

Novozymes and Low Carbon Solutions

The Challenge

Decouple growth from resource use and meet the World's need for sustainable, renewable energy, products and chemicals



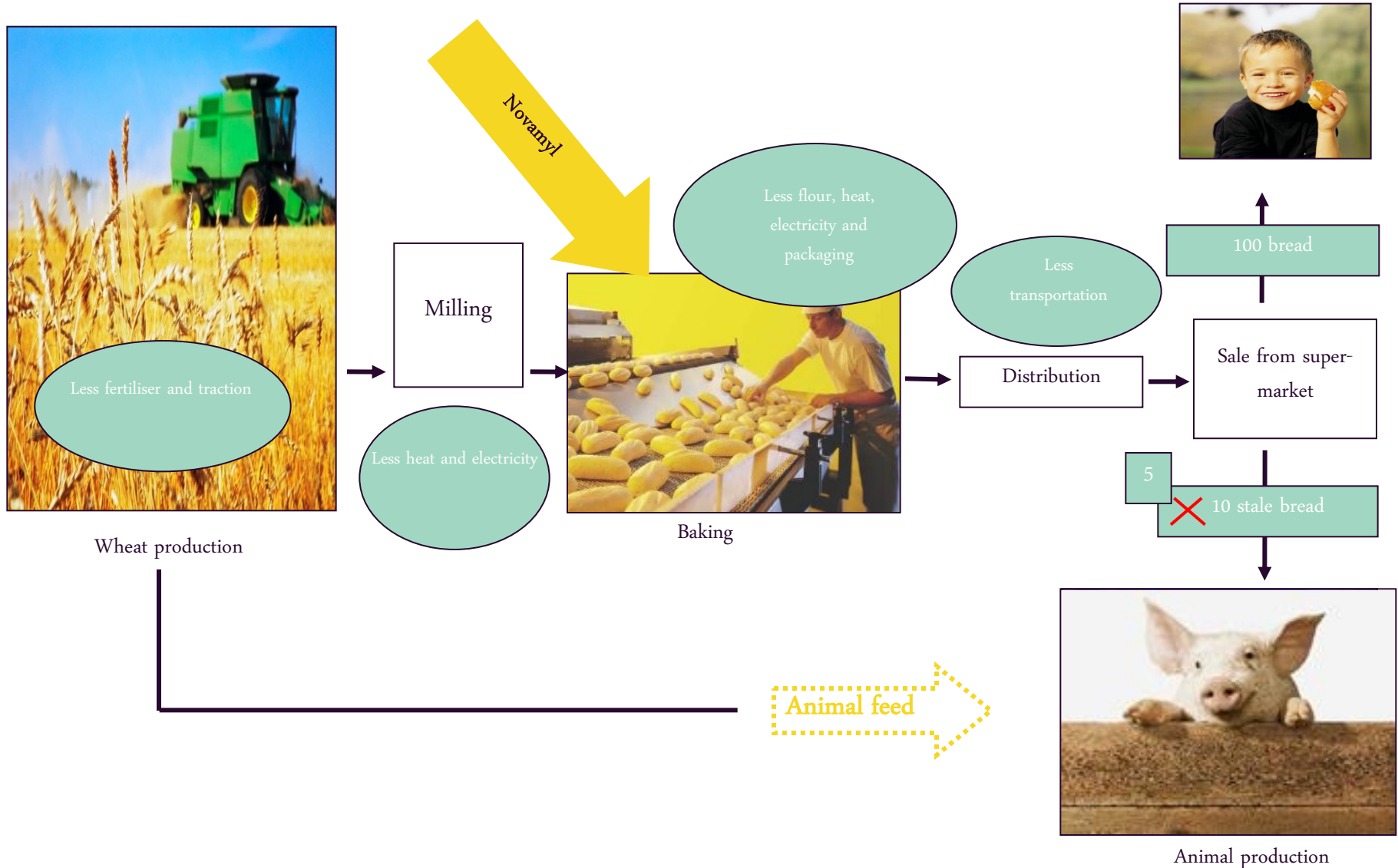
The Opportunity

- Improve resource use and efficiency
- Address more resource intensive lifestyles
- Foster more sustainable consumption and production patterns
- Explore how biobased solutions can be applied to agriculture, bioenergy, chemicals, detergents, food, plastics, textiles...



Driving low carbon thinking in value chains

Example: The baking industry



Low Carbon Solutions are Globally Applicable

Cleanstar Mozambique: Sustainable, restorative and resilient business providing benefits to rural and urban poor and the environment

CleanStar Mozambique Community Bioinnovation Limited

 <p>PEOPLE</p>	 <p>FORESTS</p>	 <p>FOOD</p>	 <p>ENERGY</p>
<p>OBJECTIVES</p> <ul style="list-style-type: none"> • Build profitable new value chains between rural farmers and urban consumers • Strengthen rural nutrition security and early childhood development • Reduce respiratory disease and deaths caused by indoor air pollution 	<p>OBJECTIVES</p> <ul style="list-style-type: none"> • Reduce urban demand for deforestation-causing charcoal • Reforest thousands of hectares with 2 million native trees • Restore lost plant and animal diversity and natural carbon stocks 	<p>OBJECTIVES</p> <ul style="list-style-type: none"> • Create a more productive and sustainable alternative to the dominant "slash-burn-degrade-move" farming cycle • Produce a range of bulk and packaged food products of high nutritional value • Serve deep and attractive local markets which currently depend on expensive imports 	<p>OBJECTIVES</p> <ul style="list-style-type: none"> • Deliver a cheaper and superior household cooking solution for urban families who currently use charcoal as their primary cooking fuel • Deliver a lower-cost diesel fuel alternative to large commercial diesel consumers
<p>"IN MOZAMBIQUE, 44 PER CENT OF CHILDREN UNDER THE AGE OF FIVE ARE STUNTED DUE TO CHRONIC ILLNESS AND POOR DIET... CHILDREN LIVING IN RURAL AREAS ARE ALMOST TWICE AS UNDERWEIGHT AS THOSE LIVING IN TOWNS AND CITIES." UNICEF</p>	<p>"ONCE UPON A TIME, AFRICA BOASTED SEVEN MILLION SQUARE KILOMETRES OF FOREST. A THIRD OF THAT HAS BEEN LOST - MOST OF IT TO CHARCOAL." United Nations</p>	<p>"DOUBLING AFRICAN FOOD PRODUCTION BY MID-CENTURY WILL REQUIRE NON-CONVENTIONAL APPROACHES, PARTICULARLY SINCE SO MANY OF THE CONTINENT'S SOILS ARE DEPLETED, AND FARMERS ARE FACED WITH A CHANGING CLIMATE." World Agroforestry Centre</p>	<p>"THE CONVERGENCE OF CLEAN TECHNOLOGY AT THE BASE OF THE PYRAMID OFFERS UNPARALLELED OPPORTUNITY FOR INNOVATION AND GROWTH!" Stuart L. Hart</p>



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