



Climate Smart Mitigation & Adaptation Techniques



Sangtani Women Rural Development Organization (SWRDO)

**Ph #
+92 604 688997**





Introduction

Cotton is the backbone of Pakistan Economy. For most a decade, Cotton crop has faced numerous problems and has been greatly affected due to climate change issues. There is a substantial decrease in cotton production. Pakistan economy and financial condition of the farmer is also affected badly. SWRDO Better cotton project Team prepared Climate smart cotton/Agriculture booklet and technical support is provided by Subject experts of Ghazi University Dera Ghazi Khan.

In Current scenario, Sangtani organization published this booklet under Better cotton project. Farmers can be well climate informed, reduce the weather risk to cotton crop significantly by following the guidelines of this booklet.

Sibtain Akbar Khan Jaskani
CEO (SWRDO)



Supervised By:

Mrs. Narjis Ashfaq Head of Programs SWRDO

Reviewed By:

Dr. Amjad Bashir Associate Professor Ento. GU D.G. Khan

Dr. Sagheer Atta Associate Professor PP GU D.G. Khan

Dr. Saqib Bashir Associate Professor SES. GU D.G. Khan

Edited By:

Muhammad Yousof Zahoor SPUM SWRDO

Ghulam Ishaq SPUM SWRDO



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Reduce Tillage, Save Soil Health

Save Fuel, Save Labor, Save from soil erosion, More Production, Save soil moisture. Soil organism not effect due to this.





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Save water for future generations by using it wisely

Take measures to minimize water wastage in agriculture.

Water should be reusable.

Collaborate with other organizations for better water use.

Check the moisture content of the crop with a soil moisture tester

If it needs water or not then apply water.



Save Water – Save Earth.



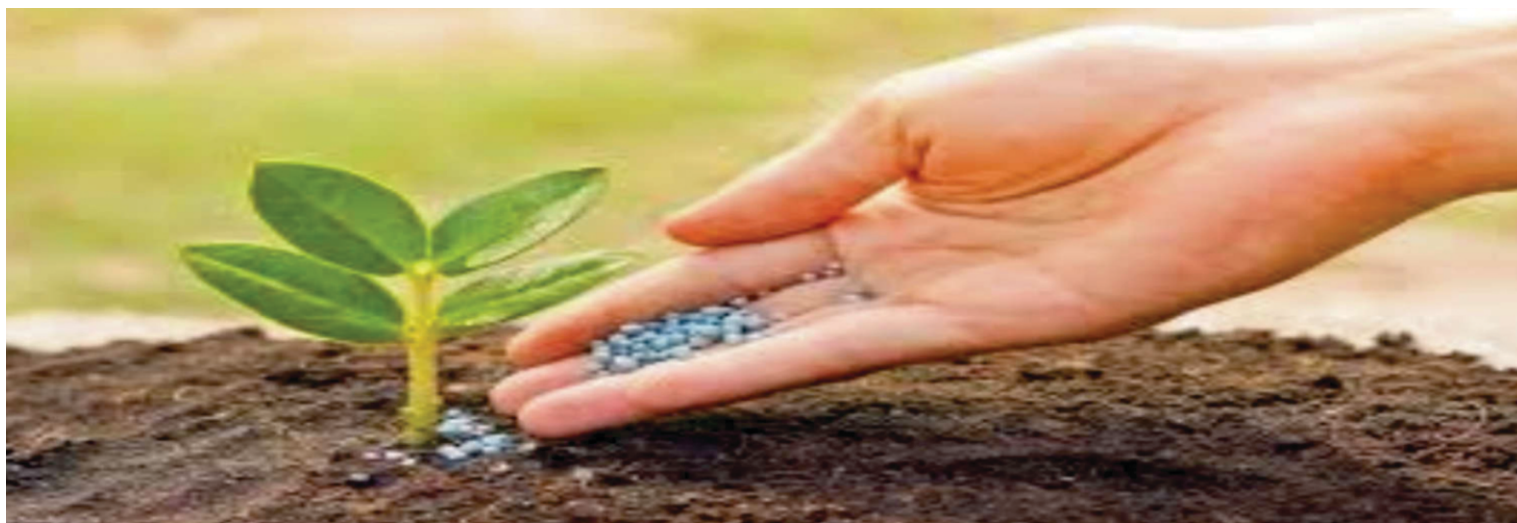
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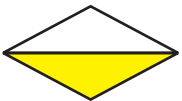

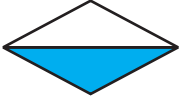


Balance Use of Fertilizer

Remember 4 Principle when applying Fertilizer

1. Right Source 2. Right Quantity 3. Right Place 4. Right Time



Check Color and Sign of Toxicity Before use of Pesticide

Sign	Label Colour	Danger Level	LD Level
 Danger Poison		Extremely Hazardous	Below 50
 Warning Poison		Highly Hazardous	200 to 2000
 Caution Poison		Moderately Hazardous	2000 to 5000
		Slightly Hazardous	Above 5000

Biological Control

Delay the first spray, it will increase the number of friendly insects in the cotton crop and the friendly insects will eat the enemy and the cost of the spray will be less and the environment will not be polluted.



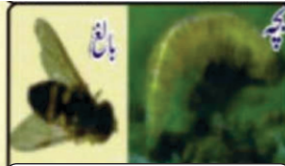
Whitefly Predator



Predator Lice



Campylomma



Hoverfly



Spider



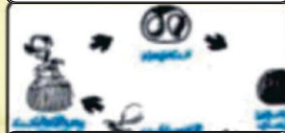
Paederinae



Mistry Bug



Wasp



Predator Life Cycle



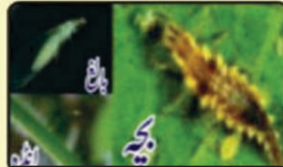
Moth Egg Predator



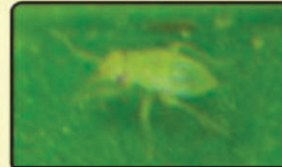
Dragon Fly



Demselfly



Crysopa



Mirid Bug



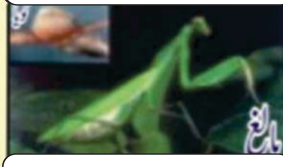
Jassid Predator



Assassin Bug



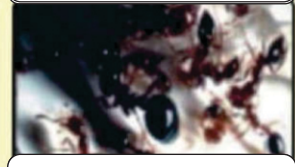
Firefly



Hierodula



Whitefly Predator



Ants



Beetle



Orison Bug



Mealy Bug Predator



Lady Beetle Bug



Big Eye Bug

Use Botanical Extract and Save Environment

Botanical sprays do not harm friendly insects and do not pollute the environment. These botanical sprays are used to repel sucking insects. Soak 600 grams of neem leaves, 800 grams of ak and 600 grams of bitter apple in water for 24 hours. Then add their solution to 100 liters of water and spray it on one acre.





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Use Local Variety

Locally produced seed is able to tolerate this environment.
And production is less affected by climate change.





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Not Burn Crop Residues

Burning of crop residue causes damage to other micro-organisms present in the upper layer of the soil as well as its organic quality.





Multiple Cropping

The practice of growing two or more crops in the same piece of land during one year, instead of just one crop. If one crop give loss due to climate change than other crop overcome this.





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Mix crop residues into the soil.

Incorporating crop residues into the soil increases soil fertility. The water storage capacity of the soil increases. Nutrient recycling occurs.





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Crop Rotation and Increase Soil Health

Crop rotation increases the fertility of the soil. Nutrient recycling occurs. Crop production increases. The pressure of insects attacking a crop is reduced.





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Grow Trees, reduce Environment Temperature

It produce Oxygen. Reduce temperature.
Reduce pressure of storm and swarm. Produce
food and shelter of organism.



If you want to hear beautiful sound of birds, than not buy cage, grow trees.





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Install Solar Tube-well and Reduce Pollution and save expense





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Use FYM and Make soil health better





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Take the following steps to avoid the effects of climate change

- Select heat tolerant crop varieties like CRIS-342, NIA-Perk and CRIS-134
- Grow vegetables and short stature and early maturing crops that are less affected by weather
- Promote Tree plantation to reduce storms, soil erosion and temperature so that soil fertility can be conserved.
- Use organic mulching (rice straw, straw etc.) on cotton farm so that it reduces water evaporation and conserve soil moisture
- Establish small ponds to prevent rainwater losses
- Adapt Crop rotation and growing of leguminous crops (*Sesbania bispinosa*, soybean, *Barseem (trifolium alexandrinum)*, Lucerne (*Medicago sativa*) will increase soil fertility.



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- Minimum or No tillage can lead to enhance soil moisture conservation and improves soil fertility
- Installation of solar tube wells will reduce carbon emissions by eliminating diesel application
- Use bio-fertilizers and pesticides to reduce adverse environmental impacts
- Rearing of livestock and growing of crops to increase income and improve the soil health.
- Use modern technology for weather forecasting to know weather conditions on time
- Use laser land leveler to minimize irrigation losses
- Irrigate cotton crop in consultation with agri. Deptt.



SWRDO Introduction



Sangtani Woman Rural Development Organization (SWRDO) is a non-profit non-religious and non-political organization. Which works only for human welfare and development without discrimination for the sustainable development of the people in different parts of Pakistan and in general in South Punjab and District Rajanpur through a peaceful environment. This institution is Certified by Pakistan Centre for philanthropists (PCP). Transparency and accountability are always kept in mind, besides this institution has signed an MOU with the Economic Affairs Division (EAD) to work across Punjab. Since its inception, Human Rights Advocacy has been striving to raise awareness and promote access to basic amenities such as education, health, clean drinking water, skill development projects, a clean environment, and free legal aid. , livelihood, and disaster response services such as emergency relief and rehabilitation activities. In addition, the Sangtani Organization is working with small farmers in rural areas, especially women farmers. The main objective of Sangtani Women Rural Development Organization is to promote sustainable development through agriculture and improve the quality of life of small farmers and poor people. Sangtani Women Rural Development Organization strongly believes that women's participation and



Sangtani

Sangtani Women Rural Development Organization Street No. 3 Bodla Colony Rajanpur

Website: www.sangtani.org.pk Contact: +92-604-688997