

“We are healthier with fewer chemicals and more environmentally sound cotton”

COTTON HAS BEEN USED as a fibre in clothing and textiles for more than 5 000 years. But its popularity and its dazzling white surface have a downside. Cotton is a thirsty crop which often requires large quantities of water and chemicals during cultivation. This results in negative effects for the environment and for people’s health. For the last three years, WWF and IKEA have run a joint project to support more sustainable cotton production in the Warangal district of the Indian state of Andhra Pradesh.

“Our goals included reducing the use of water, chemical spraying and chemical fertilisers whilst increasing family incomes. We have managed to break many trends and we have great hopes for the future,” says Vamshi Krishna, project manager, proudly.

Cotton boom

The mid 1990s saw a cotton boom in India and the cotton growers in Warangal expanded the area of cultivation. Many farmers took out loans but the competition from American cotton growers with huge subsidies lead to a fall in prices. Drought and pest outbreak contributed to crop failure and poor yields in the early 2000s. A wave of suicides was triggered. After this, many farmers chose to use new types of cotton and seeds which were resistant to insect attacks.

22 year old Chiranjeevi Rnukuntta in the village of Shyampet is one of those who had to live with the consequences of those difficult times. His parents committed suicide, one after the other, in 2001 and 2002. They had



borrowed money during the drought and could not repay it.

“I had two younger sisters to care for and I had to take care of everything. It took me three years to get back on my feet. But now I believe in myself

and my future,” says Chiranjeevi, who combines studies with farming cotton part time.

By: Marie von Zeipel, WWF
Photo: Richard Vincent





Purushotham Reddy

Cotton grower in the village of Teherapur. Winner of the award for 'Farmer of the Year 2009'

"By forming an association for cotton growers we have been able to work together and find common solutions. We have managed to cut down on the costs of pesticides and family incomes have increased. In the future we hope that the project will contribute to better education and health."



Cotton growers test new approaches – Better Management Practices (BMP)

THE WWF AND IKEA PROJECT for more sustainable cotton production started in 2006 on a small scale with around 40 families. Today, the project covers 18 villages and around 600 farmers are involved. Approximately 6 000 cotton grovers and villagers have taken part in meetings and the number increases all the time. Andhra Pradesh is a state that traditionally uses a great deal of water for irrigation and is responsible for one quarter of India's total chemical use. New methods are needed to face the challenges of the future and to avoid the current situation becoming worse.

When the project began in 2006, the cotton growers formed a cooperative. The members discuss issues such as what can be bought in collectively and how the chain from cultivation to market can be made more effective.

"It is so positive that we can find solutions and make decisions together. All sorts of issues are handled, from insect control and drinking water quality to how we can get better prices from the buyers and increase our incomes," Purushotham Reddy explains. At the beginning of 2009 he won the 'Farmer of the year' award from the Warangal district authorities.

An important key to the change has been the opportunity for the families to receive training at the project's Farmer Field School. The training course runs for 20 weeks during the high season from August to November. The participants meet twice a week to learn more about cultivation techniques, water and environmental issues. The model used in the Warangal project is called Better Management Practices (BMPs) and

involves adapting cultivation methods to increase yields, minimise environmental effects and achieve best possible social conditions for the farmers. Amongst other things, the cotton growers work with trial plots where they test co-planting of crops, look at which pests are active and use biological pesticides. For example, growing maize and cotton close to each other is a way of reducing insect damage.

"Come and see!" shouts project manager Devender Reddy and beckons us over to a test area where a yellow plastic screen is hanging. "This screen secretes a fragrance – pheromones – which attract insects. We can see whether the number of insects is increasing or decreasing. The farmers use the information to decide what type of pest reduction measure they want to use."



Lower water and chemical consumption

THE COTTON PLANT has long growing and flowering seasons and this makes the plant sensitive to insect damage. In the past, the farmer would spray their plants 20–40 times per season; today they spray 6–7 times per season. They often use plant-based preparations – amongst others, from the neem tree and extract of vitex – and biological control, with “good” beetles that eat up the pests.

Out in the scorching sun of the cotton fields, Ravinder and Rajita Nandsee work on the harvest, dressed in beautiful colourful clothes. They have three children and earn around 150 000 rupees per year – the equivalent of 3 500 US dollars. The daily wage for a cotton picker is around 1–4 US dollars.

“Last year was a good year. We could work without any toxic chemicals. It’s good for our health to use less chemicals,” says Rajita, who hopes for more investment in water and toilets in the villages. People currently have to buy jugs of drinking water that are driven to the village. “In the future we hope that we can increase our income so that we can pay for a good education for our children.”



“We have broken the negative trend and our next goal in the project is to reach 5 000 cotton growers.” Vamshi Krishna is project manager.



Cotton farmers hold a meeting in the village of Teherapur close to Warangal, Andhra Pradesh, India.

Facts about WWF’s and IKEA’s cotton project

WWF’s cotton project is part of an investment in more sustainable cotton production (India Sustainable Cotton Initiative). It has been carried out with the support of IKEA between 2006 and 2009.

An important part of the work are Farmer Field Schools in India and Pakistan, run by WWF and IKEA. There, the cotton farmers learn how to use water, pesticides and fertilisers more efficiently and in ways that are safer for both people and the environment.

Better for the environment and for health

Water problems are on the increase in India. Groundwater is declining in many areas and cotton is one of the thirstiest agricultural crops. New ways of thinking are needed to cope with future climatic changes. The cotton growers mainly use rainwater stored in tanks to water their crops, but this is often not enough. So in Warangal, the farmers have invested in drip irrigation. They also treat the soil before sowing by ploughing and applying compost and silt, which helps the soil to retain water.

The results (see next page) so far are very positive. Water consumption and the use of chemicals and artificial fertilisers have fallen substantially.

“We have broken the negative trend and our next goal in the project is to increase the number of cotton growers from the present 600 to 5 000,” concludes Vamshi Krishna, project manager.



Rajita Nandsee

Cotton grower, 25, in the village of Nizampally

“By preparing the land in different ways we have managed to reduce the amount of artificial fertilisers and chemicals. And it’s much better for our health. We are also offered training at the project’s Farmer Field School. The women that can’t attend in the mornings are offered evening lessons.”



WWF and IKEA are working for more sustainable cotton production in India

What has the cotton project meant for you and your village?

Padma Meruga

Cotton grower, 35,
in the village of Shyampet

“Last year was a good year. We received help in making alternative biological insecticides from extracts of the neem tree. We could then spray the powder on the cotton. We also managed to reduce our water consumption by 50 percent by using drip irrigation. The project also helped us to start a compost system which helps to improve the nutrient content in the soil. I hope that we can soon start to save some money for our children’s futures.”



Chiranjeevi Rnukuntta

Cotton grower and student, 22,
in the village of Shyampet

“2002 was a hard year and the cotton harvest was destroyed by pests. My parents were in debt and they committed suicide. It took me three years to deal with the loss and to face going on. Nowadays I feel much more positive and I believe in myself. I still have some land left and I am going to invest in better seeds to improve the harvest. I am going to grow both cotton and maize.”



THE FIBRES FROM COTTON have been used by mankind for more than 5 000 years – to make clothes, textiles and technical products.

FOUR KINDS OF COTTON BUSHES are grown commercially, in subtropical and tropical areas in more than 100 countries. China, USA, India and Pakistan are responsible for 70 percent of global production and for 56 percent of consumption.

GLOBALLY, SEVERAL HUNDRED million people are directly or indirectly dependent on cotton production. In India, 30 percent of the population are dependent on cotton production and the country has one million cotton growers.

COTTON, RICE AND SUGAR are amongst the world’s crops that require most water. Artificial irrigation is often necessary and large quantities of agricultural chemicals are used. 25 percent of the insecticides sold on the market are used to spray cotton.

THE STATE OF ANDHRA PRADESH consumes 25 percent of India’s total use of pesticides. People who are exposed to such chemicals are subject to serious health risks.



Cotton on its way to the market in an auto-rickshaw.



Tractor drivers surrounded by cotton are waiting on the road. Patience is needed when transports often get stuck in traffic jam.





WWF/IKEA's cotton project in Warangal, India – Specific results 2006–2009

- Water consumption has, on average, fallen by 50 percent since the project began, compared to water used by conventional farmers
- The use of pesticides and insecticides has gone down dramatically – a fall of 94 percent for non-GM (Genetically Modified) cotton and 50 percent for GM cotton (compared with control groups).
- The use of artificial fertilisers has decreased by around 30 percent.
- The quantities of toxic and eutrophying substances released into the fresh water reservoirs and estuaries of the Godavari and Krishna rivers have diminished.
- Farmers have increased their net yield to between 1.51 and 1.71 compared to conventional farmers (1.31).
- Better health as the use of toxic chemicals declines – fewer cases of illnesses related to pesticides
- By forming a cooperative, the farmers have been able to negotiate better prices for their crops and increased their influence
- Better understanding of cultivation techniques and the environment through training at the Farmer Field School.

What has the cotton project meant for you and your village?

Komuraiah Ramisetty

Cotton grower, 70,
in the village of Gangireni Gudem

“Farmers’ attitudes to the use of chemicals have changed since the project began. Their health has improved and the negative effects from the pesticides are less common. Everyone thinks about the environment today. I am positive about the project’s future.”



Jinna Rajender Reddy

Chairman in the local
government council, Teherapur

“More and more growers have joined us in the project. Awareness about the environment and health has improved. In the past, many people used chemicals because they just followed the advice from the chemicals industry. Now we have learnt how to use biological methods and we can make decisions by discussing different solutions together. We hope to be able to work more with social issues too, and to improve drinking water and toilets.”



Devender Reddy from WWF
with a pheromone trap.

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