

Keynote Speech, 17th IFOAM OWC, Namyangju City, Korea, Sep. 28, 2011

Korean Organic Agriculture: Models for a Healthier Planet

By

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1. History and Multi-functionality of Agriculture in Korea

Paddy farming that produces rice, the main staple food for Koreans is known to be started in the Korean peninsula in the pre-historic era. A series of archeological works revealed:

- 1) 3,000 B.C. chronometric fossilized paddies were excavated in Ilsan, Hangang River basin, Korea by Prof. Son Bo-Ki and His Archeologist Team, 1993. (left)
- 2) 12,000~13,000 B.C. chronometric carbonized paddy fossils were excavated in Sorori, Cheongwon County in 2001 by Prof. Lee Yoong-Jo and his Archeologist Team. (right)



3) Multi-funtionality of Agriculture in Korea.

'Farming' is not simply an economic activity.

It is a way of life, both ethical and ecological; indeed, a life-affirming process with its own inherent value and culture.

In addition to securing affordable food and economic viability, farming performs invaluable non-trade functions such as ecological preservation, conservation of landscape, inheritance of culture and traditions, etc., as shown in the picture. Sure enough, the subject of multi-functions of agriculture is far beyond trade liberalization.

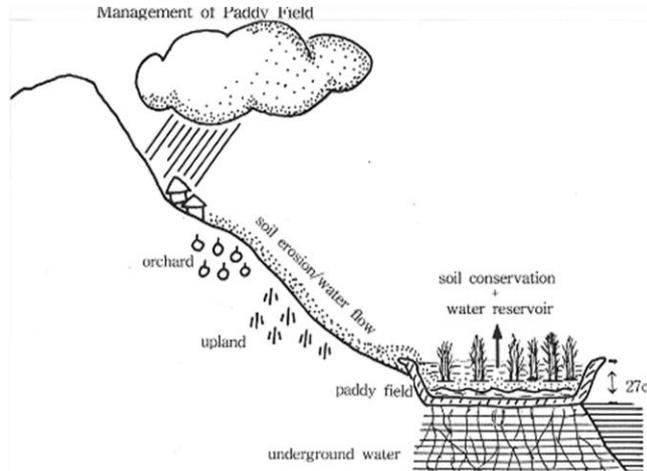
Therefore, 'farmer' is the caretaker of the earth, land, water, sky, and biodiversity, etc. And he is also the steward of great traditions and culture.



Total Land (As of 2010)	10,003(1,000 ha)		Total Population (As of 2010)	48,580 (1,000 prs.)
Cultivated (Paddy field) (Upland)	1,715 (984) (731)	17.1%	Farm Population	3,117 thous.(6.1%)
Forest	6,369	63.7%	Farm Households	1,171 thous.
Others	1,919	19.2%	Farmland per F.H.	1.46 ha
			Paddy-field per F.H.	0.84 ha

4) Examples of Ecological Functions Being Carried-out by Paddy-Farming

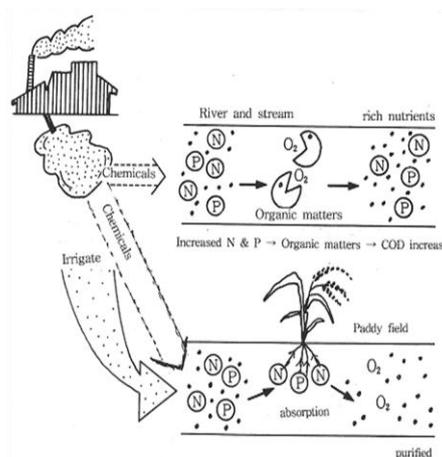
i) Effects of Water Reservoir, Flood Control, Underground Water-storing and Soil Management.



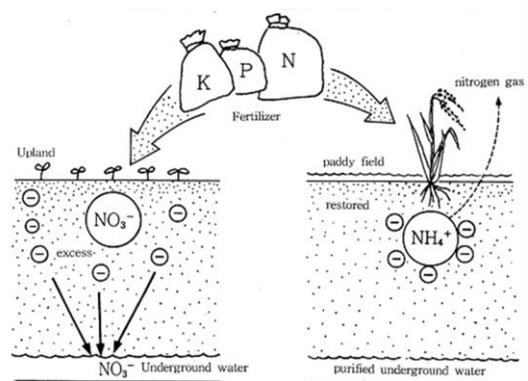
- Rainfall held up in total paddy fields during the flood season ... approximately 3.6 billion metric tons which is equivalent of 24 times of the total amount kept in 'Chuncheon Dam' with capacity of 150 million MT.
- Underground-water stored during the paddy growing period of 137 days ... 15.8 billion metric tons, which is equivalent to 27 times of the total amount of municipal water (5.83 billion MT) used in Korea per year.
- Reception of topsoil washed-out from hillside orchards and upland per year ... 26 million metric tons.

ii) Air and Water Purification Effects of Paddy-farming

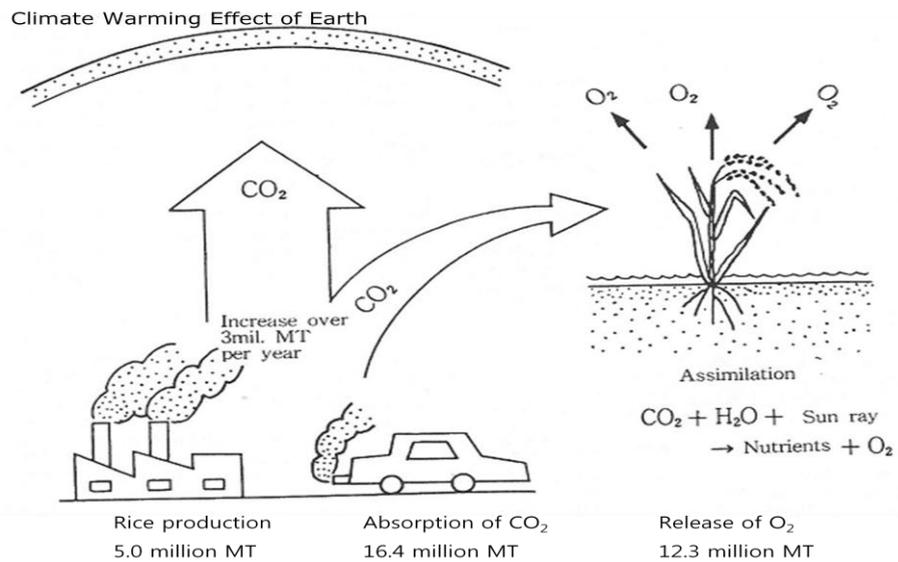
A. Absorbing car emissions and chemicals



B. Purifying chemicals applied for crops



iii) Absorption of CO₂ and Release of O₂ from Paddy-farming



5) 農者天下之大本 (Nong Ja Cheon Ha Ji Dae Bon!)

For thousands years, thus Koreans have long conceived of the idea, 'Agriculture is the Great Foundation/Source of Life under the Heaven and Earth' expressed in the following 7 letters 농자천하지대본 (NONG JA CHEON HA JI DAE BON)

Traditionally the self-thrived Koreans has shared a concrete belief among the nation; that is, "Food and Medicine have the Same Root(食醫同源)," and "Human Body and Soil are not separate as Two, but One (身土不二)."



2. Crisis of Life-and Ecosystem in Agriculture

- For the half of last century obsessed with the idea of increased productivity, wide sick phenomenon of conventional food/agricultural systems has become prevalent mainly owing to the over-use of environmentally-deteriorating materials and technologies, coupled with the expanding neo-liberalistic economic systems for voracious globalization measures. Examples are synthetic fertilizers & pesticides, additives, GMO, MNCs/TNCs, UR, WTO, FTA, etc.
- Under the WTO system, traditionally small-scale family farms become inclined more to depend on the over-use of synthetic chemicals to survive, but are no longer competitive in cost and price with large-scale mono-cultural production by TNCs.
- Thus the foundation of rural economy and the ecosystem of the less-endowed country like Korea have been rapidly destroyed, together with shattering human life and bio-diversity.
- Various Food-originated diseases become phenomenal, exemplized by food poisoning, e-coli, mad cow disease, F & M disease, etc.

3. Vision of Agriculture by World Leaders



"Agriculture Faces with Great Challenges, and at the same, Tremendous Economic Opportunities,"
said President Obama.



"Agriculture is the Key to Open the New Future like NANO Technology & Space Industry,"
said French President Sarkozy.



"Let's Create New Value by Reviving Agriculture,"
said Japanese Prime Minister Hatoyama.

Source: Agrigento Korea, Maeil Economic Daily, March 24, 2010

4. Inception of Environmentally-Friendly Agriculture in Korea, 1998.

Far before the above three presidents of the so-called advanced countries, President Kim Dae Jung proclaimed the nation-wide inception of 'Environmentally-Friendly Agriculture(EFA)' in Korea on the Farmers Day, Nov. 11, 1998. He said, ***“To Make Agriculture More Environmentally Sound, More Socially Just and yet Economically Viable, Changes in Conventional Practices Need to Move towards Sustainable Agriculture, with the Help of Alternative Technologies and Organic Practices, thereby Reducing the Use of Chemical Fertilizers and Pesticides.”***



President Kim Dae Jung declared the inception of Environmentally-Friendly Agriculture, November 11, 1999.

At the time there remained about 1,200 family farms voluntarily practicing organic agriculture in Korea: They existed forming themselves into either 1) 'Jeongnong-hoe (Right Farming Association)' or 2) 'Yukinong Hyuphoe (Korean Organic Farm Association)', and/or 3) 'Jayeon Nongup Hyuphoe (Natural Farming Association)'.

※ Thus, Environmentally-friendly farming, at last, has returned to Korea.



◀ 친환경 메뚜기농업
Environmentally-friendly paddy farming
for man and nature, dancing with locust, red-worm, etc.



◀ 친환경 오리(鴨)농법
Duck farming, no herbicide /no fertilizer



◀ 겨울 자운영(紫雲英) 논밭
Winter growing soil-rich legume plants

5. Models and Strategies for Environmentally-Friendly Agriculture in Korea.

To promote health, justice and sustainability of agriculture in small-scale family farms mostly under the holdings of 1.5 ha, the government EFA policy has taken the so-called 'carrot and whip' phase-in programs in the following three aspects; i.e., Legal-side, Supply-side and Demand-side programs.

1) For Legal & Policy Actions:

- Enactment of EFA Fostering Law in 1997 and Its Bylaws in 1998. (revised in 2001 and 2009)
- Official declaration of the Environmentally-Friendly Agriculture Year on the occasion of Farmers' Day, November 11, 1998.
- Establishing Department of Environmentally-Friendly Agriculture in the Ministry of Agriculture and Forestry in 1998.
- Introduction of New EFA Product Certifying System in 1998 (revised in 2001 and 2009)
- Initiation of 'Farmer-Consumer-Government Tripartite Consultation Governance' in 1998 which evolved into the Green Tour (Farm Visit) Program in 2001.
- Legalization of Consumer Cooperatives Movement supported by New Act to enable it to operate in the market as for the leading EFA product outlets since 1999.
- Promulgation of New Agricultural Basic Law to legally backstop EFA policies in 1999.
- Launch the EFA Direct Payment program to financially backstop farmers since 1999.
- Promulgation of the 5-Year Environmentally-Friendly Agriculture Fostering Plan in 2001, and the second Plan in 2006, and the 3rd in 2011
- A new Integrated Law for EFA Production and Certification Systems is presently under contemplation, which includes a controversial waiver clause of 'Equivalence'

2) Supply-Side Programs

i) Introduction of 3 Different Phase-in Categories of EFA Product Certification since 1998.



Low-Pesticide Product*

- No herbicides at all.
- One half of recommended levels of pesticides & synthetic fertilizers.
- Good agri. practices (IPM/INM).

* Abolished since 2010.



No-Pesticide Product**

- No application of all the chemical pesticides, insecticides & herbicides.
- Allow a half of recommended levels of synthetic fertilizers.

** Suggested to be abolished by 2015.



Organic Product***

- No application of both chemical pesticides and synthetic fertilizer over the 3 years period.

*** Initially 'Organic Produce in Transient' category was introduced for those products less than 3 years organic practices.

ii) Other EFA Product Certification introduced since 2009.



Organic Livestock Product

- No antibiotic used
- All animal feeds are natural or organic, not using synthetic chemicals



No Antibiotic Products

- No antibiotic used at all.
- Non-organic animal feeds allowed.



Organic Processed Food

Materials used should be organically grown (at least 95% or more).

iii) Post-Certification Surveillance Systems

- For every 3 month, field checks by experts, at least, more than once during the growing season, and together with commodity checks, at least, more than once in the marketing process.
- Honorary civilian supervisors appointed among EFA farmers/consumers to volunteer to report on-site checks every month.

- So far, annual average 1.8 percent of EFA products sampled during production and 0.6 percent of EFA products sampled during marketing are administratively censured for their violation against the rules.

iv) Designation of Government-support EFA Special Areas and Counties

Every year the number of government-support Special EFA areas has increased. E.g. 1,047 Villages and 27 County levels in 2010.

v) Nation-wide Soil Improvement Programs by Government

- Fostering cultivation of green legume crops in idle farmland during winter season.
- To encourage organic fertilizers (certified composts & manures) production and use by farmers: The government supported 85.6% of total animal manure (urine & duns) to convert into safely fermented good compost fertilizers.
- Provision/Supports of natural enemies and organic pesticides, herbicides & insecticides/ microorganism treatments

vi) Direct Payment Supports to EFA Farms

- Varying scale of cash supports to different categories of certified EFA farms for the maximum period of the initial 3 years.
- For example, the amount of supports to a certified organic farm is US\$800 equivalent per hectare, whereas US\$500 for a no-pesticide certified farms since 2003 on.

vii) Yearly Repeated Training/Education of EFA Farmers on Sustainable Eco-Farming at Each County level.

3) Demand-Side Programs for EFA

Marketability as well as marketing modes are essential for the continuing success of EFA. The new schemes for accelerating the consumers' purchase/consumption actions by government are:

- i) Legalization of 'Urban Consumer Cooperatives' entities by the new act to accelerate direct transactions of EFA products between producers and consumers;
- ii) Support the Green Tour Program for urban consumers to get acquainted with EFA farms;
- iii) Enhancing/delegation of the EFA certifying services to eligible private institutions together with public awareness of certification logos.
- iv) Support nation-wide school lunch programs using EFA products. Citizens of Seoul Special City voted Referendum for all primary and middle school students to enjoy free EFA school lunch programs, Aug., 2011.
- v) To encourage installing specific sales corners at the existing large food marketing agencies such as National Agricultural Cooperative Federation markets, commercial department supermarkets and agri. wholesale markets.
- vi) Government-initiated EFA product campaigns and advertisements such as "Good Food is Good Medicine!", "Human Body and Soil are Not Two but One!", and a slogan, "Though Warm-eaten and Oddly-Looking, it Tastes More Delicious and Safe!"
- vii) Teaching Aids for youngsters are published and distributed.

The following pictures show typical EFA-specialty retailing outlets in Seoul, followed by typical teaching aid for youngsters in Korea.



Retailing of EFA Eco-produce



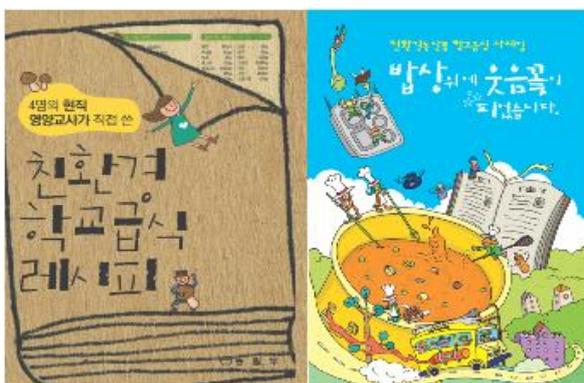
Teaching Aids for Children: Typical environmentally friendly organic farming stories.



Ladybug Farmer Story

Snail Farmer Story

Duck Farmer Story



EFA School Lunch Recipe



Shopping Guide for EFA

6. Interim Progress Records of EFA

1) Production

- As of the end of 2010, certified EFA production comprised about **11.3%** of the total agricultural land, **12%** of the total agricultural production and **15.6%** of total farm households. Total domestic market value was approximately 3.7 trillion won in 2010, of which organic production valued about 189 billion won and organic processed foods valued 216 billion won. (but 72-83% of the above two transacted in Korea are imported abroad!)
- During the period of 1999 to 2010, total production area of certified EFA increased from 954 hectares to 194,006 ha, about **203** times increase, while the total production rose from 27 thousand M/T to 2,215 thousand M/T in 2010, approximately **82** times increase.
- Certified EFA farmers numbered 183,918 units in 2010 increased from 1,306 farms in 1999, about **141** times increase.
- Of the total EFA production in 2010, organic products consists of 5.5%, No pesticide products 46.9%, and Low-Pesticide products 47.6%.

Growth of Certified Environmentally-Friendly Agriculture (EFA), Korea, 1999-2010

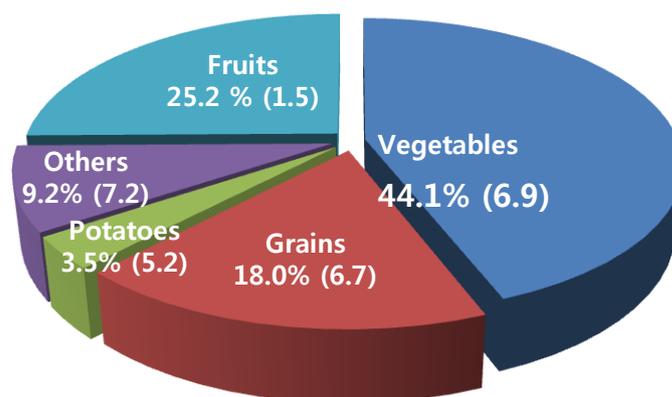
Classification	Unit	1999	2004	2008	2009	2010 ¹⁾	% to Total ²⁾
Total EFA Production	1000 M/T	27	461	2,188 (100%)	2,358 (100%)	2,216 (100%)	12.0 %
Organic	"	7	37	115 (5.3)	109 (4.6)	122 (5.5)	0.8
No-Pesticide	"	12	167	554 (25.3)	880 (37.3)	1,040 (46.9)	5.6
Low-Pesticide	"	8	257	1,519 (69.4)	1,369 (58.1)	1,054 (47.6)	5.7
No. of Certified EFA Farms	No.	1,306	28,951	172,553 (100%)	196,401(100%)	183,918 (100%)	15.6
Organic	"	355	3,283	8,460 (4.9)	9,374 (4.8%)	10,790 (5.9)	0.9
No-Pesticide	"	449	9,776	45,089 (26.1)	62,484 (31.8%)	83,136 (45.2)	7.1
Low-Pesticide	"	502	15,892	119,004 (69.0)	124,543(58.1%)	89,992 (48.9)	7.6
Percentage of Certified EFA Area to total	%	0.1	1.5	9.9	11.4	11.3	11.3
Percentage of Certified EFA Production to Total	%	0.1	2.5	11.9	11.9	12.0	12.0

1) Certification of Low Pesticide Category was ceased since 2010.

2) 2010 Statistics: Total agri. production = 18,391 thous. M/T; Total farm households = 1,177 thous.; and Total cultivating land = 1,715,301 ha.

2) Composition of Certified EFA Production by Crops, 2009.

About 44.1% of vegetable production obtained the EFA certification, followed by fruits and grains. Percentages in parentheses denote the percentages of organic production of the crops. And the certified fruits showed the poorest proportion of organic certification: that is, Organic 1.5%; No Pesticides 3.9%; Low Pesticides 94.6%.



3) Price Index of EFA, 2010

Taken the prices of ordinary conventional product as 1.0, that of organic product denoted 1.7 to 1.9 in 2010.

	Organic	No Pesticides	Low Pesticides	Ordinary Product
Grain	1.9	1.4	1.2	1.0
Vegetables	1.7	1.6	1.3	1.0
Fruits	1.9	1.6	1.0	1.0

Source: Agri. & Fishery Products Marketing Corporation, 2011.

4) Reduction of Synthetic Fertilizers and Pesticides Use

- According to available data, the use of synthetic fertilizer over the nation reduced by 35.6% during the 2nd EFA 5-Year Plan period of 1995-2010 alone, while that of chemical toxic pesticides reduced 16% during the 5 year period alone.
- Synthetic fertilizers: Average 374kg/ha in 1995 to average 242 kg/ha in 2010; a total reduction of 35.6%.
- Toxic pesticides and other chemicals: Average 11.8kg in 1995 to average 9.9kg in 2010; a total reduction of 16% during the 5 years period.
- Within the 10 years ahead, the amounts of use of the synthetic fertilizers and pesticides are expected to decrease to the **one-third** level of the present amount, based on the empirical data in Chonnam Province, the leading organic farming region in Korea. The Province has announced their 3rd 5-year (2011-15) EFA Plan which aims to achieve the proportion of pure organic production at 15 percent of the total agriculture by 2014.

7. Concluding Remarks: Problems and Odds in Korean Organic Agriculture

- It needs to enhance the awareness of governmental EFA organic certification system aiming at raising the consumers accountability, as there are still many public enemies speaking ill of the organic agriculture. The present eco-friendly animal husbandry at the infant stage needs to be reinforced by strong governmental programs.
- Present system of EFA direct payment with respect to the amount and period of supports should be reinforced towards providing adequate incentives to EFA production, with a special emphasis on organic agriculture.
- R & D functions for various alternative EFA technologies, materials and natural enemies should be strengthened both for the sake of preservation of ecosystem and increased productivity.
- Also, much more efforts should be directed to expanding the market outlets for EFA produce locally via 'local food campaign' and 'slow food movement'.

Buddhist Monks, Pastors and Catholic Priests, respectively, has prayed for life and organic agriculture alongside 4 Major rivers in Korea.



- On the special occasion of IFOAM Organic World Congress held in Korea, all the organic farmers over the nation hold a very small wish, though its realization appears impossible. They are two folds:
 - 1) Along with the present Regime's on-going 4-Major Rivers Realigning Project, quite number of organic farmers near the river basin areas including Paldang, Yangpyong county, the birth place of organic farming in Korea are being expelled out of their sanctuary. The reason is as manifested by concerned cabinet ministers led by Ex-Minister of Environment saying, "Organic farming contaminates the water quality of rivers much worse than conventional agriculture!"

- 2) Another awkward movement is being noticed that the government is compelled to include the waiver clauses of 'Equivalency' which aims to speed up the importation of foreign organic products and processed foods in the new EFA Law for unclear reasons. A certain foreign trade pressure apparently exerts upon the Korean government behind the curtain.

All the remedial efforts and alternative solutions suggested by the Korean organic sectors/farmers have turned into vain. It is just like 'reading bibles to the ears of cow!' Wishfully, God may help the infant stage of Korean organic farming (merely 0.8% of the total production) stand on the right track, so as to be able to contribute to the world to save the healthier planet.

In order for the Korean organic farming not to be forced fallen into a victim of the WTO/FTA/TNCs trade-liberalization regime, and for the organic agriculture to let proliferate to whole world, thereby reducing the present level (390 ppm) of GHG to the safe level of 350 ppm as advocated by the Organic Consumers Association in North America, each individuals and independent countries should be able to enjoy the food sovereignty!

For all of these, Ladies and Gentlemen, let us pray to the God!

Thank you very much.