



SOLVAY

asking more from chemistry®

MORE FUTURE

LET'S CREATE MORE FUTURE WITH

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**SUSTAINABLE
GUAR INITIATIVE**

GUAR, A NATURAL SOURCE OF POLYMERS

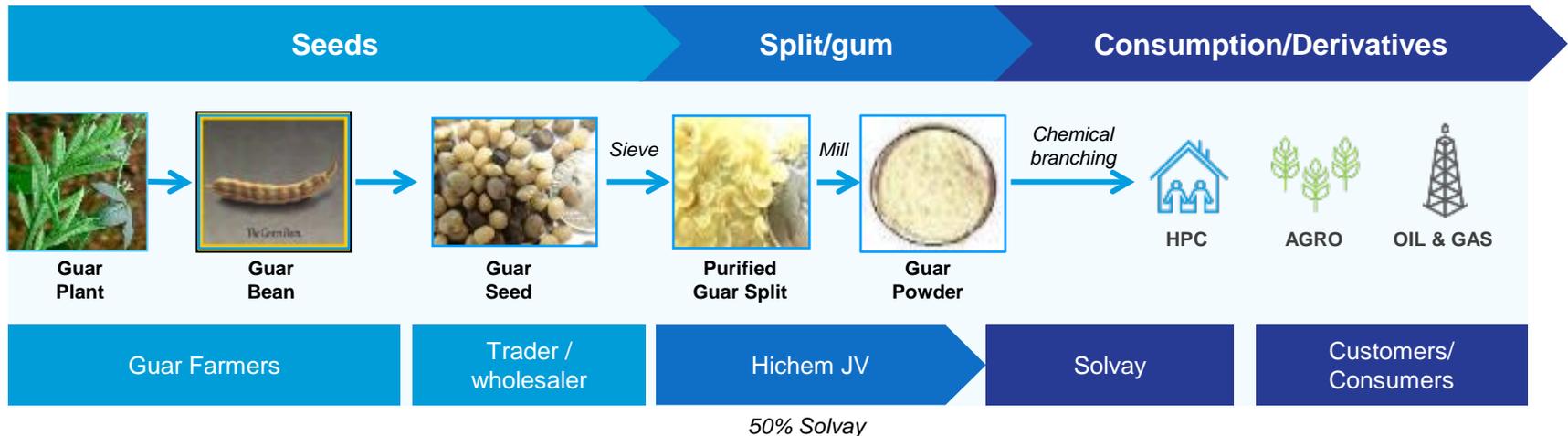
NOVECARE, A LEADER IN GUAR DERIVATIVES

- Solvay is the major global player with ~30% of total capacity
- Global footprint : 3 plants (China, France, US) and 2 labs (US, China)
- Solvay is the sole major back-integrated producer on the market

GUAR PROPERTIES

- Natural raw material, renewable resource
- Water-soluble polymer without heating
- Galactomannan bringing many functionalities: conditioning, softening, gelling, water retention...
- High stability of solutions across wide range of conditions
- High molecular weight

THE GUAR SUPPLY CHAIN



WHY A SUSTAINABLE SOURCING PROGRAM OF GUAR ?

AMBITION

Create a **sustainable guar value chain**, enhancing the **livelihood** of local **guar farmer communities** in Rajasthan

SOLVAY LEGITIMACY

- 50+ years of experience
- Long standing partnerships throughout the supply chain
- Knowledge to effectively integrate sustainability principles



BENEFICIARIES AT LOCAL LEVEL

- ✓ Guar farmers: among the poorest in the world in need of more sustainable farming practices -> **Good Agricultural Practices** in line with FAO code of conduct
- ✓ Women – **agent of change** : access to trainings and skills leads to strong positive impact on growth and on the health and progress of their families and communities.

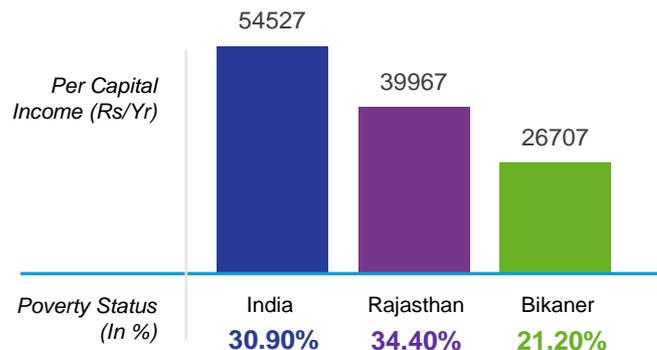
BENEFITS FOR OUR CUSTOMERS

- ✓ Responsible sourcing of natural feedstock
- ✓ Traceability of the supply chain
- ✓ Quality & security of supply
- ✓ Positive impact on corporate reputation



THE REALITY ON THE GROUND

- **India:** produces 80% of world supply : 2+ million guar farmers
- **Bikaner area (Rajasthan)**
 - Impoverished region
 - ~80% of population depends on agriculture
 - Produces ~29% of Guar grown in Rajasthan
 - **93% is rainfed** ; only 7% is under irrigation
- **Guar :** drought prone crop and sustainable source of income
- **Climate:** frequent **droughts** and extreme weather conditions : 263 mm rainfall across 16 days / year
- **Environment :** **poor fertility** of soils, low water retention capacity ; poor quality of ground water



BIKANER, RAJASTHAN STATE



ASSESSMENT STUDY FINDINGS

AGRONOMY



- **Lack of technical knowledge** on best cultivation practices
- **Non-availability** of appropriate agricultural implements
- **Crop damage** due to dune movement and lack of timely rainfall
- **Low productivity**
- **Non-remunerative** market price

MARKETS



- **Complexity** of guar supply chain
- **Uncertain** market prices
- **No assured** buyback arrangement
- **Lack of knowledge** on grades and standards, village level aggregation etc.

SOCIAL



- **Frequent** occurrence of common **diseases**
- **Lack of** awareness on balanced diet and **nutrition**

ENVIRONMENT



- **Scarcity of water**
- **Less tree** cover in fields
- **Erosion** of top soil due to constant sand dune movement



SUSTAINABLE
GUAR INITIATIVE

IMPROVING GUAR FARMERS' LIVELIHOOD

Launched by Solvay, the Sustainable Guar Initiative aims at creating a sustainable value chain for guar while enhancing farmer's standards of living in India's desert region of Bikaner.



2-YEAR OF TRACK RECORD AND NEXT STEPS



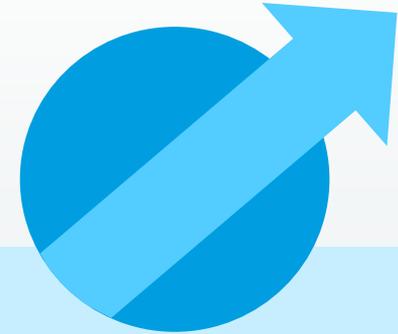
TRAINING MODULES

- 88% of farmer satisfaction
- 75% of willingness to adopt Good Agricultural Practices
- Yield increase : up to 45% on average



WOMEN EMPOWERMENT & KITCHEN GARDENING

- **Women participation** rate in training beyond expectations
- 11 types of vegetables grown
- 911 kg of fresh vegetables in the last quarter
- ~600 rupees of savings per households



NEXT STEPS

- **Scale-up through** on-boarding of additional partners / fund raising
- **Traceability system** implementation
- **Preparation for self-sustaining program**
 - Farmer champions
 - Producer groups

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