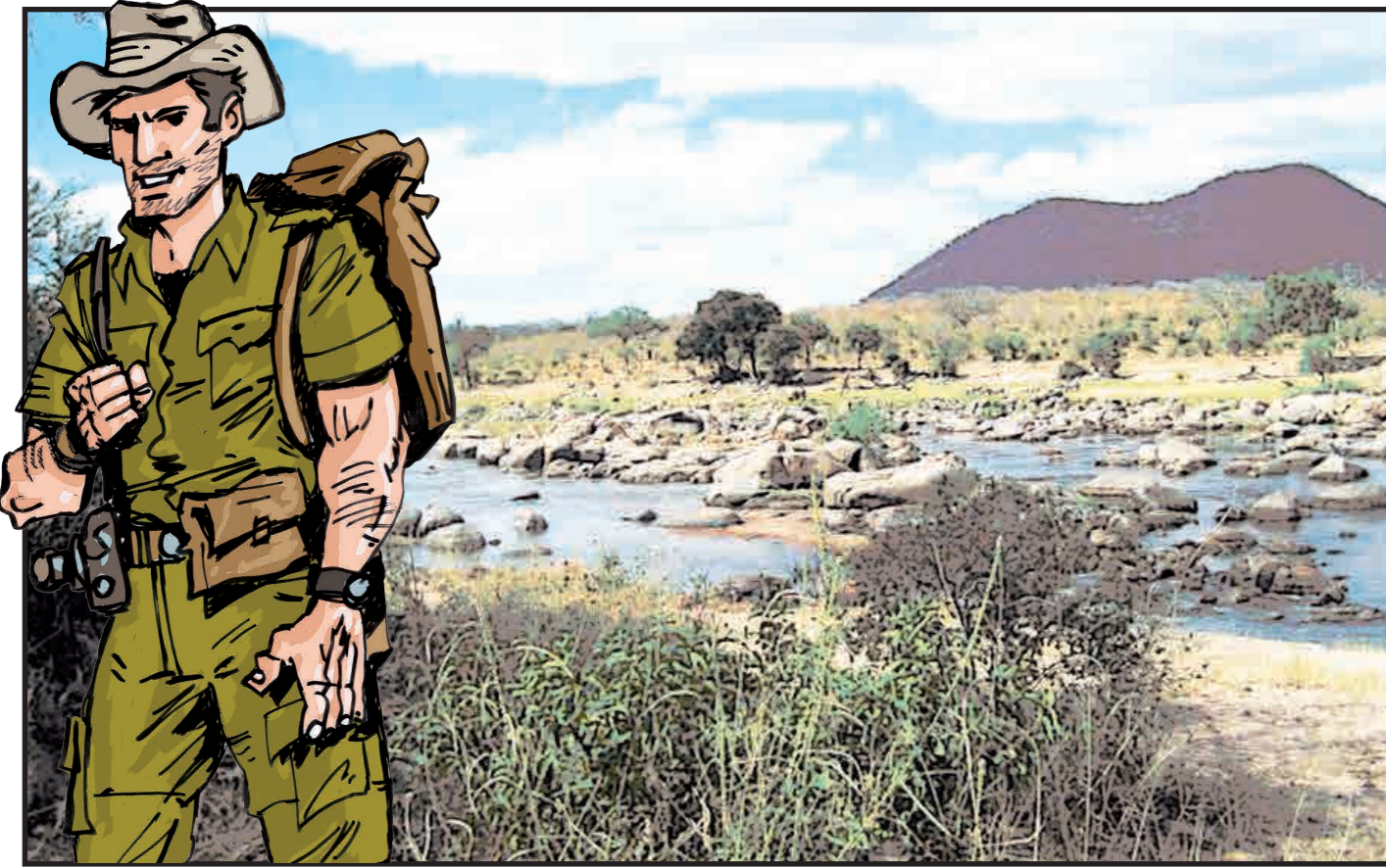


# Ihanzutwa Project

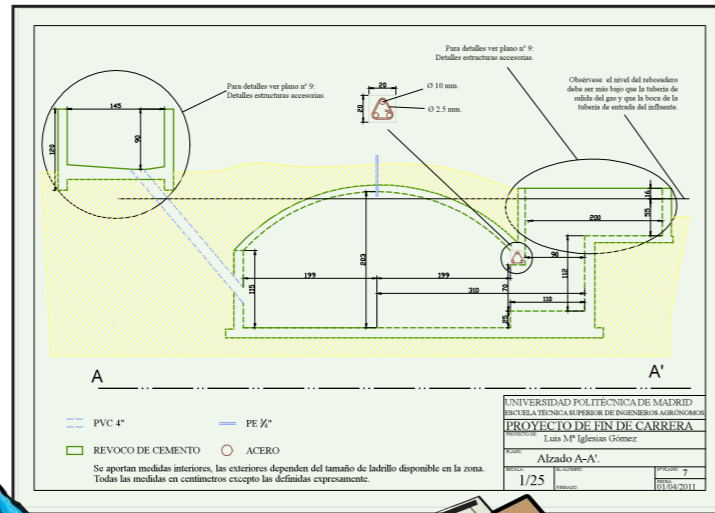
**DESIGN AND CONSTRUCTION OF AN ANAEROBIC DIGESTOR  
IN THE IRINGA REGION (SOUTHERN TANZANIA-AFRICA)**

**School of Agricultural Engineering (ETS de Ingenieros Agrónomos)**

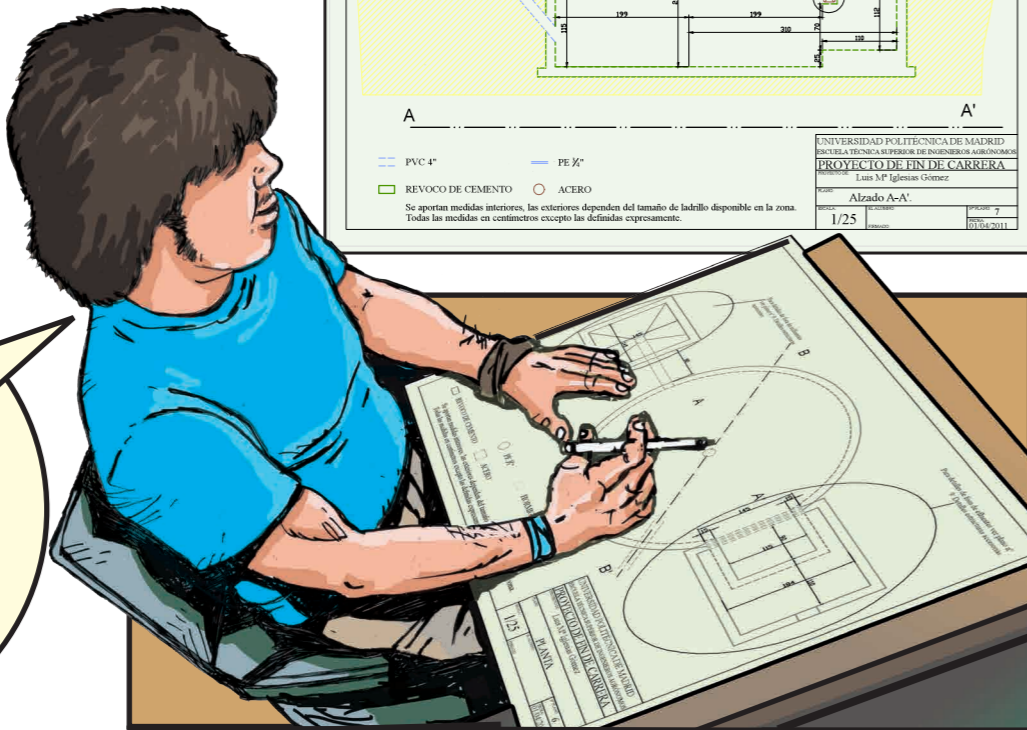
IN 2005, LUIS IGLESIAS GÓMEZ, AN AGRICULTURAL ENGINEER FROM THE UNIVERSIDAD POLITÉCNICA DE MADRID, STARTED, IN PARTNERSHIP WITH AGRÓNOMOS SIN FRONTERAS (ASF), A NON-GOVERNMENTAL ORGANIZATION OF AGRICULTURAL ENGINEERS FOR DEVELOPMENT, TO SHAPE, DEFINE AND DEVELOP THE THEORY BEHIND THE IHANZUTWA PROJECT. THE AIM OF THE PROJECT WAS TO DESIGN AND DEPLOY AN ANAEROBIC DIGESTOR OF ANIMAL WASTE.



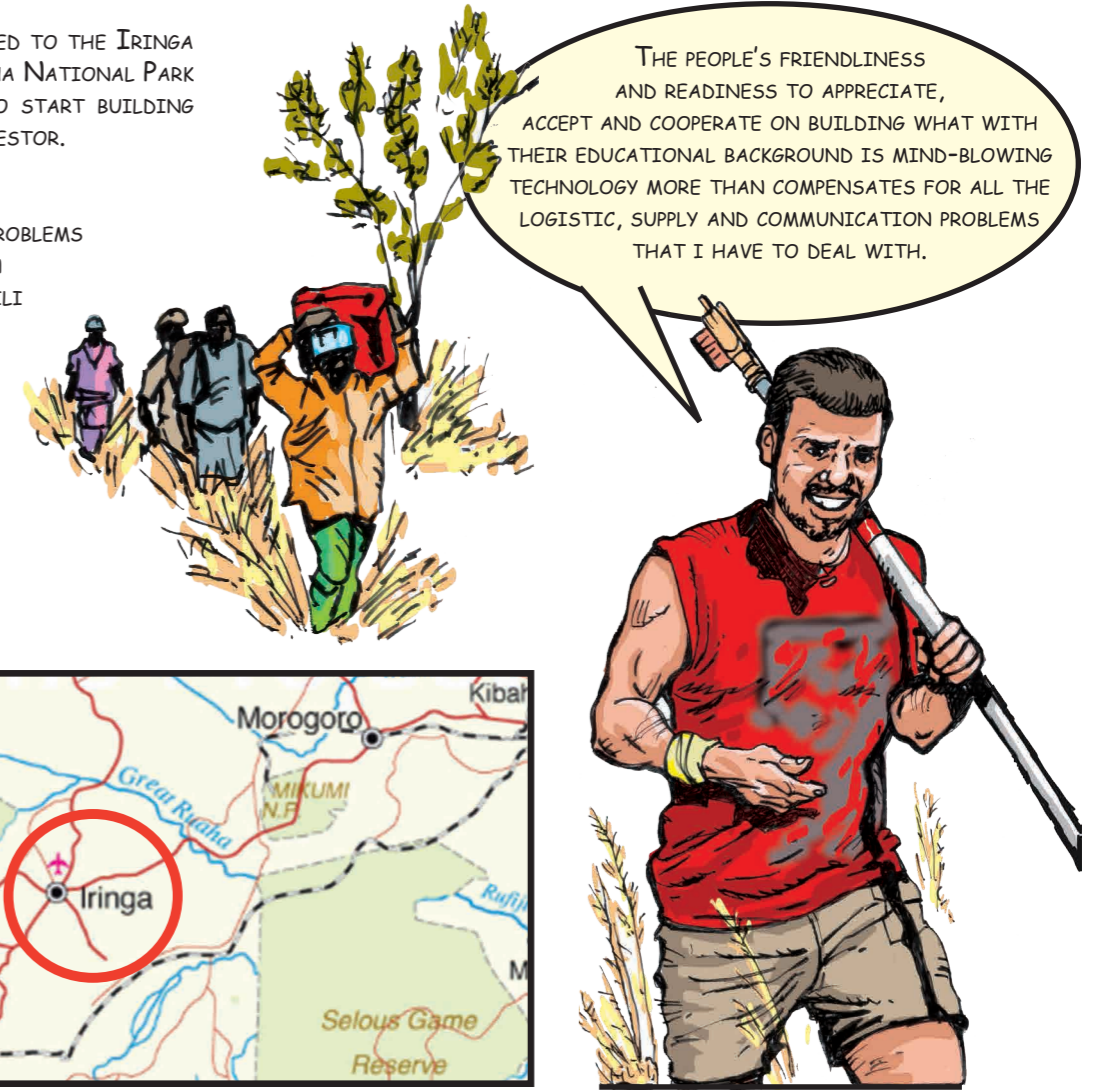
LUIS IGLESIAS:  
 "THE PROJECT TOOK SHAPE UNDER THE DIRECTION OF MY SUPERVISOR, PROF. JESÚS VÁZQUEZ MINGUELA, A SPECIALIST IN THE FIELD, AND WITH THE HELP OF OTHER MEMBERS OF THE UNIVERSIDAD POLITÉCNICA DE MADRID (AGRICULTURAL ENGINEERS, AGRICULTURAL TECHNICIANS, ARCHITECTS...). BOTH THE EMPLOYMENT OF LOCAL BUILDERS AND THE TRAINING OF THE LOCAL WORKFORCE WERE TO PLAY AN IMPORTANT ROLE IN THE PROJECT IN ORDER TO MAXIMIZE THE POSITIVE IMPACT AND REPLICABILITY OF THE PROJECT IN THE REGION."



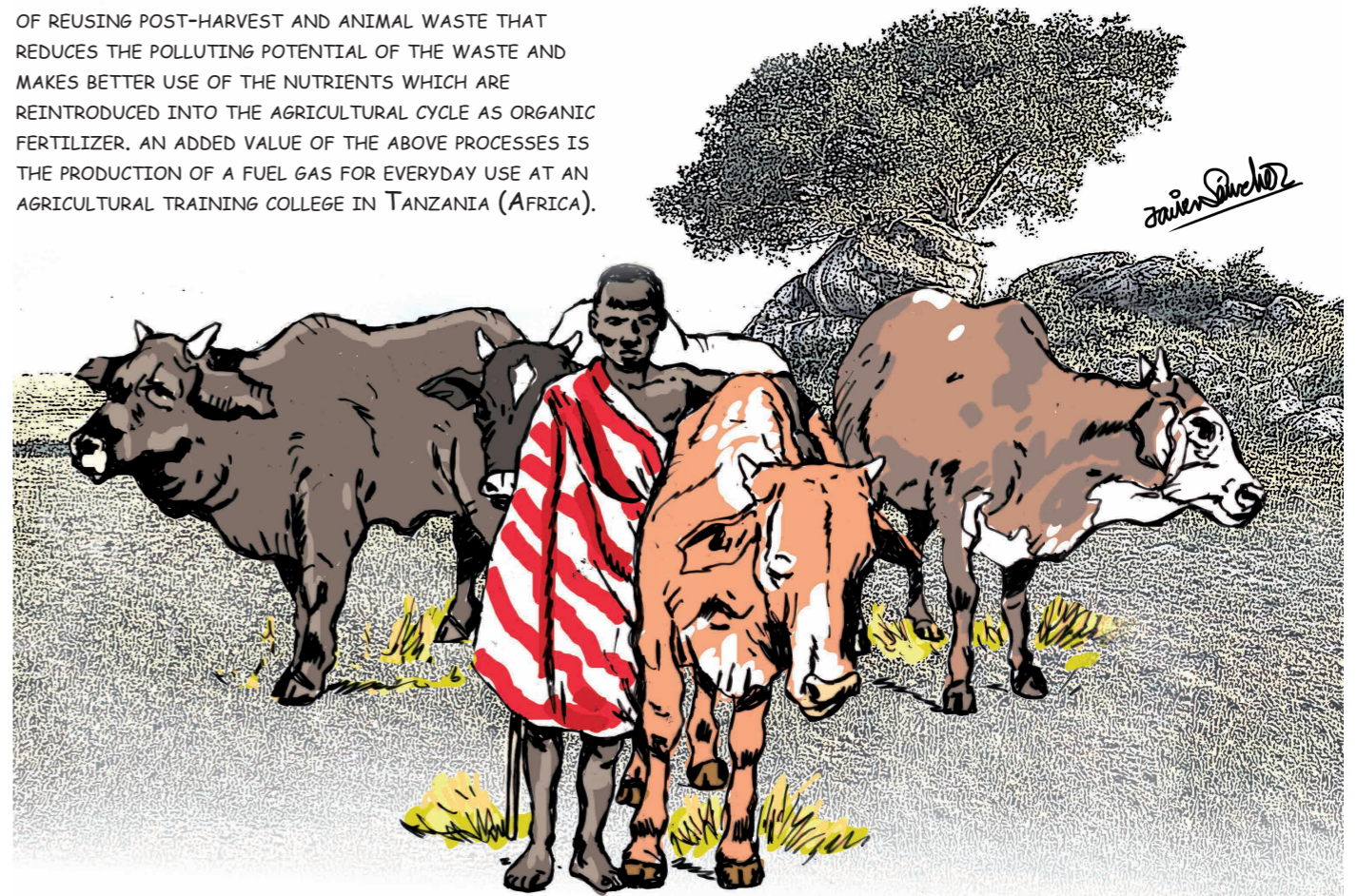
THE PLANS WERE DRAWN UP AT ASF'S OFFICE IN THE SCHOOL OF AGRICULTURAL ENGINEERING'S LIBRARY. THEY WERE DEFINED AND DESIGNED TO BE PERFECTLY LEGIBLE FOR PEOPLE UNACCUSTOMED TO READING BUILDING PLANS.



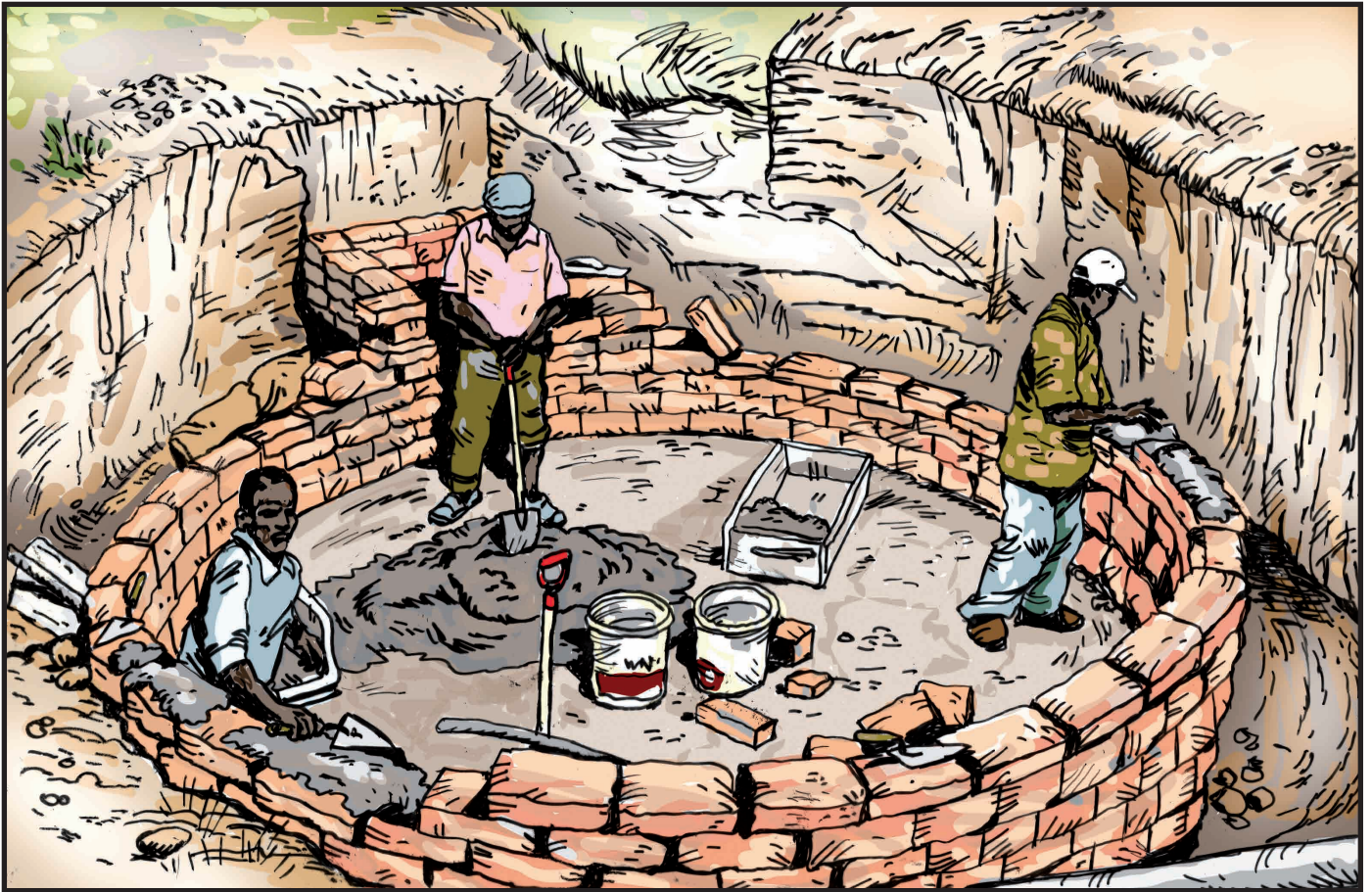
IN JUNE 2007, WE TRAVELLED TO THE IRINGA REGION, NOT FAR FROM RUAHA NATIONAL PARK IN SOUTHERN TANZANIA, TO START BUILDING WORK ON THE ANAEROBIC DIGESTOR. THE EDUCATIONAL LEVEL OF THE LOCAL BUILDERS WAS LOW, AND THERE WERE PROBLEMS OF COMMUNICATION EARLY ON (THE VILLAGERS SPOKE SWAHILI OR OTHER LOCAL LANGUAGES, AND ONLY A HANDFUL OF SECONDARY SCHOOL PUPILS HAD ANY NOTIONS OF ENGLISH), WHICH MEANT THAT THE PLANS HAD TO BE EXTREMELY CLEAR AND EASY TO UNDERSTAND.



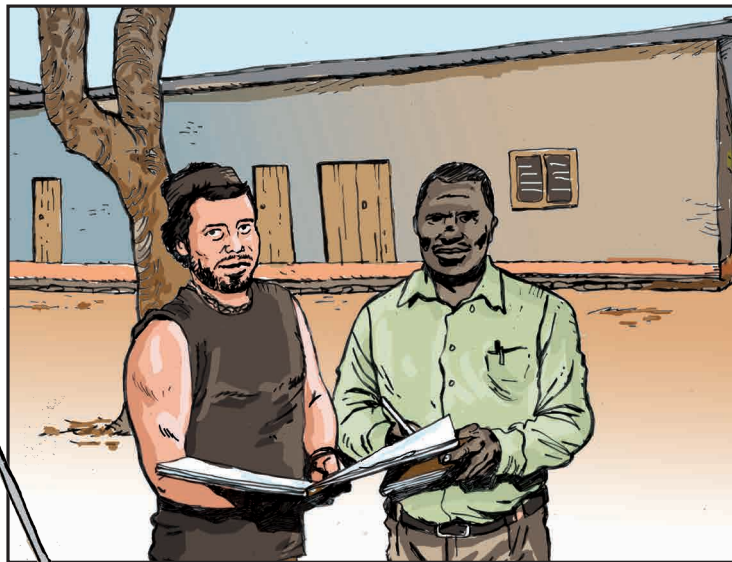
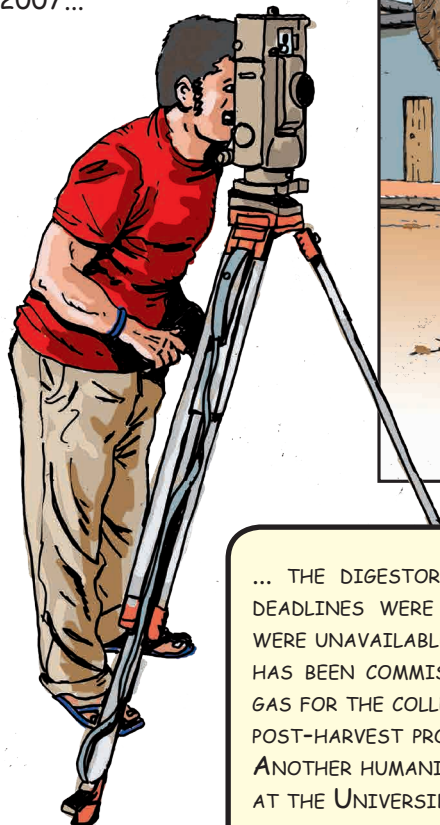
THE ANAEROBIC DIGESTION OF FARM WASTE IS A MEANS OF REUSING POST-HARVEST AND ANIMAL WASTE THAT REDUCES THE POLLUTING POTENTIAL OF THE WASTE AND MAKES BETTER USE OF THE NUTRIENTS WHICH ARE REINTRODUCED INTO THE AGRICULTURAL CYCLE AS ORGANIC FERTILIZER. AN ADDED VALUE OF THE ABOVE PROCESSES IS THE PRODUCTION OF A FUEL GAS FOR EVERYDAY USE AT AN AGRICULTURAL TRAINING COLLEGE IN TANZANIA (AFRICA).



THANKS TO AN IMPROVISED GLOSSARY (WHICH WAS ADDED TO DAILY), WE WERE ABLE TO MEET THE STIPULATED DEADLINES, ENTHUSIASTICALLY WORKING SHOULDER TO SHOULDER TO COMPLETE A PROJECT THAT WAS TO INTRODUCE TIME- AND LABOUR- SAVING CLEAN TECHNOLOGY THAT WOULD BE BENEFICIAL ALL ROUND.



THE DIGESTOR WAS FINISHED BY OCTOBER 2007...



.... AND IN DECEMBER 2009 WE STARTED TO BUILD AND EQUIP THE ITUNUNDU AGRICULTURAL TRAINING COLLEGE IN PAWAGA, IRINGA.

BETWEEN JUNE AND OCTOBER 2012, WE FINALLY MANAGED TO START UP THE DIGESTOR...

... THE DIGESTOR WAS NOT OPERATIONAL UNTIL THEN BECAUSE DEADLINES WERE MISSED AND RESOURCES (NOTABLY LIVESTOCK) WERE UNAVAILABLE. NOW THAT THE DIGESTOR HAS BEEN COMMISSIONED, IT IS PRODUCING A STEADY SUPPLY OF GAS FOR THE COLLEGE. THE SURPLUS IS USED TO IMPLEMENT POST-HARVEST PROCESSES (MOTIVE POWER AND HEAT FOR DRYERS). ANOTHER HUMANITARIAN ACHIEVEMENT BY ENGINEERS TRAINED AT THE UNIVERSIDAD POLITÉCNICA DE MADRID

