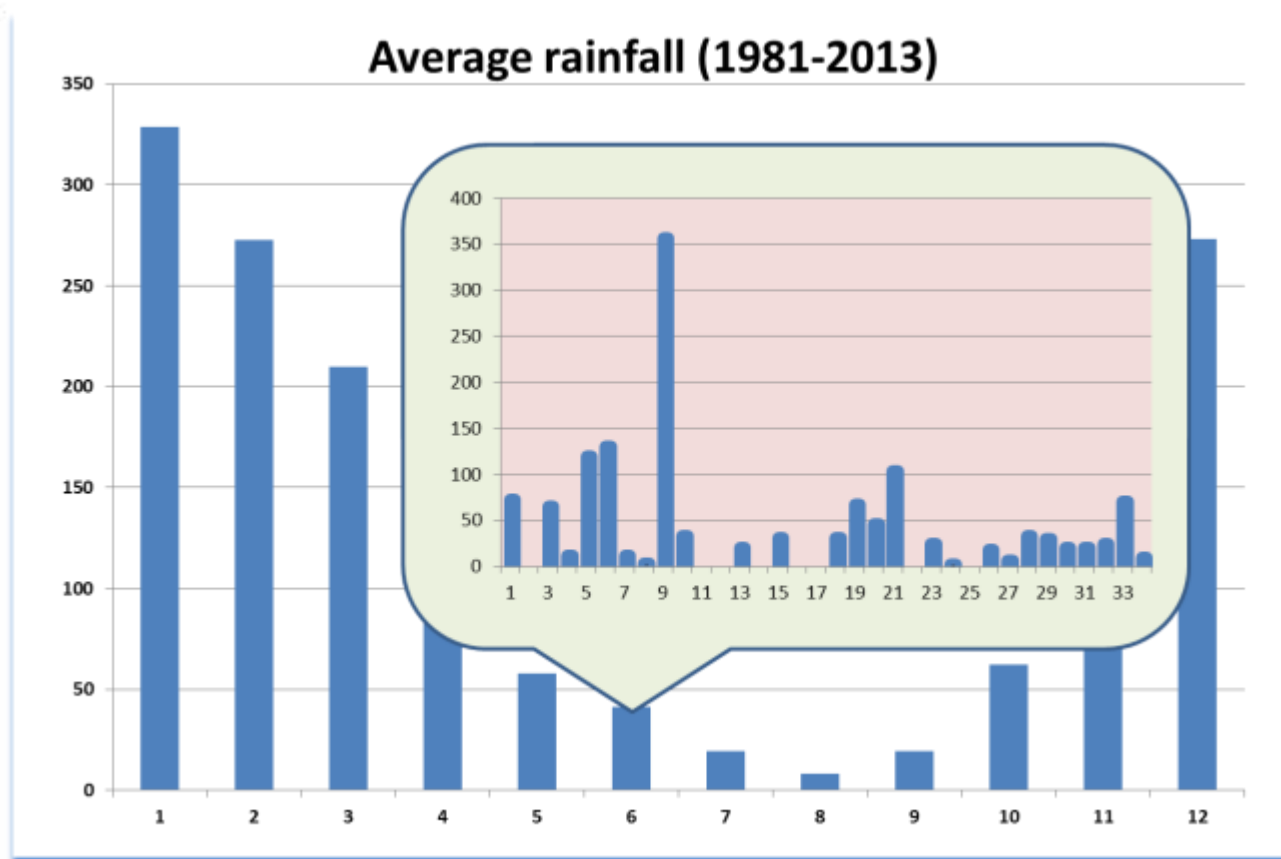




Changing in climate



Source : KRAPI,2012



Source : BMKG Stat. Karangploso, 2014





How farmer witness changes in environment



TEMPERATURE
INCREASED

77%



RAINFALL
DECREASED

88%



EXTREME WEATHER
EVENTS INCREASED

85%



PESTS INCREASED

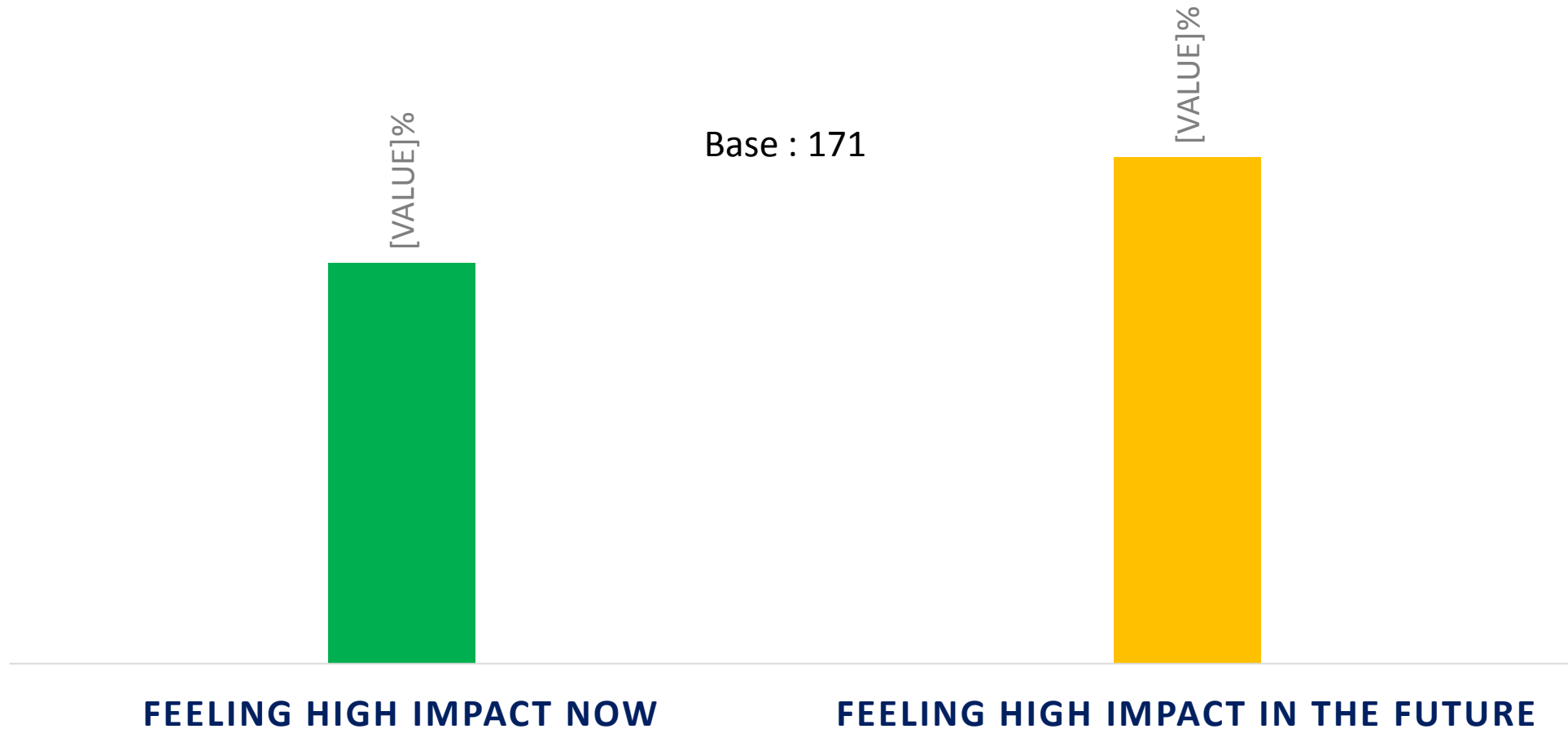
35%

Base : 171





Apple farmer feeling impacts of changes in climate now



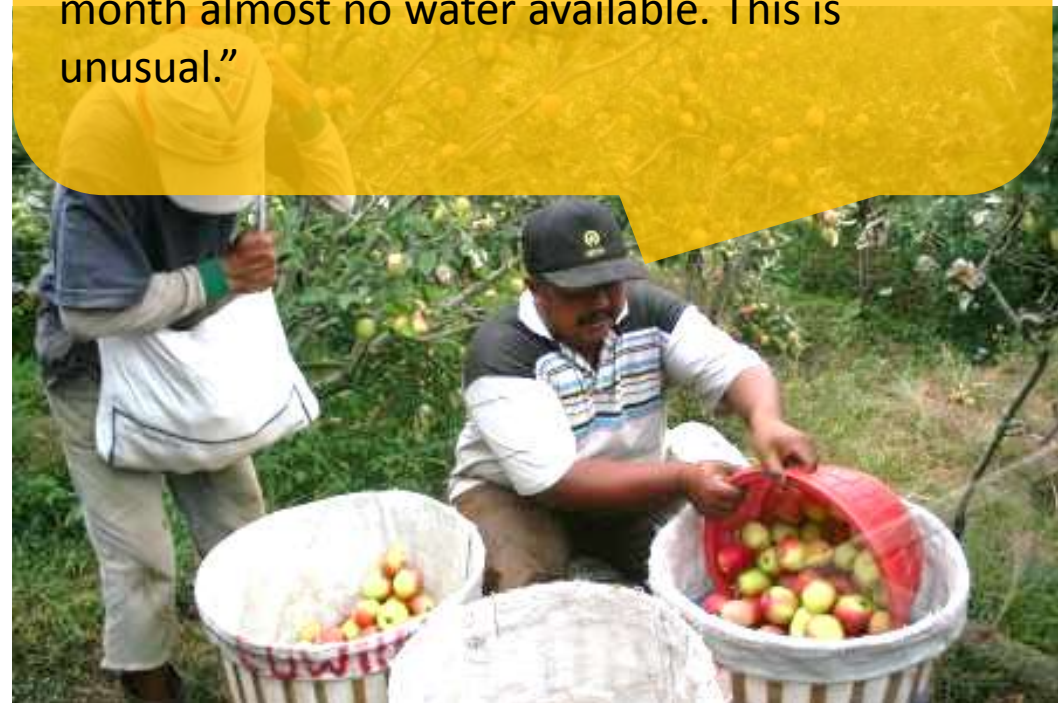


How are Apple farmer being impacted now

Indicator	Impact
Increasing temperature	Increasing number of pest outbreak
	Apple seeds failed to germinate properly
Changing wind and precipitation patterns	Increasing evapotranspiration
	Decrease in crop production
Changing in season	Shifting crop calendar

Source : FGD Batu , 2014

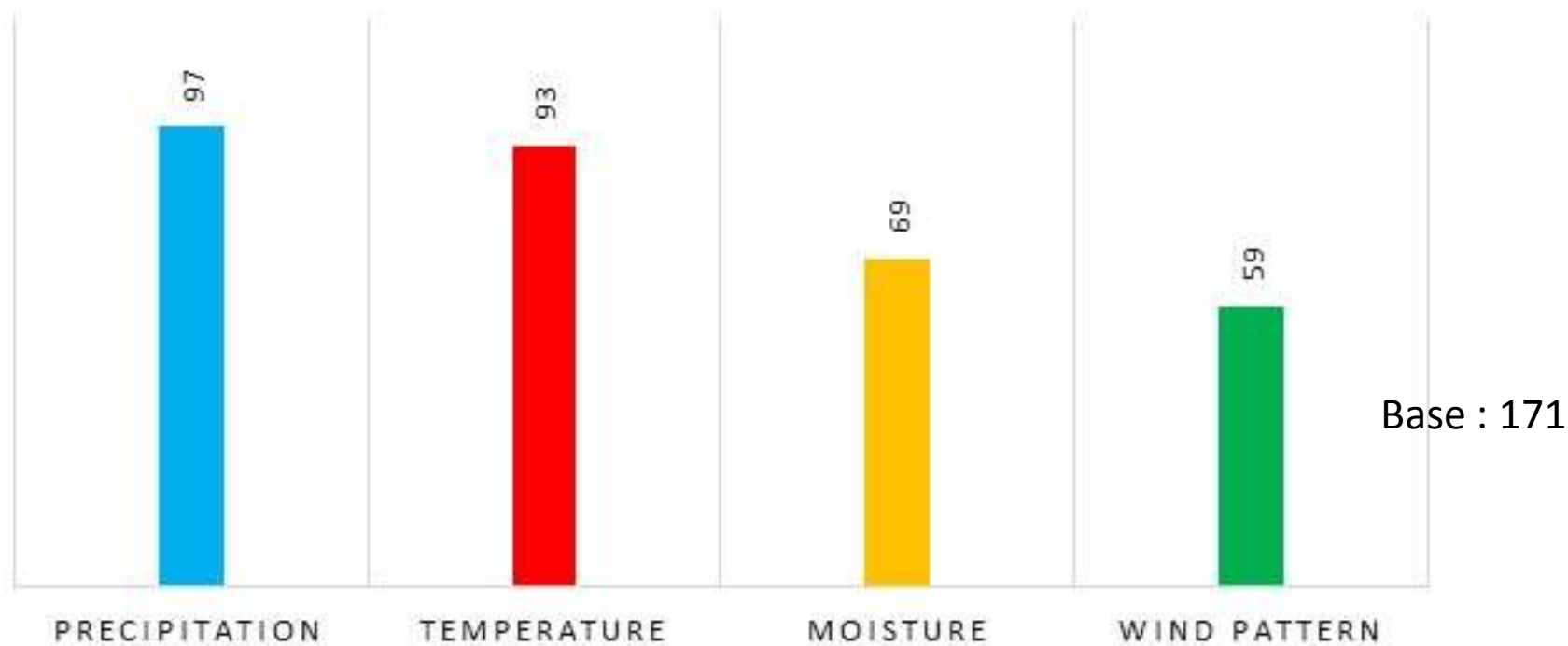
“The rainy season is supposed to occur within a month ending with “ber” (September–December), nowadays it has flipped over. Water pours down in January to February and this month almost no water available. This is unusual.”





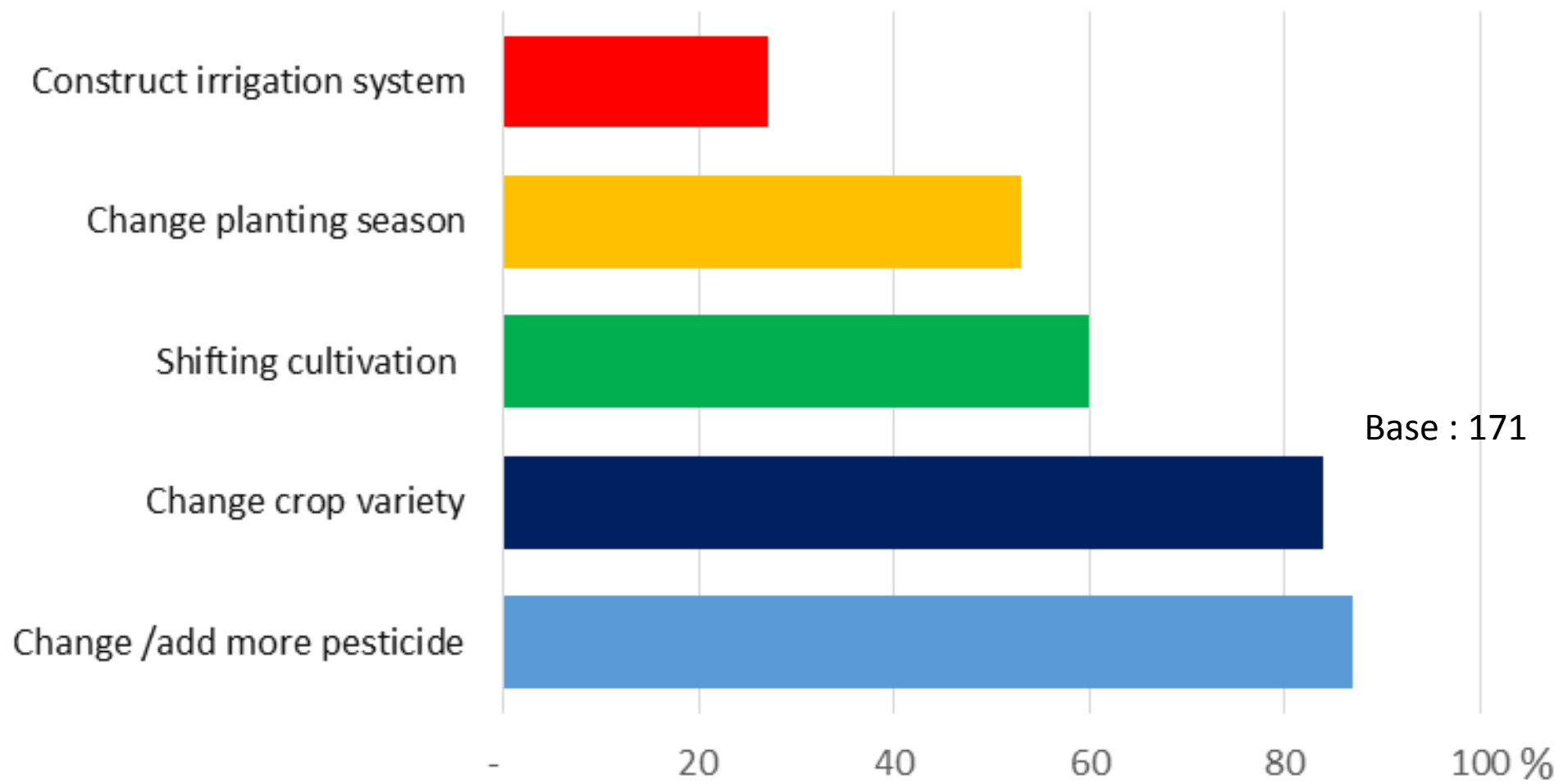
How well informed the farmer feel

NUMBER OF FARMER HEARD
INFORMATION OF (%)





Current action to boost productivity





Communicating Mitigation & Adaptation



PSA, adlibs, talk show, magazine show, off air road show,
live discussion in Batu, Malang (Yogaswara et, al, 2013)





Other challenges





Local actors in adaptation

Stakeholder	Roles , Task and Responsibility	Potential Contribution to Climate Change Adaptation
BAPPEDA (Regional Development Planning Agency)	<ul style="list-style-type: none"> Develop and implement local government policy, especially in relation to local government planning. Engage in policy formulation , coordination of development planning 	Incorporate programs from local government agencies into integrated local government development programs
BMKG	- To provide climate variables data	<ul style="list-style-type: none"> Observer Data collection Climate modelling
Local agriculture agency	Implementing local government action in the agriculture sector through technical formulation	<ul style="list-style-type: none"> to promote livelihood adaptation and reduce vulnerability to climate change. Seek out support environmentally friendly technology. Developed, and is constantly updating, of diversified good practice To endorse locally prioritized adaptation practices.
Farmer organization	<ul style="list-style-type: none"> To build capacity among farming communities in terms of conservation management. 	<ul style="list-style-type: none"> To continue Public Awareness on Climate Change campaign by ICTTF and local government Training and workshops can then take place to raise awareness of the farmers regarding techniques to save and store seeds. To participate and supporting in farmer field school Farmers are taught about climate change and ways in which they can adapt their farming i.e :integrated pest management, production of healthy crops
Local Disaster Management Agency (BPBD)	<p>Develop and implement local government policies and programs related to DRR</p> <p>Formulating technical function , providing public services, technical engineering</p>	Formulate and implement disaster management programs to increase community awareness
Local NGOs	Aims to protect and support environmentally sustainable development and conducts programs aimed at fostering CSR in term of social and environmental protection	Work either independently or in cooperation with the government to improve the environment and strengthen community understanding of climate change hazards.



Current limitations and potentials

- Poor understanding of local government to take up climate change as an issue
- number of agriculture policy related to adaptation and mitigation in changing climate is limited
- disconnection between local and national policy on climate change issue
- High dependency on outsource funding

Limitations

- Climate field school is one of pioneering activity
- Starting in 2013 local agriculture department introduce organic farming
- Apple farm as domestic tourism destination
- Adequate climate variables data from BMKG

Potentials





What are the farmer current needs

- Safeguarding Apple agriculture by changing traditional practices.
- Need of information presenting the cost / benefit in putting climate resilience agriculture practices
- Model of adaptation or actions to improve business resilience to climate change.





What are the local government current needs

- An applicable climate projections in local level
- Research on farmer adaptive capacity
- More research to understand production system (climate ready crops)
- Models to enhance adaptive capacity at field
- Supporting tools in soil and water conservation
- Recommendation on soft adaptation
- Documenting good practice



Thank you

