

SUSTAINABILITY OF AGRICULTURE AND FOOD IS AT RISK

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DEVELOPMENT AND HUMAN PROGRESS

ESSENTIAL

BUT RISKY

RISK 1 – DEPLETED ENVIRONMENT

RISK 2 - GENETIC ENGINEERING

RISK 3 - CAPITALIST EXPLOITATION

INTRODUCTION

PEOPLE

WEALTH

SCIENCE & TECHNOLOGIES

FOOD PRODUCTION RESOURCES

**HUMAN POPULATION NOW
6.5 BILLION**

Developing: 5 bn: RURAL POOR 4 bn
West: Less than 1 bn - shrinking

2050 = 9.5 bn
Extra 3.0 bn among rural poor

POVERTY DOES NOT MEAN HUNGER
Local Food

WEALTH

1 Billion: 1\$ Per Day

Half World: \$2 Per Day

Income Richest 1% = Other 57%

Globally 20% use 80% Resources

TECHNOLOGY - WEST

SEVERAL CENTURIES

EDUCATION

RESEARCH

SOCIETY UNDER LAW

PATENTS & INTELLECTUAL PROPERTY RIGHTS

WEST - ILLUSION

ISOLATED PROSPERITY

**60 YEARS UNPRECEDENTED
PROSPERITY**

CHEAP AND PLENTIFUL FOOD

WEST – 20% of World Population

CULTURAL BUBBLE

COLLISION WITH REALITY

EXPECT PRESENT TO CONTINUE

FOOD BASIC FOR SURVIVAL

THE REAL GLOBAL CHALLENGE

EMPOWER 4 Bn RURAL POOR
SOON 7 Bn

**Enable world to share the strengths of West:
Capitalism, Technology,
Law, Civil Society**

Move up out of poverty

POVERTY DOES NOT MEAN HUNGER

ROLE OF AGRICULTURE

COHESIVE INFLUENCE

CENTRAL TO HUMAN CIVILIZATION

MAJOR ROLE BEYOND FOOD

SOCIAL AND COMMUNITY ISSUES AS WELL AS
ECONOMIC

% Population in Agriculture

West: 5-10%

Eastern Europe: 25-55%

Developing Countries: 25-85%

Least Developed: 90%

HISTORIC REVOLUTIONS IN AGRICULTURE

Hunting-Gathering (Pre-history)

**Neolithic Revolution (~12,000 years ago)
Domestication, Community, Morality**

**Agro-Industrial Revolution (1700 – 1945)
Flowing from Renaissance, Reformation,
Enlightenment**

Intensification Era – Crisis (1945-1990)

Future – bleak unless we find new sustainable ways

NEOLITHIC REVOLUTION

Agricultural/Cultural ~12,000 years ago

New features of human civilization

Community living

Artifacts from new quality of life

Domestication of plants and animals

Spread from Middle East with livestock

Genetic drift forming diverse cultures

1ST MAJOR SHIFT - NEOLITHIC REVOLUTION
Agricultural/Cultural ~12,000 years ago

New quality of life factors

Community living

Belief in transcendence

Morality

Acceptable social behaviour

Lawmaking

Ethical standards

ETHICS

“KNOWING THE DIFFERENCE

BETWEEN

GOOD AND EVIL

AND CHOOSING TO DO THE GOOD”

SOCRATES

ETHICS

- “1- KNOWING THE DIFFERENCE
BETWEEN GOOD AND EVIL
2 - CHOOSING TO DO THE GOOD”**

Due Process

- 1 - Explore everything
2 - Stakeholders decide upon facts**

ETHICS

GREEK PHILOSOPHERS

COMMUNITY IS BASIS OF CIVILIZED LIFE

**WITHOUT COMMUNITY
QUALITY OF LIFE IS
UNSUSTAINABLE**

Homo sapiens in Europe

Agriculture arrived with H. sapiens
from Middle East after cultural revolution

No Neanderthal Ancestors

Iceman in Alps
5,300 years ago

Mitochondrial DNA
90% modern European from 7 women

MAJOR SOCIAL – CULTURAL SHIFT IN EUROPEAN SOCIETY

1400- 1750

Renaissance

Reformation

Enlightenment

**2nd MAJOR SHIFT
IN WESTERN SOCIETY**

**Agro-Industrial Revolution
1750 – 1950**

Capitalism, Division of Labour

Science in Farming

Trade, Comparative Advantage

Massive Demographic Movements

Beginning of Rural – Urban Divide

Intensification of Food Chain 1945 - Present

Make money not food

Biodiversity a business resource

Rural life depleted

Plant and animals remade genetically

Food – shipped, traded, modified, processed,
uniform, packaged and ready to eat, but less
tasty

Fast food replaces slow food

Business plan to colonize the food chain

RISK 1 – DEPLETED ENVIRONMENT

RISK 2 - GENETIC ENGINEERING

RISK 3 - CAPITALIST EXPLOITATION

1945 – 1990
GOOD POLICY GONE TOO FAR

**The old order changeth and giveth place
to new**

**And God fulfils himself in many ways
Lest one good custom should
corrupt the world**

(Tennyson – Passing of Arthur)

SUSTAINABILITY

NON - DESTRUCTIVE USE

**HUNTER-GATHERERS
SETTLED AGRICULTURE**

**INTENSIVE FARMING IN LAST 50 YEARS
BROUGHT NEW PROBLEMS**

**Why is sustainability a new
farming problem ?**

**Sense that there are no
boundaries**

**Keep pushing the system
for ever**

Sustainability of Farmers

Primary producers squeezed

Way of life changed to business

Farm decisions by remote control

Vulnerable and powerless

No contact with customer

Millennium Ecosystem Assessment 2005

Stark warning

Irreversible damage

Natural machinery degraded

**Planet no longer able to sustain future
generations**

AGRICULTURE IS CHANGING

HISTORIC ROLE

CAPITALIST RESOURCE

**FOUNDATION FOR GLOBAL
COMMUNITY ?**

Pope Benedict XVI said at his inauguration

***“The external deserts in the world
are growing because
the internal deserts
have become so vast.***

***Therefore the earth’s treasures
no longer serve to build
God’s garden for all to live in,***

***but they have been made to serve
the powers of exploitation
and destruction***

RISK 1 – DEPLETED ENVIRONMENT

***RISK 2 - GENETIC
ENGINEERING***

RISK 3 - CAPITALIST EXPLOITATION

Gene-Transfer

Genes across species boundaries

**Food, Health, & Environment
Ethics needed**

e

Homeostasis of Genome Stability

**Several genes act together in a cluster
to code for a protein**

**A gene can join in different clusters to
code for separate proteins**

**Many proteins have more than
one effect**

Example of Multiple Protein Action
Diethylstilbestrol
Synthesized 1938

Used to prevent repeated abortions

20 years later
Daughters at risk with vaginal
cancer

BSE- Lessons

**Earlier Assumptions:
Pathogen
Cannot cross species barrier**

**Now start to learn:
Interaction of genotypes of different
species affect vCJD and CJD**

1st Generation GM Foods
No Benefits to Consumer

2nd & 3rd Generations – Hazards
Metabolism, Physiology
Hormones

GM Food into Market
Ethical abuse
No notice to Consumer
No due process

Different
Cultures of USA and Europe
Regulation - Government

Terminator Gene

Farmers traditionally keep seed to sow next year

Intellectual Property Rights (TRIPS)

Future GM Imports

**Argument that gene-technology
equates to breeder practice**

Only quicker

**Not true and not ethical to state
it**

**Transgenic meat
Milk and Eggs from Transgenic
Animals**

Monsanto application for pigs

**Applications lodged for
approval by US Government**

Tragedy that promising new technology with great potential was launched so poorly

Comparison with Nuclear Power

Challenge to solve difficult problems: eg. adverse conditions for crops

**Appears to be an attempt to colonize
the global food chain**

Stakeholders

Due process

Independent scientific tests

Public not a test bench

Royal Dutch Shell US\$ 16 bn

Exxon Mobil US\$24 bn

Tesco Turnover US\$ 4 bn

Advertising US\$117 bn

Balance Limits ?

Community ?

RISK 1 – DEPLETED ENVIRONMENT

RISK 2 - GENETIC ENGINEERING

***RISK 3 - CAPITALIST
EXPLOITATION***

Ideology Today
Darwin: Selfish gene
Adam Smith: Invisible Hand

**“Have to be selfish to survive &
greed is OK – it’s natural”**

CO-OPERATION **AND** COMPEITION

IN NATURE AND
ECOSYSTEMS

IN ALL SUCCESSFUL HUMAN SOCIETIES

TODAY: COMPETITION RULES
SOCIAL DARWINISM

**ECONOMICS DOMINATES
OUR VALUES TODAY**

**THREE ECONOMIC RESOURCES
OF LIFE**

**LAND
LABOUR
CAPITAL**

CAPITALISM

OWNER CAPITALISM

**Basis of farming in past together with
land and labour**

SHAREHOLDER CAPITALISM

(Fiduciary or Trustee Capitalism)

CAPITALISM & FARMING

**TAKEN OVER BY SHAREHOLDER
CAPITALISM**

UPSTREAM SUPPLIERS

WHOLESALEERS & PROCESSORS

SUPERMARKETS

**VICTIMS OF SHAREHOLDER
CAPITALISM**

FARMERS AND CONSUMERS

LINKAGE LOST

FEW SUPERMARKET CHAINS IN EU

250 million shoppers

3.2 million farmers

**ONLY 110 buyers who are
Gatekeepers for food chain**

Abuse evident

Prof. Tim Lang, London University

SHAREHOLDER CAPITAL

OWNER INTERESTED ONLY IN
RETURN ON CAPITAL

NO VISION OF COMMUNITY

ECONOMIC REDUCTIONISM

CONTROL BY REMOTE STAKEHOLDERS

**WTO Plan: Force agriculture and food
into global capitalism**

CONDITIONALITY

OPEN WORLD MARKETS

**BUSINESS OPPORTUNITY FOR WEST
Market for GM foods**

POOR CAN OFFER ONLY THEIR LABOUR

FOOD IS ONLY A COMMODITY

WTO PLAN FOR WORLD FOOD CHAIN

NOT A LEVEL PLAYING FIELD
WEST versus 4 bn POOR PEOPLE

Many have only labour

Some have land

Most have no capital

**Lack infrastructure, support, science and
experience**

SHAREHOLDER CAPITAL IN AGRICULTURE

PLANTATIONS

CHEAP LABOUR

OUT-SOURCING

SUPERMARKETS

REPATRIATE PROFITS

RICH GET RICHER – POOR GET POORER

EMPOWERMENT

is a community activity

**ENABLING PEOPLE TO HELP
THEMSELVES**

FOOT ON LADDER OUT OF POVERTY

**FOOD FOR SALE IN DOMESTIC
MARKETS**

**WESTERN IDEOLOGY:
RAW
CAPITALISM WILL SOLVE ALL PROBLEMS**

**“THERE IS NO SOCIETY – ONLY THE
MARKET”**

Margaret Thatcher

**Choice: Pre-civilization or
Moral Capital**

THE CHALLENGE

Humanity must take moral responsibility for its actions OR all will go down together

Civilized community has been built on ethical behaviour not by business

CIVILIZATION

NOT A PRODUCT OF PROSPERITY BUT OF SHARING

Equality

Justice

Prudence

Quality of Life

PEACE

AGRICULTURE IN 21st CENTURY

19th Century Industrial
Wilberforce
Shaftesbury
Elizabeth Fry

Legislation

ETHICS

“Feeding the world is a moral not an economic issue”

**NELSON MANDELA
MAY 2004 TO UN**

Community: Empowering the weak to help themselves

**WITHOUT ETHICS COMMUNITY
IS UNSUSTAINABLE**

AGRICULTURE IN 21st CENTURY

Not advocating return to
Primitive Lifestyles
Ignorance
Superstition
Institutional religion
Not arguing against capitalism

Advocating wisdom & public ethics
in using capitalism

WESTERN MORAL CAPITAL

**JUDEO-CHRISTIAN VALUES
UNDERLIE WESTERN CIVILIZATION**

**“DO TO OTHERS WHAT YOU WOULD
LIKE THEM TO DO TO YOU”**

JESUS

WE HAVE TO CREATE MORAL CAPITAL

*“It is dangerous to show man too clearly
how much he resembles the beast
without at the same time
showing him his greatness*

*It is also dangerous to allow him too clear
a vision of his greatness without his baseness.*

*It is even more dangerous to leave
him in ignorance of both.*

But it is very profitable to show him both”.

Blaise Pascal, 1623-62.

Possible Ways Forward

Separation of Powers

Support for Sustainable Farming

Legislation

Maintain Domestic Food Production