



# Caña Brava

**Impulsando la producción agrícola del Valle del Chira**







# THE CHIRA RIVER VALLEY, 60 KM AWAY FROM PIURA, NORTH OF PERU





**AN UNFRIENDLY, MOSTLY DESERTED  
AND DESOLATED LAND**





**AN UNEXPLOITED AND RICH SOIL, WITH LIMITED  
ACCESS TO IRRIGATION WATER**





A RURAL REGION, WHERE  
PEOPLE STILL LIVES IN POVERTY





IN SIMPLE SHELTERS , MOST OF THEM WITH NO  
ELECTRICITY





NOR RUNNING WATER, NOR SEWERS





WITH BASIC MEANS OF TRANSPORTATION AND  
COMMUNICATION SERVICES





AND HEALTH AND EDUCATIONAL  
CENTERS STILL NEED PROGRESSING





**IN 2006 THE ROMERO GROUP BEGINS A  
PIONEER PROJECT IN THE REGION**





**A NEW BIO-REFINERY TO PRODUCE 25,000,000 GPY OF  
FUEL GRADE ETHANOL FROM SUGAR CANE**





**AN IMPOSSIBLE MISSION WITHOUT THE VISION OF THE  
PROMOTERS AND FAITH OF THE LOCAL POPULATION**





**EXISTING WATERWAYS ARE MODIFIED TO HANDLE THE  
FLOW NEEDED IN THE CANE FIELDS**





**RESERVOIRS ARE BUILT TO SETTLE AND TREAT THE  
WATER TO BE PUMPED INTO THE PLANTATION**





PUMPING STATIONS ARE INSTALLED TO DISTRIBUTE WATER AT A RATE OF NEARLY 12,000 M<sup>3</sup>/HA PER YEAR





**FIELDS ARE FLATTENED AND PREPARED  
TO RECEIVE THE SEED**





**DRIP IRRIGATION SYSTEMS ARE EMPLOYED TO REDUCE  
THE CONSUMPTION OF WATER AND FERTILIZERS**





43,000 KM OF WATER PIPES ARE LAID DOWN TO COVER  
THE 6,500 HECTARES OF SUGAR CANE





**SEVERAL CANE VARIETIES ARE PLANTED TO TEST  
PRODUCTIVITY AND LIMIT PEST RISKS**





**BENEFICIAL INSECTS ARE PRODUCED IN LARGE SCALE  
TO CONTROL PESTS**





**THE BIOLOGICAL CONTROLLERS ARE INNOCUOUS TO  
MEN AND REPLACE PESTICIDES**





24 MONTHS OF HARD WORK BRING THE DESERT INTO LIFE.  
WITH IT THE HOPES OF PROGRESS OF THE LOCAL COMMUNITY





**6,500 HA OF WASTELAND ARE CONVERTED INTO A  
PRODUCTIVE GREEN VALLEY**





THE CANE AT MATURITY OBSERVE THE COMMON 3-3-3  
RULE, 3 M HIGH, 3 CM WIDE, 3 KG





THE PLANTATION ACHIEVES OUTSTANDING RESULTS. AVERAGE  
PRODUCTION OF 130 T/HA WITH 15% SUCROSE





**UNI-SYSTEMS IS SELECTED AS CONTRACTOR  
FOR THE INDUSTRIAL PLANT**







**THE DISTILLERY IS DESIGNED, CONSTRUCTED  
AND COMMISSIONED IN 22 MONTHS**





**WITH A PROCESSING CAPACITY OF 4,000 TON OF CANE  
PER DAY, OPERATING 315 DAYS PER YEAR**





PRODUCING 30 MM GAL/Y OF ETHANOL  
AND 90,000 MWH/Y OF ENERGY





THE FACTORY PRODUCTION LINE IS A BENCHMARK  
OF EFFICIENCY AND RELIABILITY





THE SUGAR CANE IS RECEIVED AND WEIGHED,  
SAMPLES ARE TAKEN FOR LAB TESTS





THE CANE UNLOADED, DIRT IS SEPARATED  
THEN PROPERLY PREPARED





JUICE IS EXTRACTED AND CLARIFIED. THE  
BAGASSE IS DRIED TO 50% MOISTURE





THE CLEAR JUICE IS HEATED AND  
EVAPORATED





THEN FERMENTED IN A CONTROLLED ENVIRONMENT  
WITH YEAST SUITABLY TREATED





THE RESULTING BEER IS DISTILLED TO ETHANOL THEN  
DEHYDRATED IN MOLECULAR SIEVES





**STEAM IS GENERATED AT HIGH PRESSURE AND  
TEMPERATURE IN A BAGASSE FIRED BOILER**





ELECTRICITY TO POWER THE FACTORY MOVERS AND THE PLANTATION, IS GENERATED IN STEAM TURBINES





RAW WATER IS SUITABLY TREATMENT FOR USE AS  
PROCESS OR COOLING WATER





POWER IS DISTRIBUTED THROUGH SUBSTATIONS TO THE EACH FACTORY AND PLANTATION LOAD POINT





**THE FACTORY IS TOTALLY AUTOMATED AND  
CONTROLLED FROM THE OPERATING CENTER**





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ECONOMIC, SOCIAL  
AND ENVIRONMENTAL FACTS





THE ETHANOL OUTPUT REPLACES GASOLINE  
PRODUCED BY 2,000,000 BARRELS OF OIL A YEAR





THE ANNUAL GROSS OPERATING REVENUES FROM  
ETHANOL AND POWER EXCEEDS 100,000,000 USD





250 PERMANENT JOBS ON PERMANENT BASIS WERE  
CREATED TO OPERATE AND MAINTAIN THE FACTORY





AND ALMOST 1500 PERMANENT JOBS FOR THE FIELDS,  
IRRIGATION, HARVESTING AND TRANSPORTATION





THE DIRECT AND INDIRECT NUMBER OF JOBS  
GENERATED IN THE REGION EXCEEDS 7,000.





**FACTORY PERSONNEL HIRED WITH BASIC SKILLS HAVE  
BECOME EXPERIENCED PROFESSIONALS**





**600,000 TON OF CO<sub>2</sub> ARE REMOVED EVERY YEAR FROM  
OUR SKIES BY PHOTOSYNTHESIS IN THE PLANTATION**





WE ARE PROUD OF OUR CONTRIBUTION TO THE  
SUCCESS OF THIS CAPTIVATING PROJECT

