



# **THE CASE OF NOVAMONT**

**ETP 2010**

**Working together on societal challenges**

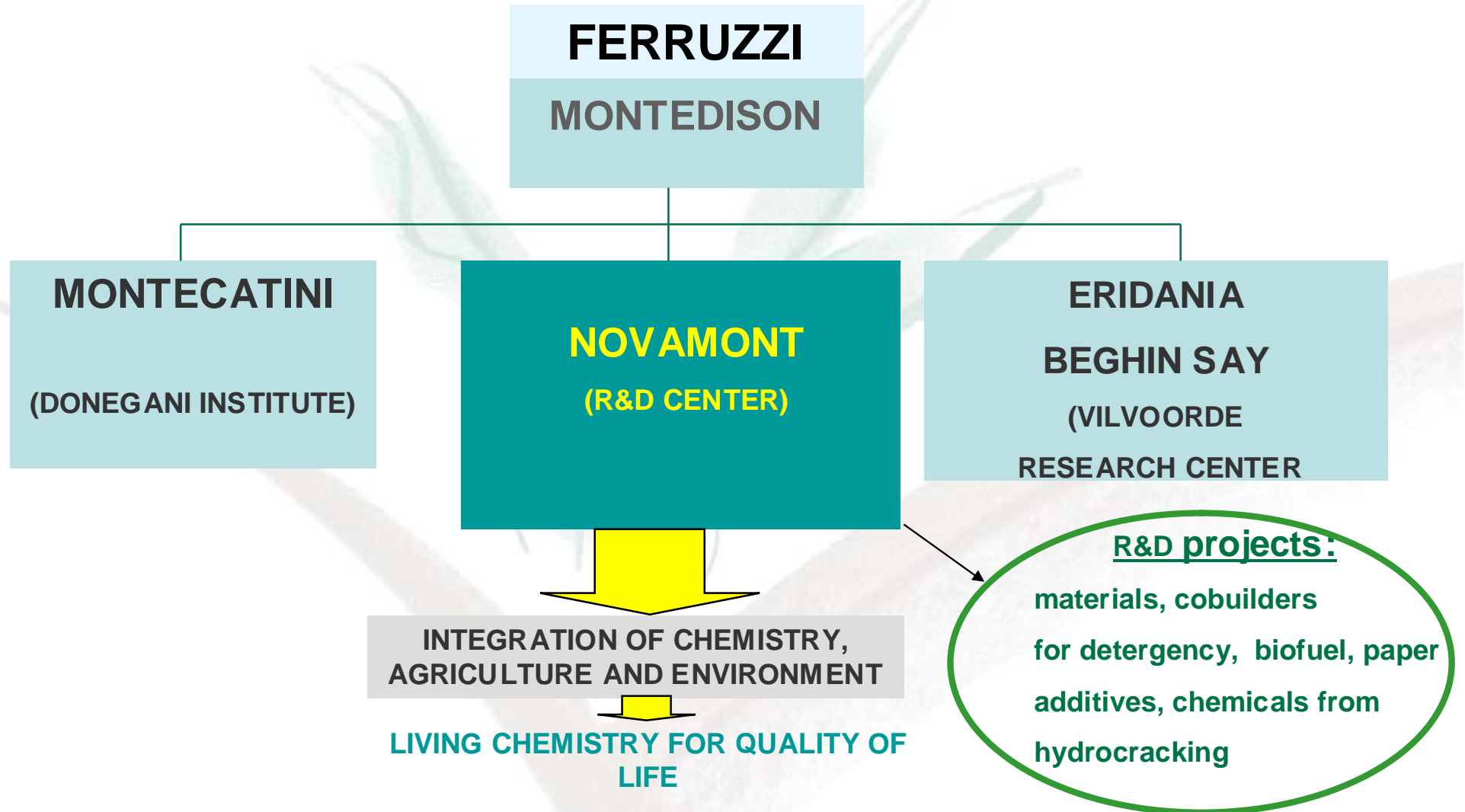
**Brussels 11-12 May 2010 Charlemagne Building**



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# NOVAMONT: THE ORIGINS (1989)



1994: CONCENTRATION JUST ON MATERIALS; CREATION OF NOVAOL, DEDICATED TO BIOFUELS

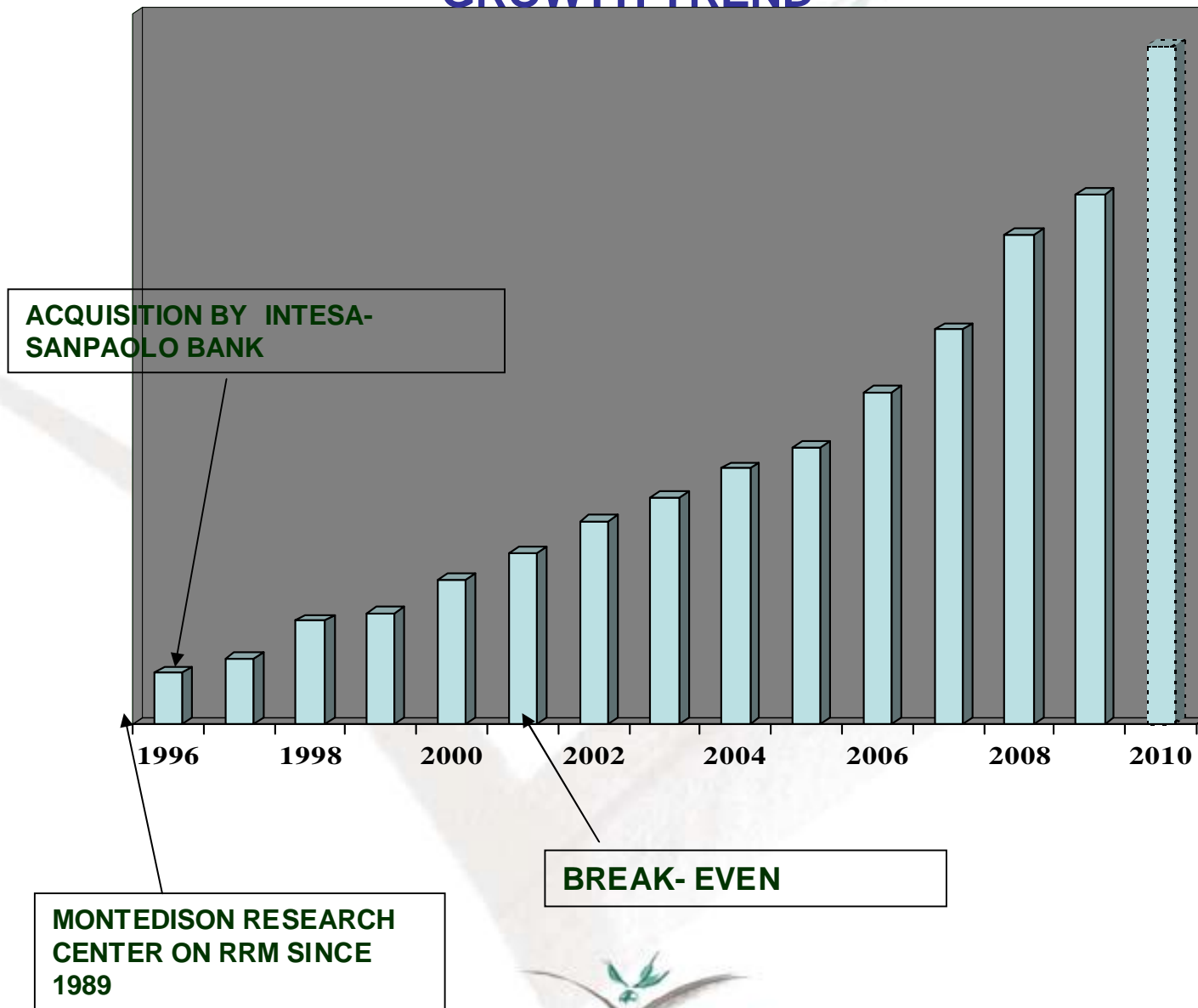
1996: NOVAMONT ACQUIRED BY BANCA INTESA-SANPAOLO (ex COMIT) AND OTHER INSTITUTIONAL SHAREHOLDERS

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# NOVAMONT PROFILE

## GROWTH TREND



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# NOVAMONT PROFILE AS AN ENTERPRISE

- “ PIONIER AND A MARKET LEADER IN THE SECTOR OF BIODEGRADABLE MATERIALS FROM RENEWABLE RESOURCES
- “ TAILOR-MADE MATERIALS FOR A WIDE RANGE OF INDUSTRIAL APPLICATIONS (Mater-Bi trade-mark)
- “ **STRONG PATENT PORTFOLIO** (more than 120 articles, >100patents ( 800 cases), >100MIEuro of investment, 10 awards).
- “ **RESEARCH AND DEVELOPMENT AS THE DRIVING FORCE OF NOVAMONT'S INDUSTRIAL DEVELOPMENT** (>10% of turnover , more than 30% of the human resources dedicated to research)
- “ **SIGNIFICANT HISTORICAL GROWTH TREND OF REVENUES, WITH STEADY IMPROVEMENT IN OPERATING PERFORMANCE .**

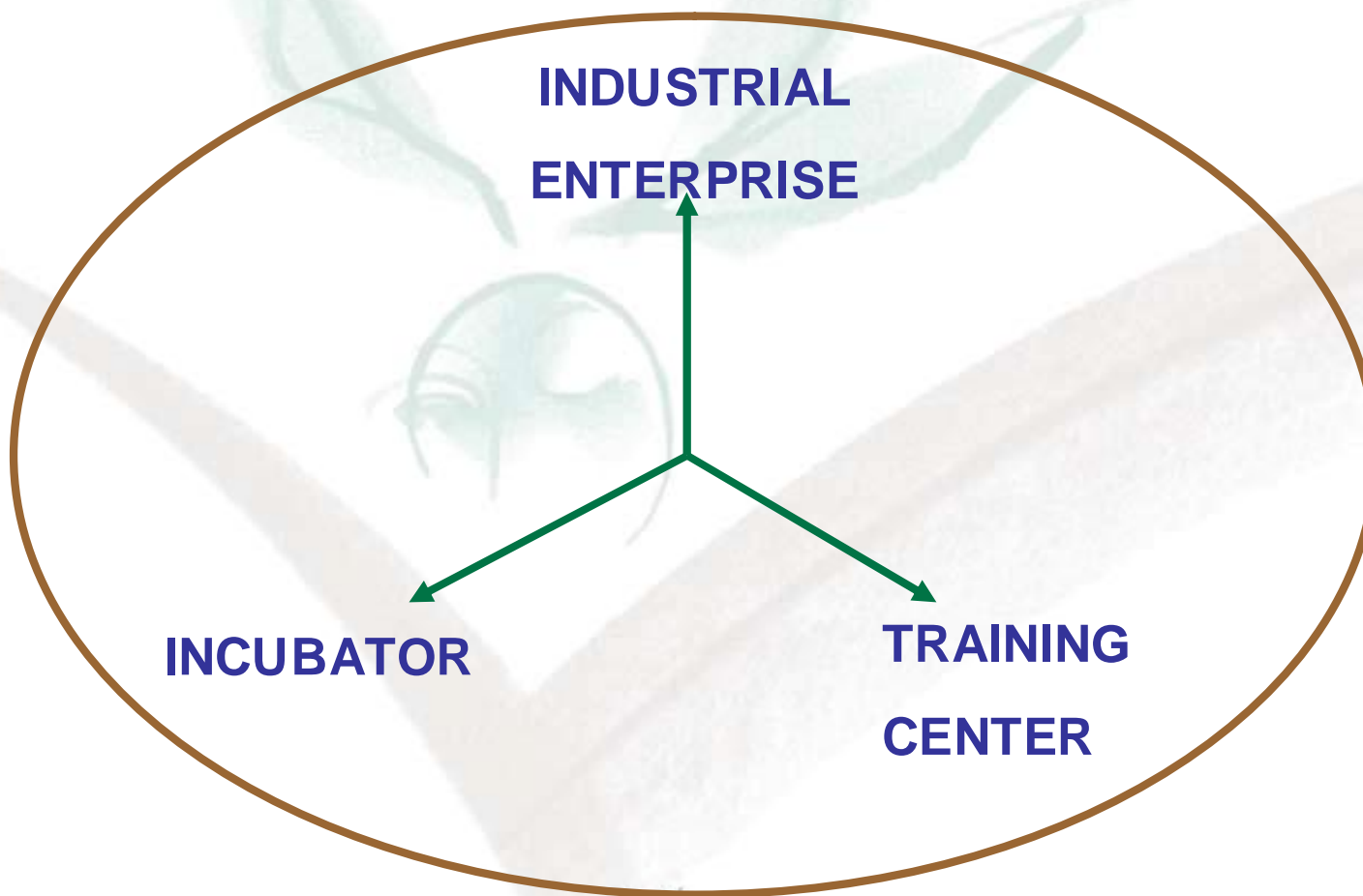


**Awarded by EPO and EU as “Inventor of the year 2007” for the 1992 – 2001 patents on bioplastics and industrial achievements**

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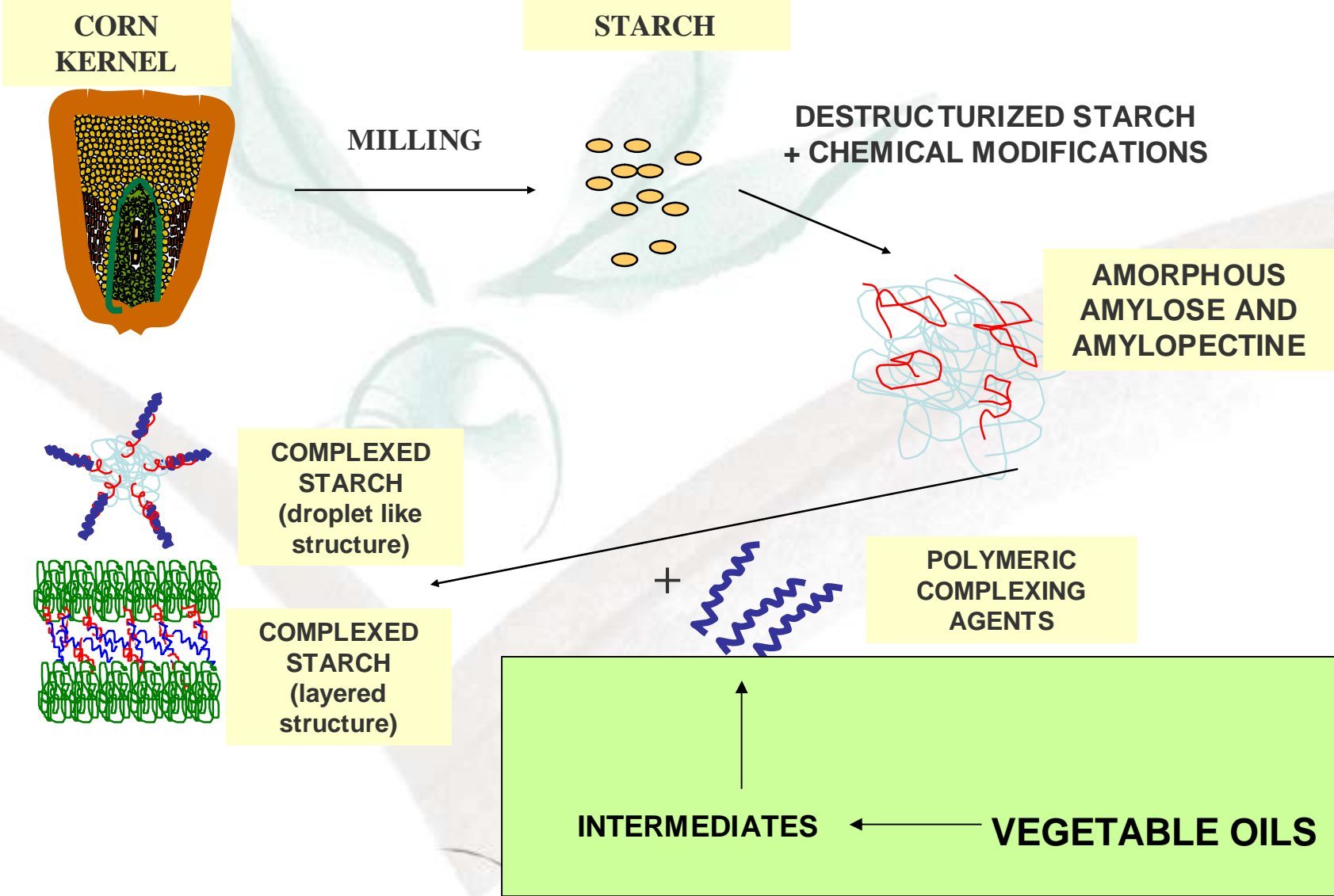
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# NOVAMONT TODAY



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# NOVAMONT'S STARCH/VEGETABLE OILS STARTING TECHNOLOGY

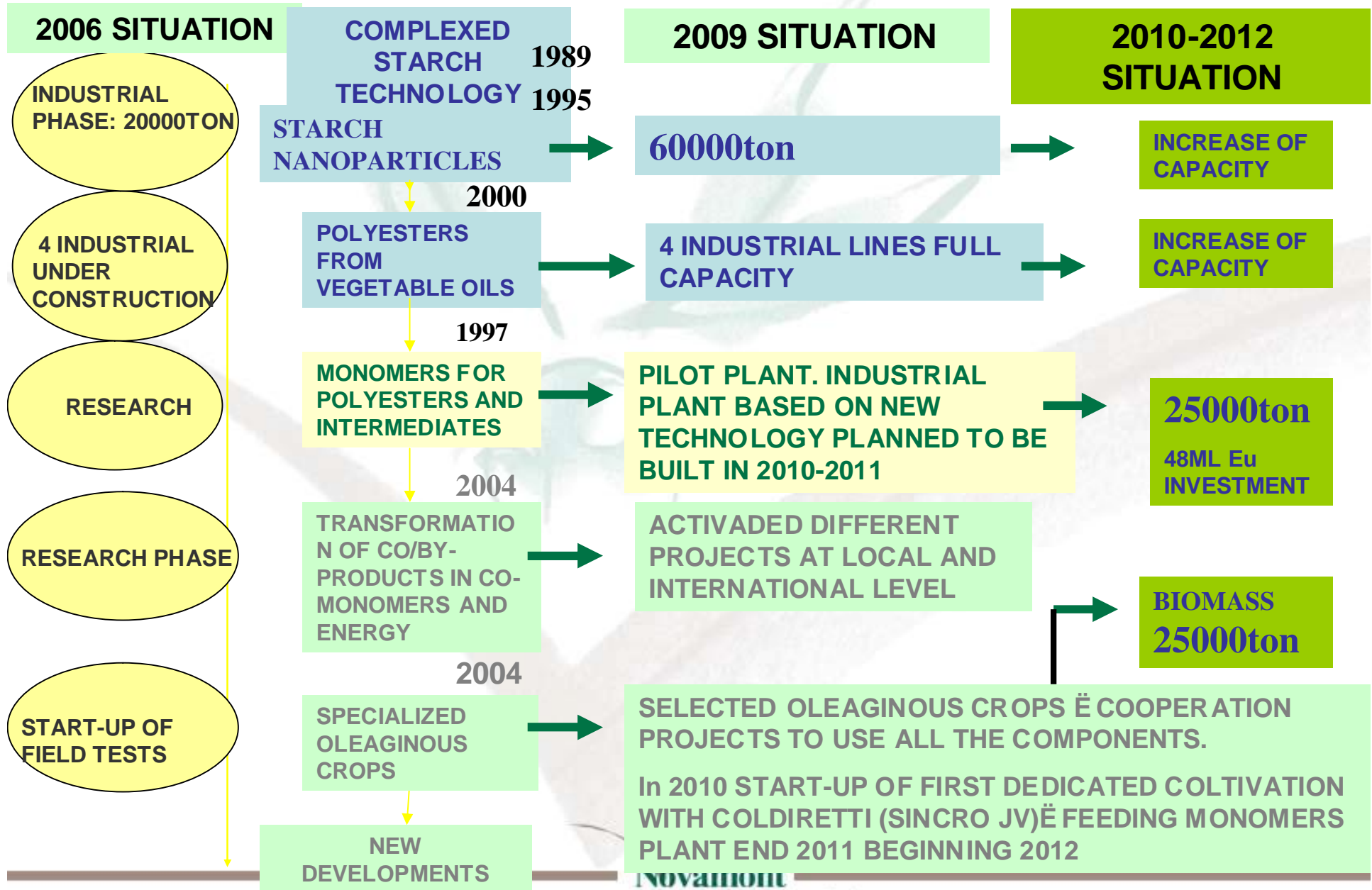


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# NOVAMONT RANGE OF TECHNOLOGIES

## -STATE OF THE ART -



# BIOREFINERY INTEGRATED IN THE TERRITORY

## BIO-CHEMICAL CONVERSION AREA

## PRODUCTS AREA

## AGRI AREA

**SPECIALIZED  
VEGETABLE OIL  
CROPS**

SEEDS

EXTRACTION

OIL

PROTEINS

CAKE

CHEMICALS

INTERMEDIATES

MONOMERS

FERMENTATION  
↑

GLYCEROL

INDUSTRIAL USES

BIO-POLYMERS

STARCH

OTHER USES  
AS CHEMICALS

MONO  
UNSATURATED  
ACID

CONVERSION

BIFUNCTIONAL  
ACID

MONOFUNCTIONAL  
ACID

POLYFUNCTIONAL  
ACID

BIOCONVERSION

POLYFUNCTIONAL  
ACIDS

LIGNIN  
PURE CELLULOSE  
HEMICELLULOSE

BIO/CHEMICAL  
CONVERSION  
↑

BIOCONVERSION

RESIDUAL  
BIOMASS

ANAEROBIC  
DIGESTION PHASE I

COMPOSTING PHASE II

COMPOST

THERMAL  
VALORIZATION

ENERGY

LIQUID  
FERTILIZER

## ENERGY AREA

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# BIOREFINERY : MATER BI PRESENT AND FUTURE GENERATIONS

■ ALREADY INDUSTRIAL

■ PLANT READY IN 2011

GENERATION	MINIMUM RRM C14%	STARCH	NON-FOOD VEGETABLE OIL DERIVATIVE	MONOMERS FROM BIOMASS	TECHNOLOGIES FOR BIOPLASTICS	CHEMICALS
1°	25%	YES	NO	NO	STARCH COMPLEXATION	
2°	40%	YES	YES	NO	"STARCH COMPLEXATION "POLYESTER PRODUCTION	
3°	50%	YES	YES. REDUCED IMPACT	NO	"STARCH COMPLEXATION "POLYESTER PRODUCTION "MONOMER 1	"C9-C13 DIACIDS "C9-C18 MONOACIDS "OTHER CHEMICAL INTERMEDIATES
4°	70%	YES	YES. REDUCED IMPACT	YES	"STARCH COMPLEXATION "POLYESTER PRODUCTION "MONOMER 1 "MONOMER 2	Lignin/phenols Cellulose/sugars Emicellulose/xylose
5°	90%	YES	YES. REDUCED IMPACT	YES	"STARCH COMPLEXATION "POLYESTER PRODUCTION "MONOMER 1 ".MONOMER 2 "MONOMER 3	

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**NEXT INDUSTRIAL OBJECTIVE  
FOR 2010-2011:  
PRODUCTION OF MONOMERS TIED TO THIRD  
GENERATION POLYESTERS AND CHEMICAL  
INTERMEDIATES**

- “ A NEW INVESTMENT IN 2010 OF 48 ML EURO . FIRST PLANT OF THIS TYPE WITH A CAPACITY OF ABOUT 25000
- “ SELECTED SITE: A DE-INDUSTRIALIZED CHEMICAL SITE IN CAMPANIA
- “ INVESTMENT COVERED BY CAPITAL INCREASE ALREADY DELIBERATED BY SHAREHOLDERS, EU STRUCTURAL FUNDS OF CAMPANIA REGION



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FIRST PRODUCTION SITE  
TERNI





NEW PRODUCTION SITE  
TERNI



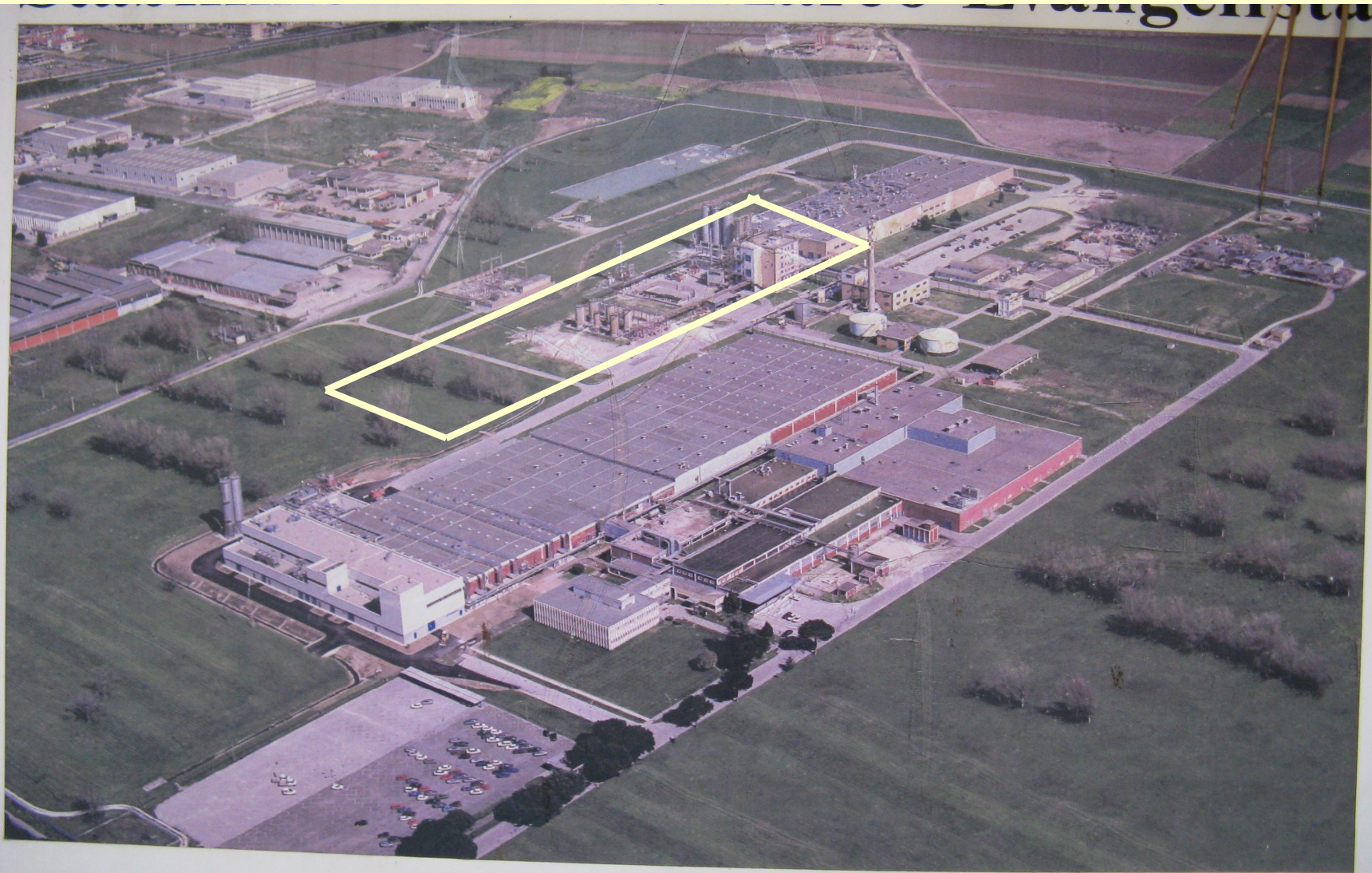
# INDUSTRIAL ACHIEVEMENTS

## INDUSTRIAL ACTIVATION OF BIOREFINERY'S SECOND STEP

- . RECOVERY OF A DISMISSED CHEMICAL SITE (EX-VINYL CHLORIDE PRODUCTION).
- . NEW EMPLOYMENT IN THE INDUSTRIAL COMPARTMENT AT LOCAL LEVEL (30% increase in 2007 and 2008)



# EX-3M SITE IN CASERTA



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# BIOREFINERIES FOR BIOPLASTICS AND CHEMICALS

A SOUND OPPORTUNITY FOR:

- “ RE-INDUSTRIALIZATION OF CHEMICAL SITES IN EUROPE
- “ QUALIFIED EMPLOYMENT IN A KNOWLEDGE BASED ENVIRONMENT
- “ CASE STUDIES OF ECONOMICAL AND ENVIRONMENT SUSTAINABILITY ABLE TO REDISIGN ENTERPRISES, PROMOTE PARTNERSHIPS RE-STARTING FROM LOCAL AREAS



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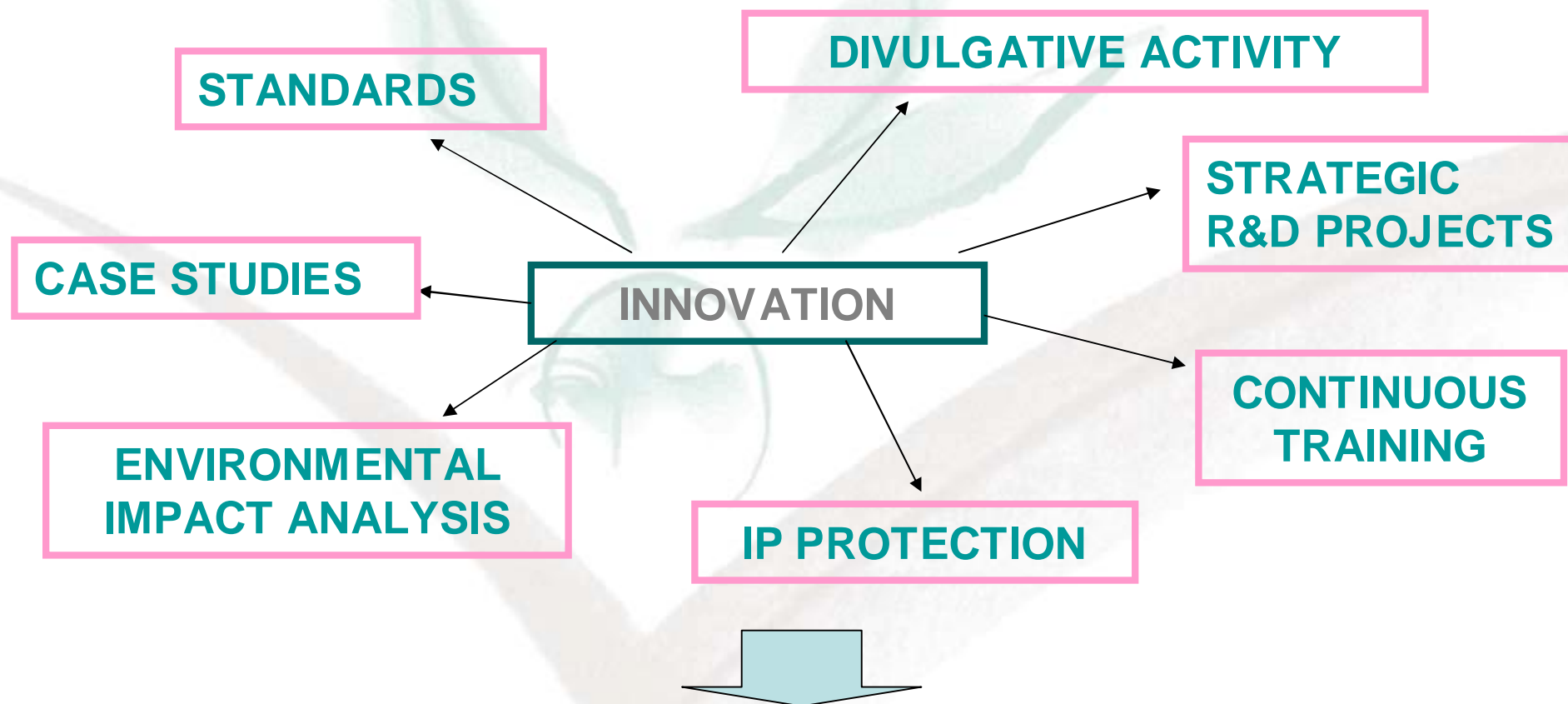


# INDUSTRIAL APPLICATIONS OF MATER-BI BIOPLASTICS



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# NOVAMONT IDEA OF INNOVATION -FOR A SYSTEM-BASED ECONOMY-



ALLIANCES/ DYNAMIC PARTNERSHIP

**BIO-BASED PRODUCTS CAN BECOME A POWERFUL  
DEMONSTRATIVE CASE OF RELEVANT DIMENSIONS FOR  
SUSTAINABLE DEVELOPMENT AND CULTURAL GROWTH**



**“REDESIGN ENTIRE APPLICATION SECTORS**

**“AFFECT THE WAY RAW MATERIALS ARE PRODUCED  
THROUGH INTEGRATION OF ENTIRE AGRO-INDUSTRIAL  
CHAINS**

**“MODIFY PRODUCTS USE AND DISPOSAL**

**“EXTEND THE EXPERIMENTAL ACTIVITY OF RESEARCH LABS  
TO LOCAL AREAS**

**“DEFINE RELIABLE SYSTEMS STANDARDS**



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Í THE CHALLENGE OF OUR MILLENNIUM IS IN THE BALANCE BETWEEN THE TECHNICAL MEANS THAT HUMANITY POSSESSES AND THE WISDOM IN HOW WE WILL MAKE USE OF THEMÎ

**Umberto Colombo**

**A real sign  
of  
sustainable development.**

