Korea's Global ODA Forum for Sustainable Agricultural Development

The Present and Future of Development Projects and Strategies to Achieve Sustainability

Date **April 4, 2017**

Location **The Shilla Seoul (Ruby Hall), Seoul, Republic of Korea**

Hosted by Ministry of Agriculture, Food and Rural Affairs

Organized by KREI Korea Rural Economic Institute

EPIS Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries

Contents

Presentation

Session 3: Sharing the Stories of Successes & Failures of ICT-based International Agricultural Development Cooperation

[Presentation 3-1] World Bank's ICT-based Agricultural Development Cooperation Projects /

▌David J. Nielson (World Bank)

[Presentation 3-2] Indonesian Case of Successful Agricultural Development Project based on ICT /

▌Leli Nuryati (Indonesian Ministry of Agriculture & Rural Development)

[Presentation 3-3] Korea's ICT related Agricultural Projects and Lessons Learned /

▌Lee, Sang Hun (EPIS)

Invitation

Despite technological advances in food value chain system, the issues on food security and rural development persist, with approximately 850 million people undernourished around the globe. Faced with these lasting challenges, international organizations and national governments have arduously strived to develop rural areas and ensure that food be supplied stably. Their extensive policy experiences that have been accumulated over the years would be able to offer insights and lessons to relevant stakeholders working in the agricultural and rural development sector. To facilitate this global effort, the Korean government developed and is experimenting various programs to challenge the pending issues, and this forum is also a part of it.

To find balanced solutions and alternatives to the challenges, representatives from organizations and countries around the world are invited to share their lessons and insights learned from their policy experiences. They will also introduce the current policies, know-how on project management, and best practices to achieve sustainability, with a sole purpose of achieving sustainability in agricultural/rural development.

As this Forum is open to anyone who are interested in the issues, I sincerely hope that you to come to the Forum and share your ideas and insights so that we can learn from each other and make this forum sufficiently meaningful.

Kim, Jae-Soo

Minister, Ministry of Agriculture, Food, and Rural Affairs of the Republic of Korea

인사말

안녕하십니까.

농림축산식품부는 한국농촌경제연구원 및 농림수산식품교육문화정보원과 함께 '국제개발협력사업의 지속가능성을 확보하기 위한 전략의 현재와 미래'라는 주제 아래 국제 ODA 포럼을 개최합니다.

농업 및 농촌 개발분야 정책 실행은 UN에서 2015년에 2030년을 목표연도로 지속가능개발목표(SDGs)가 지정된 이후 개발 이슈 및 협력 업무와 관련된 논의가 계속 이루어지고 있습니다. 국내에서도 제2차 국제개발기본계획(2016~2020)이 수립, 추진되면서 관련 정책과 제도의 개편을 통해 국제개발협력사업의 지속가능성 제고를 위한 체계적인 노력을 하고 있습니다.

또한 식량 생산 기술적 진보에도 불구하고 전 세계적으로 8억 5천만명의 영양부족 등, 식량안보문제가 지속적으로 발생하고 있습니다. 따라서 국제사회는 농업 및 농촌 분야 기관과 국가의 정책경험을 공유할 필요가 있으며, 식량안보 문제에 대한 새로운 해결방안의 하나로 인식되고 있는 정보통신기술 (Information and Communication Technology, ICT)의 역할에 관한 논의도 필요합니다.

본 포럼을 통해 농업 분야 국제개발협력 동향 및 전략, 그리고 농업·농촌 발전 전략 실행 및 성과관리 방법, ICT 국제농업협력 사업의 성공적 사례 등에 대하여 공유 및 토론하고자 하며, 이는 충분히 의미 있는 시간이 될 수 있을 것이라고 생각합니다. 모든 분들께 열려있는 행사이오니 관심 있으신 분들께서는 꼭 참여하시어 행사 당일 뵐 수 있길 기대합니다.

감사합니다.

농림축산식품부 장관 김재수

Ministry of Agriculture, Food and Rural Affairs

KREI Korea Rural Economic Institute

EPIS Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries

국제 ODA 포럼:
국제농업개발사업의 현재와 미래, 그리고 지속가능성 확보를 위한 전략

주요 연사 및 패널 이력

Dr. Kundhavi Kadiresan, Assistant Director-General and Regional Representative for Asia and the Pacific, FAO

2015년 9월 FAO 사무차장보 및 아시아 태평양 지역 대표에 임명됨. 국제경영학 석사 및 경제학 박사학위 소지. 25년이상 개발협력분야에 근무하고 있으며, 대부분 세계은행그룹(World Bank Group)의 아시아, 아프리카, 동유럽 및 남미지부에서 근무

Dr. Paul Winters, Associate Vice-President & Director of Research and Impact Assessment Division (RIA), IFAD

2004년~2015년 동안 American University(워싱턴 DC) 경제학 교수로 재직하며 영향평가, 개발 경제학 및 환경 경제 관련 분야 연구. 주요경력으로는 페루 International Potato Center, 호주의 New England University 및 워싱턴 DC의 Inter-American Development Bank에서 근무하며 영향평가, 이주, 현금 이체 프로그램, 농촌 개발 및 소농에 관한 논문과 보고서 발간. 또한 인도네시아, 페루, 볼리비아, 에콰도르, 에티오피아, 케냐에서 현지 조사 수행 경험

Dr. David Dawe, Regional Strategy and Policy Advisor & Senior Economist, FAO

방콕 FAO 아시아 태평양 지역사무소 정책자문관이자 수석 경제학자. 하버드 대학에서 박사학위를 취득. 특히 아시아 경제 성장 과정 중 식량 정책 및 전환기 농업 전공. 국제미작연구소(IRRI), 태국 FAO 사무소에서 근무한 바 있으며, 로마 FAO 본부에서도 근무. 무역 및 시장, 국내 가격 정책, 생산 및 천연 자원(비료 및 수자원 관리/기후)과 영양 분야의 다양한 연구 간행물 출간

Dr. Juergen Voegele, Senior Director for Agriculture, World Bank

1991년 세계은행에 입사하여 농업 및 환경 서비스(Agriculture and Environmental Services) 부서에서 근무. 2014년 7월 세계은행의 Agriculture Global Practice 수석국장으로 임명됨. 농업•농촌 개발 및 환경 분과 이사회 주재. 중국 농업부와 유럽 및 중앙아시아 농촌 개발부 등과 협력 추진

Nicholas Maddock, Livelihoods and Employment Adviser for UNDP Nepal, UNDP

UNDP 유럽(Bratislava), CIS, 인도 지부에서 농촌 개발 자문위원으로 근무. UNDP 라오스 지부에서는 국가담당 경제전문관으로 근무. 또한 네팔/아프가니스탄 UNDP 사무소, 세계은행 말라위 지부, 아프가니스탄 주재 영국국제개발국(British Department for International Development in Afghanistan)에서 컨설턴트 역임. 더불어 동남부 아프리카의 농촌 개발 고문으로 근무하였고, 영국 Bradford University 공공 부문 투자 분석 강사로 재직 경험

Dr. Mahfuz Ahmed, Practice Leader, Asian Development Bank (ADB)

Ahmed 박사는 농업, 농촌 개발 및 식량 안보, 지역 및 지속 가능한 발전 부서, ADB의 겸직 리더로 2006년 5월 Senior Project Economist로 ADB에 입사. 아시아, 아프리카 및 태평양 지역에서 지속가능한 천연자원관리 및 농촌 개발 분야의 30년 이상 전문 경력. 말레이시아 University of Putra Malaysia 자원 및 농업경제학박사 학위 취득, 방글라데시 Chittagong 대학에서 농업경제 석사 취득

Dr. David J. Nielson, Lead Agriculture Economist, World Bank

Nielson 박사는 세계은행의 수석 농업경제학자로서, '농업공동체를 위한 ICT 기술'프로그램 책임자. 세계은행의 남미, 아프리카, 중동 지역 농업 협력 사업을 기획/관리하고 있음. 시카고대학에서 경제학 박사학위를 취득

Dr. Leli Nuryati, Head of Crops Statistic Division, Indonesian Ministry of Agriculture & Rural Development

인도네시아 농업부 농업정보시스템센터(Center for Agricultural Data and Information Systems, CADIS)의 곡물통계팀장으로 재직

Benoit Thierry, Senior Program Manager for South East Asia, IFAD

IFAD 동남아시아 지부의 수석 프로그램 담당관으로, 과거 인도 담당 수석 프로그램 담당관. 또한 네팔, 태국, 부탄(IFAD 본부)에서 수석 국가담당관으로 근무. 또한 UNOPS 나이로비 지부에서 르완다, 부룬디, 코모로, 마다가스카르 담당 Portfolio Manager로 재직하였으며, UNDP 캄보디아 지부에서는 캄보디아 농촌 개발 고문 역임

Ministry of Agriculture, Food and Rural Affairs

KREI Korea Rural Economic Institute

EPIS Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries

Korea's Global ODA Forum for Sustainable Agricultural Development

- The Present and Future of Development Projects and Strategies to Achieve Sustainability

Speakers and Panelists

Dr. Kundhavi Kadiresan, Assistant Director-General and Regional Representative for Asia and the Pacific, FAO

She was appointed Assistant Director-General and FAO Regional Representative for Asia and the Pacific in September 2015. She holds a Ph.D. in Economics and an MBA in International Business. Ms Kadiresan has more than 25 years of experience in development. With a focus on delivering high-quality value-for-money services to member countries, Ms Kadiresan, an economist, has spent most of her professional career with the World Bank Group. She has worked in Asia, Africa, Eastern Europe and Latin America, where she led senior-level policy dialogues and managed large loan portfolios.

Dr. Paul Winters, Associate Vice-President & Director of Research and Impact Assessment Division (RIA), IFAD

Prior to IFAD, he was a Professor in the Department of Economics at American University in Washington, DC where he published numerous journal articles and working papers in the areas of impact evaluation, migration, smallholder agriculture, rural development and cash transfer programs. Previously, he worked at the Inter-American Development Bank (IDB), University of New England in Australia, and the International Potato Center. He holds a Ph.D. in Agricultural and Resources Economics from the University of California at Berkeley.

Dr. David Dawe, Regional Strategy and Policy Advisor & Senior Economist, FAO

He is a regional strategy and policy advisor and senior economist at the FAO, based in the Regional Office for Asia and the Pacific in Bangkok. He holds a Ph.D. in economics from Harvard University, and specializes in food policy analysis and the transformation of the agricultural sector during economic growth, particularly in Asia. He has spent most of his professional career resident in Southeast Asia, having worked for the Harvard Institute for International Development in Indonesia, the International Rice Research Institute (IRRI) in the Philippines and FAO in Thailand, in addition to working several years at FAO headquarters in Rome. He has published numerous books and research articles in the areas of trade and markets, domestic price policy, production and natural resources (fertilizer and water management, climate) and nutrition. He was formerly an editor of the journal, *Global Food Security*.

Dr. Juergen Voegele, Senior Director for Agriculture, World Bank

Juergen Voegele, Ph. D., was appointed Senior Director of the World Bank's Agriculture Global Practice in July, 2014. Prior to this appointment, he was the Director of the World Bank's Agriculture and Environmental Services Department.
Since joining the World Bank in 1991, Dr. Voegele has held a number of assignments, chairing the Agriculture and Rural Development Sector Board as well as the Environment Sector Board, leading the Agriculture Unit in China and the Agriculture and Rural Development Unit of the Europe and Central Asia Region.

Mr. Nicholas Maddock, Livelihoods and Employment Adviser for UNDP Nepal, UNDP

He has spent many years with UNDP – as an adviser on rural development at the Bratislava Regional Centre for Europe and the CIS, at UNDP India where he supported actions on aid effectiveness, and as the UNDP Country Economist in UNDP Laos. More recently Nick worked as a consultant on rural development and employment for UNDP in Nepal and in Afghanistan, for the World Bank in Malawi, and for the British Department for International Development in Afghanistan.

Dr. Mahfuz Ahmed, Practice Leader, Asian Development Bank

He is concurrently Practice Leader for Agriculture, Rural Development, and Food Security, Regional and Sustainable Development Department, ADB. He joined ADB in May 2006 as a Senior Project Economist. He obtained his Ph.D. in Resource and Agricultural Economics from the University of Putra Malaysia, Malaysia; a Master's degree in Agricultural Economics from Chittagong University, Bangladesh; and a Bachelor's degree in Economics also from Chittagong University, Bangladesh. He has also completed Stanford Executive Program in 2003.

Dr. David J. Nielson, Lead Agriculture Economist, World Bank

He is a Lead Agricultural Economist in the Agriculture Global Practice at the World Bank. He leads the ICT for Agriculture Community of Practice at the World Bank. He was a founder of the Bank's Community of Practice on Agricultural Knowledge and Information Systems and also led the Bank's community of practice on Agricultural Policy. He has designed and managed World Bank support for agricultural operations in Latin America, Africa and the Middle East. He holds a Ph.D. in Economics from the University of Chicago.

Dr. Leli Nuryati, Head of Crops Statistic Division, Indonesian Ministry of Agriculture & Rural Development

She is the Head of Crops Statistic Division at the Center for Agricultural Data and Information Systems (CADIS), Ministry of Agriculture of Indonesia.

Mr. Benoit Thierry, Senior Program Manager for South East Asia, IFAD

He is an agricultural economist based in IFAD Rome. Graduated in 1988 from Sorbonne University, he has extensive field experience in Latin America, Africa and Asia. Since he joined IFAD headquarter in 2004, he is a country program manager successively in charge of Rwanda, Zimbabwe, Comoros and Madagascar. In October 2011, he moved to Asia division where he was successively in charge of Bhutan, Nepal, Thailand, Philippines, Laos, Cambodia, and support the Farmers Organizations network in Asia-Pacific. From 2014 to 2016, he established the IFAD South East Asia Hub covering Vietnam, Laos, Cambodia, Thailand and Myanmar. He is now back to Rome headquarter managing IFAD portfolio in Cambodia and Bangladesh and ensuring the function of Knowledge Management officer for Asia Pacific division.

Program

Time	Title/Description	
09:30-10:00	**Registration**	
10:00-10:05	Opening Speech	Lee, Junwon (Vice Minister, MAFRA)
10:05-10:15	Congratulatory remarks	Kim, Chang Gil (President, KREI) Park, Chulsoo (President, EPIS)
10:15-10:30	[Keynote Speech] Ways for Sustainable International Agricultural Cooperation	Kundhavi Kadiresan (Assistant Director-General, FAO)
10:30-10:45	Introduction and Invitation to IPPC CPM-12 Meeting	Jingyuan Xia (Secretary, IPPC)
10:45-11:00	**Tea Time**	
Session 1: Trends and Strategies for International Development Cooperation in the Agricultural Sector Chair: Lee, Myung Soo (Former Vice Minister of MAFRA)		
11:00-11:20	[1-1] Looking Ahead: IFAD's Strategy for Contributing to the 2030 Agenda	Paul Winters (IFAD)
11:20-11:40	[1-2] Korea's Strategy for International Cooperation, its Progress and Future Plans	Jeong, Il Jeong (MAFRA)
11:40-12:00	[1-3] FAO's Strategy for International Agricultural Development, its Projects and Future Plans	David Dawe (FAO)
12:00-12:30	**[Discussion 1]** *Designing Better Strategies for International Agricultural Development Cooperation for Development*	Discussant: Chung, Ki Whan (Korea Institute for Rural Development) Kwak, Jae Seong (Kyung Hee University)
12:30-14:00	**Luncheon**	
Session 2: Promoting Sustainable International Rural &Agricultural Development Cooperation through Performance Management Chair: Hong, Eun-Pyo (Sangmyung University)		
14:00-14:20	[2-1] World Bank's Performance Management for Agricultural Cooperation Development in Developing Countries	Juergen Voegele (World Bank)
14:20-14:40	[2-2] Unresolved in Rural Development	Nicholas Maddock (UNDP)
14:40-15:00	[2-3] ADB's Operations in Agriculture and Natural Resources	Mahfuz Ahmed (Asian Development Bank)
15:00-15:30	**[Discussion 2]** *Promoting Sustainable International Rural & Agricultural Cooperation*	Discussant: Im, Jeong Bin (Seoul National University) Kim, Tae Yoon (Seoul National University)
15:30-15:45	**Tea Time**	
Session 3: Sharing the Stories of Successes &Failures of ICT-based International Agricultural Development Cooperation Chair: Rhee, Cheul (Ajou University)		
15:45-16:05	[3-1] World Bank's ICT-based Agricultural Development Cooperation Projects	David J. Nielson (World Bank)
16:05-16:25	[3-2] Indonesian Case of Successful Agricultural Development Project based on ICT	Leli Nuryati (Indonesian Ministry of Agriculture &Rural Development)
16:25-16:45	[3-3] Korea's ICT related Agricultural Projects and Lessons Learned	Lee, Sang Hun (EPIS)
16:45-17:15	**[Discussion 3]** *Sharing the Stories of Successes &Failures of ICT-Based International Agricultural Development Cooperation*	Discussant: Song, Yang Hoon (Chungbuk National University) Benoit Thierry (IFAD)
Session 4: Open Discussion		
17:15-17:50	Chair: Heo, Jang (KREI)	
17:50-17:55	Closing Ceremony	

일 정

시 간	프로그램	발표자
09:30–10:00	• 등록 (30')	사회: 이대섭(농경연)
10:00–10:05	• 개회사 (5')	이준원(농림축산식품부 차관)
10:05–10:15	• 축사 (10')	김창길(농경연 원장) 박철수(농정원 원장)
10:15–10:30	**기조연설**: 지속가능한 발전을 위한 농업 개발협력정책의 방향	Kundhavi Kadiresan (Assistant Director-General, FAO)
10:30–10:45	IPPC(국제식물보호협약) 총회 소개 및 초청	Jingyuan Xia(Secretary, IPPC)
10:45–11:00	• 사진촬영 및 다과 (15')	
세션 1: 국제농업개발협력 추진동향과 전략		좌장: 이명수(전 농림부 차관)
11:00–11:20	**발표1-1**: IFAD의 농업개발협력 전략틀(Strategic Framework)과 사업 추진동향, 그리고 향후 전망	Paul Winters(IFAD)
11:20–11:40	**발표1-2**: 한국의 국제농업개발협력 전략과 추진동향, 그리고 향후 계획	정일정(농식품부)
11:40–12:00	**발표1-3**: FAO의 국제농업개발협력 전략과 사업 추진동향, 그리고 향후 전망	David Dawe(FAO)
12:00–12:30	• 토론 (30')	토론: 정기환(한국농촌발전연구원), 곽재성(경희대)
12:30–14:00	• 점심식사 (80')	
세션 2: 성과관리를 통한 국제농업개발협력 사업 지속가능성 제고		좌장: 홍은표(상명대)
14:00–14:20	**발표2-1**: World Bank의 농업개발협력 사업 성과관리 방안, 그리고 향후 전망	Juergen Voegele(World Bank)
14:20–14:40	**발표2-2**: 농촌개발협력에 있어 풀리지 않은 숙제들	Nicholas Maddock(UNDP)
14:40–15:00	**발표2-3**: ADB의 농업개발협력 사업 성과관리 방안, 그리고 향후 전망	Mahfuz Ahmed(ADB)
15:00–15:30	• 토론 (30')	토론: 임정빈(서울대), 김태윤 (서울대)
15:30–15:45	• 다과 (15')	
세션 3: ICT 기반 ODA 프로젝트 성공 경험 공유		좌장: 이철(아주대)
15:45–16:05	**발표3-1**: World Bank의 농업 관련 ICT 프로젝트 추진 동향	David Nielson(World Bank)
16:05–16:25	**발표3-2**: ICT기반 ODA 저개발국 성공 추진 사례(인도네시아)	Leli Nuryati(인도네시아 농업부)
16:25–16:45	**발표3-3**: 한국의 농업 관련 ICT 프로젝트 추진 현황	이상훈(농정원)
16:45–17:15	• 토론 (30')	토론: 송양훈(충북대), Benoit Thierry(IFAD)
세션 4: 종합토론		
17:15–17:50	• 종합토론 (35')	좌장: 허장 (농경연)
17:50–17:55	• 폐회	

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Keynote Speech

Ways for Sustainable International Agricultural Cooperation

▌Kundhavi Kadiresan
(Assistant Director-General, FAO)

KREI

FOOD AND AGRICULTURE ORGANIZATION

OF

THE UNITED NATIONS (FAO)

"Ways for Sustainable International Agricultural Cooperation"

Korea's Global ODA Forum for Sustainable Agricultural Development

Incheon, Republic of Korea

4 April 2017

Kundhavi Kadiresan
Assistant Director-General and Regional Representative
Regional Office for Asia and the Pacific

Distinguished Guests and Development Partners
Members of the Ministry of Agriculture and Rural Affairs
Ladies and Gentlemen,

FAO is delighted and honored to open this important International Forum that will discuss the status and strategies of development cooperation projects and programmes in the global agriculture sector.

And what a critical and complex sector it is. In order to feed the world we face immense challenges. By 2050, with a global population of almost 10 billion people, most will be living in cities. As countries move from developing economies to middle income and then toward developed economies, diets are changing and consumers want more protein from animal products. That increase in production in turn leads to even greater strains on our environment – which is already struggling due to climate change. We will need to produce 50 percent more food than we produce today in order to feed everyone by the middle of this century. Yet most arable land is already under cultivation and we are already seeing competing demands for available fresh water. While the number of undernourished has been on the decline for decades, that rate of decline has slowed in more recent years. And in fact a recent FAO report on the future of agriculture has determined that unless we change the way we do business, we will not meet the global pledge to eliminate hunger by 2030. Today there are still nearly 800 million hungry people in the world.

For those of us in the international development arena, that's the background. But we have other challenges too. We are working in a crowded field. Some agencies duplicate the work of others, with pilot projects scattered here and there, and there is a sense among some donors and other resource partners that at times we don't work well together and are even poor value for money. Then there are new players –private sector, trade associations, entrepreneurs – entering the development space with new ideas and approaches.

So we meet here at a very critical time for multilateral and bilateral relationships. With all that in mind, I would like to talk about four things with respect to finding a way forward for sustainable international cooperation in the agricultural sector that will benefit everyone.

First, while I outlined the challenges, we do have a common set of rules. And of course I am referring to the 17 Sustainable Development Goals. Second, how do we find common ground among ourselves? By that I mean how do we find the sweet spot where what we, as development partners, can offer the countries when perhaps those countries may want something a bit different, and perhaps donors want something different still? Third, how do we better ensure that good practices stemming from what we've learned so far finds their way into mainstream government policies, governance and capacity development – independent of further interventions by us? And fourth, I would like to discuss the expanding role of the new players, private sector for public-private partnerships, and how funding, innovation and technology will drive us forward. All of this relates

to where I see the emergence of sustainable cooperation in the agriculture sector as we move forward.

But let's start with a bit of context.

For decades, the community of multilateral organizations has been actively involved in helping developing countries address the many challenges they face in feeding their growing populations, reducing poverty, improving rural livelihoods and managing their natural resources. Historically, we've done that through working, usually independently, with resource partners, trust funds and bilateral donors.

But it's only been in more recent times that multilateral organizations have started to work more closely with one-another – becoming more mindful that no single agency can solve these complex challenges by themselves – and understanding the clear message from resource partners that we must ensure that our projects and programmes in the field are providing value for money. Our donors and the beneficiaries want to see good impact and tangible results. And so they should. **So do we.**

So let me now go into a bit more detail about the four points I outlined.

My first point relates to Agenda 2030. Looking back, the Millennium Development Goals helped us categorize what we needed to do, the need to re-focus and re-tool our approaches to interventions. Now with the 17 Sustainable Development Goals, FAO, other UN agencies and development partners are bringing our work into an even sharper focus – guided by the specifics in the 17 SDGs. It gives us a more precise direction and an opportunity to work with our member countries on the areas that they deem important.

Second, we need to find common ground among all of us for development to be sustainable. So let me expand upon the idea of finding common ground between the finance/aspirations of donors, governments and multilateral agencies such as FAO. It is common sense that we should align our joint efforts within the framework of achieving the SDGs. But to make our cooperation sustainable we must focus on specific outcomes that are measurable and achievable. Achieving real impact, and not simply refining processes, must be the goal. That means a bespoke approach, carefully tailoring the needs and capacity of each country, matching that to the aspirations of the resource partner, and the ability and capacity of the implementing agency. That's what I mean by finding that sweet spot. There is no one-size-fits-all.

My third point is about the need to do more of what we do best, and less of some of the other things that haven't worked so well. We need to move away from scattered projects across a wide array of interventions, and focus more clearly on a programmatic approach. Many pilot projects have produced excellent results yet the good

practices that have emerged have often not been taken forward. Again, one size doesn't fit all and so the needs of each country must be assessed and then that tailored approach I mentioned (with donors and implementing agencies) can take shape. One good example of this programmatic approach is FAO's work on prevention of the outbreak and spread of animal diseases within countries and across borders. The FAO ECTAD programme is active at ground level in a number of countries in this region.

My fourth point is about the expanding role of the private sector and other non-state actors in international development work. While the traditional role of the UN Agency and its government constituents must form the foundation of sustainable international cooperation, the role of the private sector and public-private partnerships is expanding. Increasingly the private sector is showing it is very keen to become more involved in outreach and agricultural extension. And there are clear examples of the private sector's interest. The private sector's reaction to climate change initiatives and the Paris Agreement are prime examples. There's a business case for private companies to do so, and we should recognize and leverage that in areas such as innovation and ICT use in agriculture.

Government was not alone in driving the successful passage of the Paris Agreement. The World Economic Forum's CEO Climate Leadership effort, including CEOs from 79 companies and 20 economic sectors with operations in more than 150 countries and territories, pushed hard for an agreement in Paris. Momentum also came from private lenders such as Crédit Agricole CIB, BNP Paribas

and HSBC which pledged to scale up their investments in renewable and clean energy, green bonds, low-emission transport and agriculture.

So we simply cannot afford not to engage the private sector because, frankly, the private sector invests much more money than the public sector does in agriculture. FAO estimates that private investment is about four times that of public investment. So if we want to see a transformative change then we will need to work even closer with the private sector in the future.

Private capital is an enormous source of global wealth that has not historically played as significant a role in development as its scale would suggest. But that's changing, and particularly when it comes to the private sector's response to climate change.

Sensing the mood of consumers as mainly wanting to ensure the products and services they buy are not making climate change any worse, a new array of greener investment products is being introduced.

In finance, there are a few pioneers leading the charge. Recently the World Bank, with the support of BNP Paribas, launched two potentially revolutionary products that could change traditional ways of thinking about financing development. The first was a new ten-year Sustainable Development Bond that provides an opportunity for retail investors to combine their financial objectives with social and environmental sustainability goals.

The second, announced earlier this month, is a bond tied directly to the SDGs, linking returns to the stock market performance of companies in the Solactive Sustainable Development Goals (SDGs) World Index, backed by BNP Paribas. The Index includes 50 companies that are recognized industry leaders on environmentally and socially sustainable issues, or that dedicate at least 20 percent of their activities to sustainable products.

New concepts like crowd funding, blended finance (to bring public, philanthropic and private capital) and traditional sources of finance must come together to achieve the trillions of dollars in annual funding that will be needed to implement the 2030 agenda.

Colleagues, partners and friends,

As I mentioned at the beginning, the world's population is expected to reach almost 10 billion people by 2050. Most of that growth will likely occur in areas highly dependent on the agriculture sector (crops, livestock, forestry and fisheries) and those areas with high rates of food insecurity. Growth in the agriculture sector will be, therefore, one of the most effective means of reducing poverty and achieving food security.

In order to defeat hunger we must also eradicate poverty by removing the barriers that keep people in persistent vulnerability. It means new programmes and projects to help the world's 500 million small-scale family famers confidently and sustainably produce the food that makes up the majority of what we eat each day, amidst the

growing pressure on our natural resources and changing climate. And they need to be able to do so confidently and profitably.

The Sustainable Development Goal for hunger has set the ambitious target of achieving Zero Hunger by 2030. As this is already 2017, we can see the clock is ticking. Achieving Zero Hunger means that a child born today shall not be malnourished by the time she becomes a teenager. That's the goal – and it must be a sustainable goal.

I've mentioned those four areas. Achieving SDG's as our mandate. Finding common ground among ourselves to add value to donors /financiers and beneficiaries. Taking a more programmatic approach and working with in new funding arrangements, with the private sector and non-state actors, exploring and using new forms of finance, technology and innovations.

Today's event will help us share our experiences, further develop our good practices and learn from our failures. Working together, thinking and acting in new ways, we can eliminate hunger and poverty through sustainable and inclusive growth in the agriculture sector. '**TOGETHER WE CAN'.**

I thank you all.

Session 1

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Trends and Strategies for International Development Cooperation in the Agricultural Sector

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 1-1

Looking Ahead: IFAD's Strategy for Contributing to the 2030 Agenda

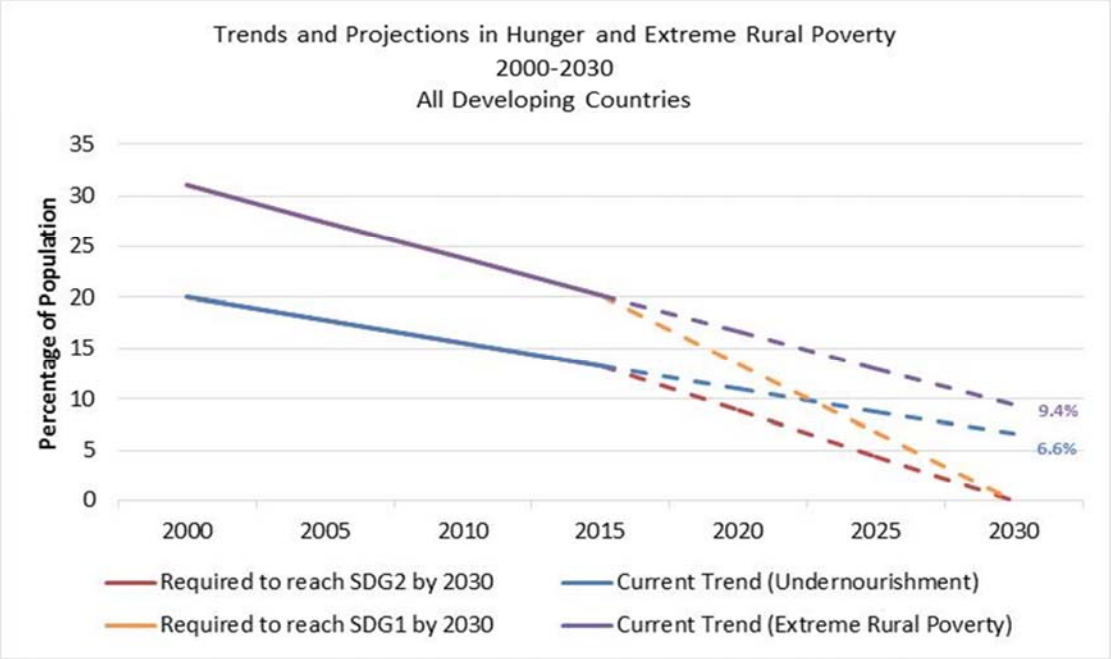
Paul Winters
(IFAD)

KREI


Looking Ahead: IFAD's Strategy for Contributing to the 2030 Agenda
Korea's Global ODA Forum for Sustainable Agricultural Development
Seoul, 4 April 2017
IFAD
Investing in rural people
Paul Winters
Associate Vice-President, a.i., Strategy and Knowledge Department
& Director, Research and Impact Assessment Division
International Fund for Agricultural Development


Agenda 2030 creates a dramatic challenge
SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS
2

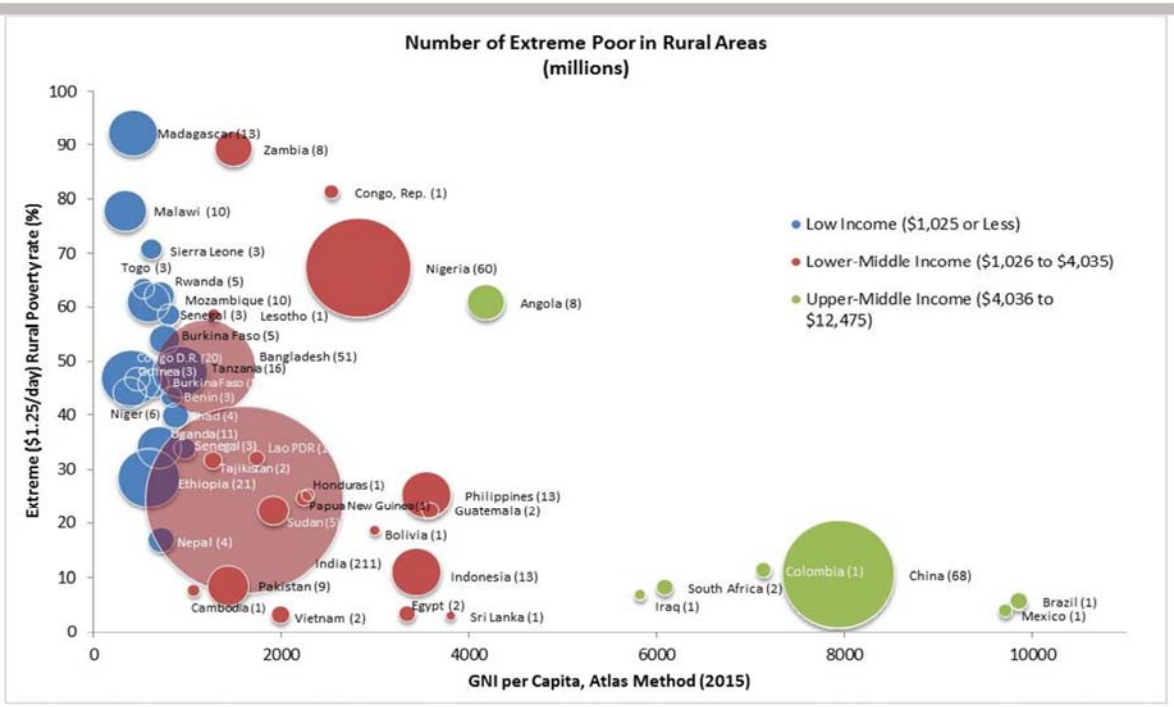
At current rates, SDG1 & SDG2 will not be achieved



Source: IFAD RDR Database (2016), SOFI (2016)

3

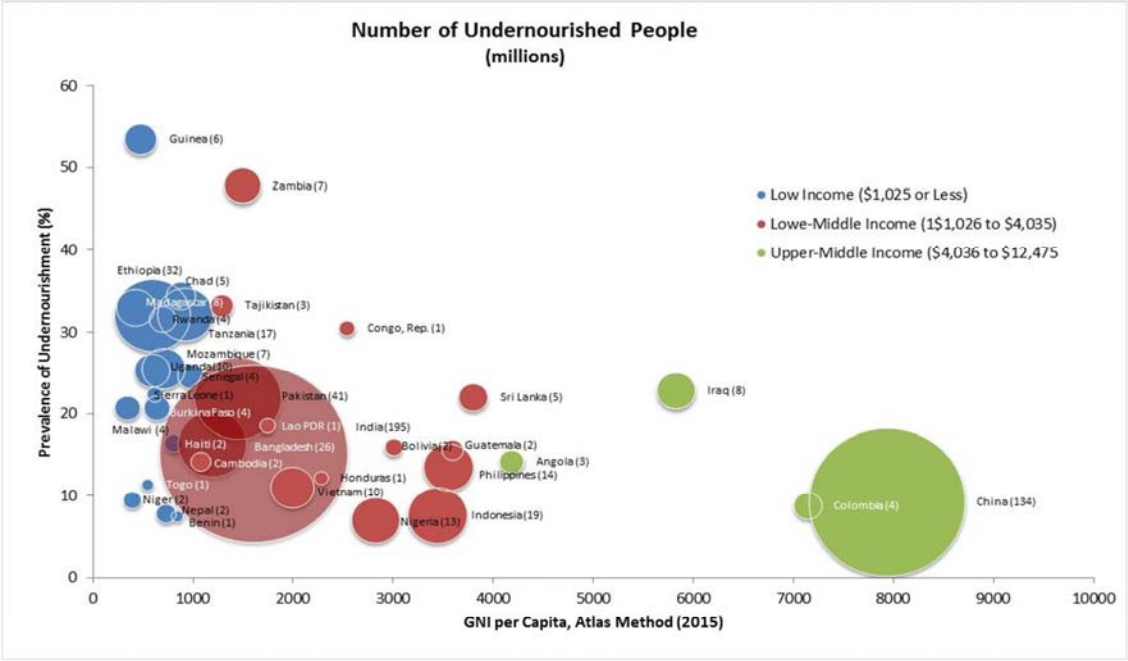
Greater efforts must be made in LICs and LMICs



Source: Authors' calculations based on IFAD RDR Database (2016), World Development Indicators (2017)

4

Greater efforts must be made in LICs and LMICs



Source: Authors' calculations based on IFAD RDR Database (2016), World Development Indicators, State of Food Insecurity in the World (2016)

5

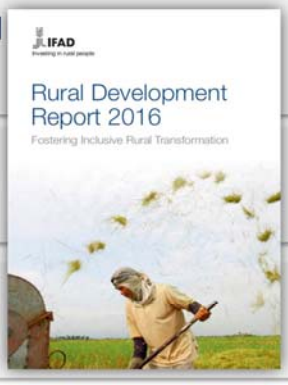
Thinking towards 2030…

Rural Development Report 2016 questions:

1) What are the different pathways of structural and rural transformation across the developing world?

2) What are the consequences of transformations for rural poverty reduction and inclusion?

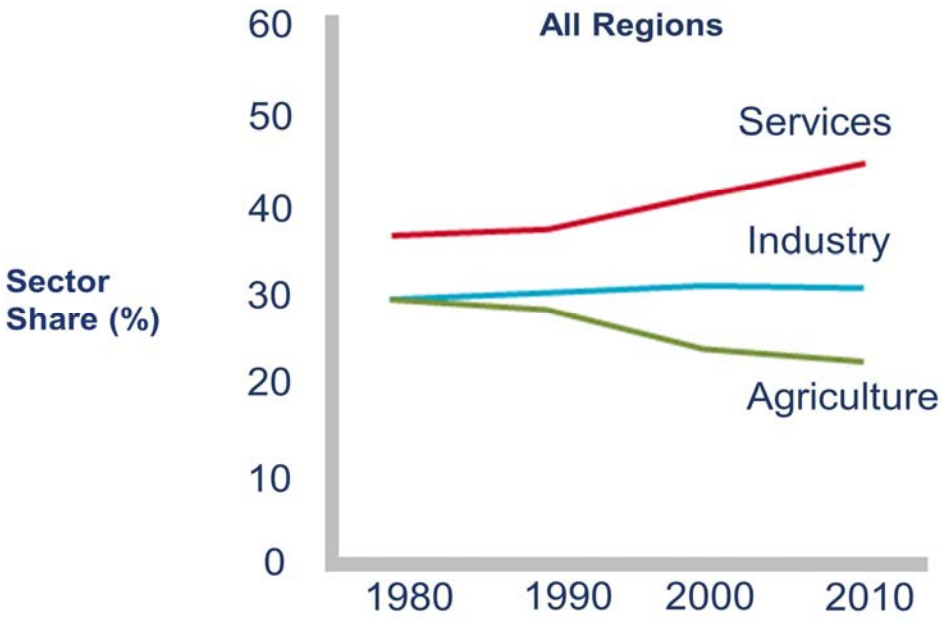
3) What can the principal actors do to promote an inclusive rural transformation?



- Analysis of the speed of structural and rural transformations and poverty reduction in 60 countries from 5 developing regions.
- Period: 1995-2015

6

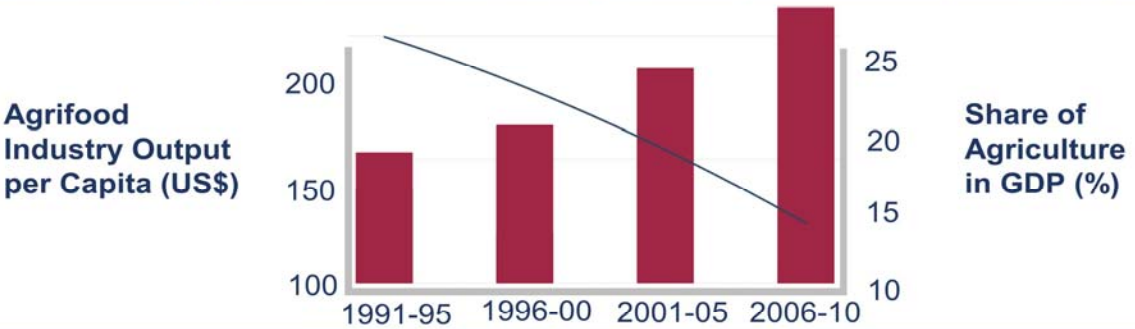
Economic growth → structural transformation → changing, but not diminishing, the role of agriculture



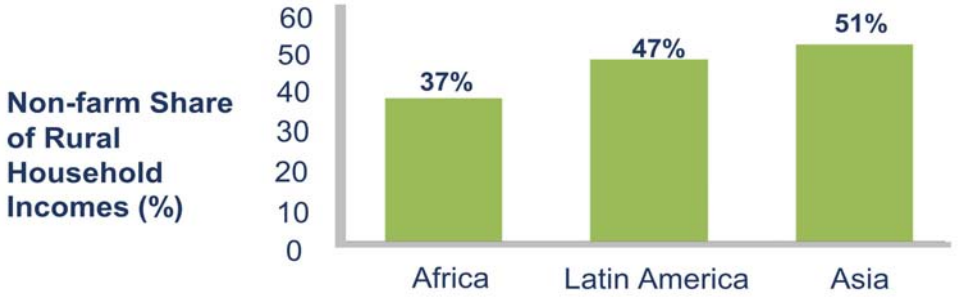
7

Structural transformation accompanied by rural transformation

Decrease in agric. share → increases in agric. and agro-industrial productivity

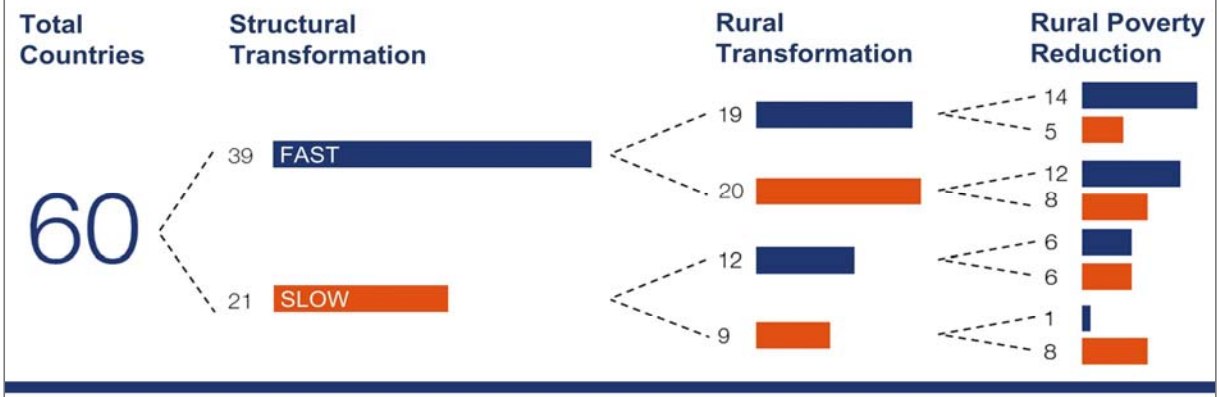


Rural sector has become more diverse



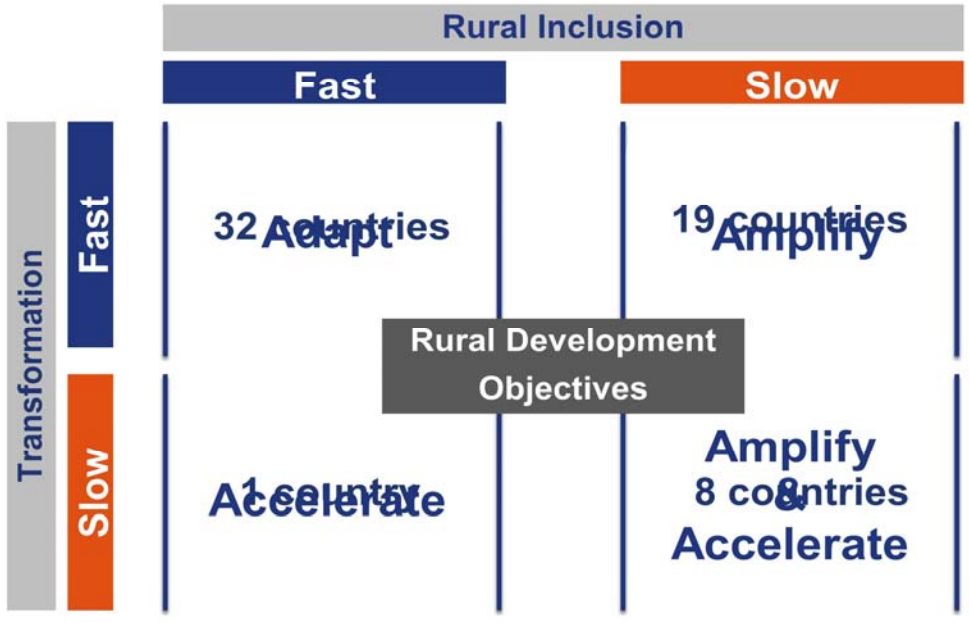
8

Rapid structural or rural transformation do not automatically lead to rapid rural poverty reduction



9

Rural development strategies for inclusive rural transformation are context-specific but structured



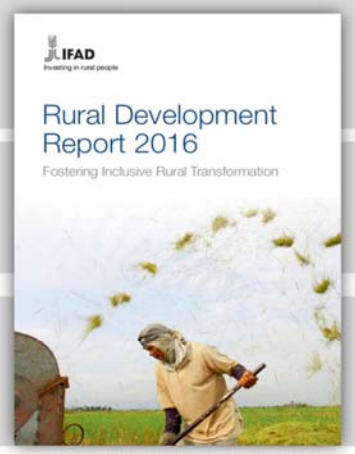
10

RDR 2016: Key messages

Rural transformation happens as part of a broader process of structural transformation altering the role of agriculture and broadening rural investment opportunities.

Inclusive rural transformation does not happen automatically, *it must be made to happen.*

Promoting inclusive rural transformation means making the right strategic decisions in each of the different contexts.



FIDA
Invertir en la población rural

11

IFAD Strategic Framework 2016-2025: Overview

***Strategic vision:* Inclusive and sustainable rural transformation**

Overarching goal:
Poor rural people overcome poverty and achieve food security through remunerative, sustainable and resilient livelihoods

Strategic Objectives

SO 1	SO 2	SO 3
Increase poor rural people's productive capacities	Increase poor rural people's benefits from market participation	Strengthen the environmental sustainability and climate resilience of poor rural people's economic activities

Outcomes

Enabling policy and regulatory frameworks at national and international levels	Increased levels of investment in the rural sector	Improved country-level capacity for rural policy and programme development, implementation and evaluation

Pillars of IFAD's Results Delivery

Country programme delivery	Knowledge building, dissemination and policy engagement	Financial capacity and instruments	Institutional functions, services and systems

Principles of engagement

- Targeting
- Empowerment
- Gender equality
- Innovation, learning and scaling up
- Partnerships

12

Strategic Objective 1: Increase poor rural people's productive capacities

Rural transformation →

Investment in adoption of agricultural technology and innovation to boost smallholder productivity

13

Strategic Objective 2: Increase poor rural people's benefits from market participation

Rural transformation →

Investing in better, more transparent, more efficient, and more ***inclusive*** domestic food markets

14

Strategic Objective 3: Strengthen the sustainability and climate resilience of poor rural people's economic activities

Rural transformation →
Investing in land and natural resource governance and institutions to ensure inclusiveness

15

Looking Ahead: IFAD's Strategy for Contributing to the 2030 Agenda

1) Targeted and tailored approaches to LICs, LMICs and UMICs depending on stage of rural transformation and level of inclusion

2) Innovative interventions targeting poor and marginalized men and women living in rural areas

3) Partnerships and policy engagement to leverage IFAD's investments (e.g. Smallholder Agriculture Finance and Investment Network)

4) Using results-based management with measurement from outputs to impact to ensure contribution to SDG1 and SDG2

16


Thank you
IFAD
Investing in rural people
Four Decades
Investing in Rural People
Fostering Inclusive Rural Transformation

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 1-2

Korea's Strategy for International Agricultural Cooperation, its Progress and Future Plans

Jeong, Il Jeong
(MAFRA)

KREI

Table of Contents

Ministry of Agriculture, Food and Rural Affairs

Ministry of Agriculture, Food and Rural Affairs

Ⅰ Korea's International Agricultural Cooperation

Ⅰ-1. Success Story of Korean Agriculture

Ⅰ-1. Success Story of Korean Agriculture

Ministry of Agriculture, Food and Rural Affairs

Establishment of RDA

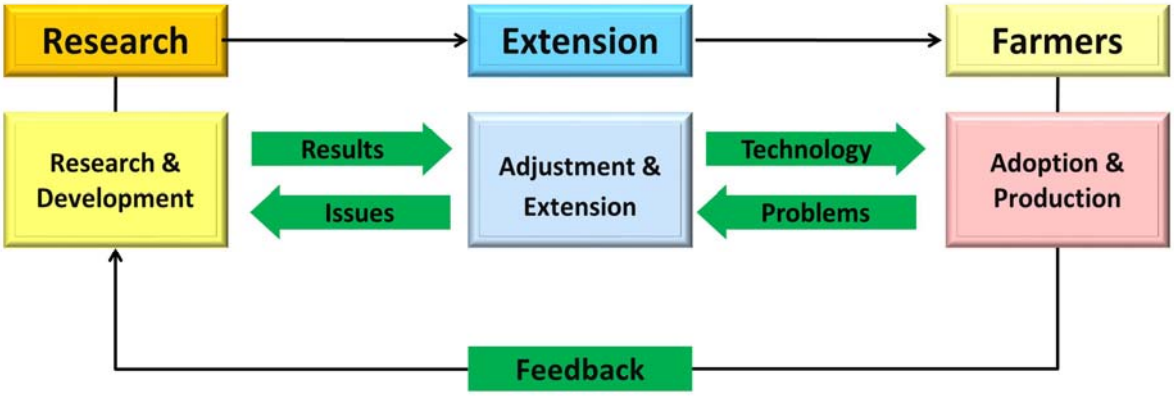
1962 : Rural Development Administration(RDA) established

▶ 2012 : 50th anniversary of RAD's establishment

I-1. Success Story of Korean Agriculture

Ministry of Agriculture, Food and Rural Affairs

Research & Extension Linkage



FAO approved Korea's 「R&D-Technology Transfer Network」 as the most efficient system (1985)

I-1. Success Story of Korean Agriculture

Ministry of Agriculture, Food and Rural Affairs

Research on High-Yielding Rice Varieties

1971: Tong-il rice developed → 'Green Revolution'

* Korea achieved **rice self-sufficiency** with high-yielding variety **'Tong-il'**

Korea's situation in 1960s,

"Shortage of food, agricultural technology and SOC"

- **Rapid population growth in post- independence(1945) and Korean War(1950~1953) years**
- **Chronic food shortage : 'Boritgogae'**
- **Food import: (1971) US $206million (8.6% of total import, 19.3% of total export)**

*** World's food shortage(1950s~60s) : The 2nd World War, crop yield shortage in Europe and Asia**

Policy goal in the 1970s : Achieving Rice Self-sufficiency

I-1. Success Story of Korean Agriculture

Ministry of Agriculture, Food and Rural Affairs

Development of "TONG-IL" Rice

- ❖ Rice self-sufficiency as the primary national agenda in the 1960s
- ❖ Development of *TONG-IL* rice in 1971 : 3.5MT(1965) → 6.0MT (1977)

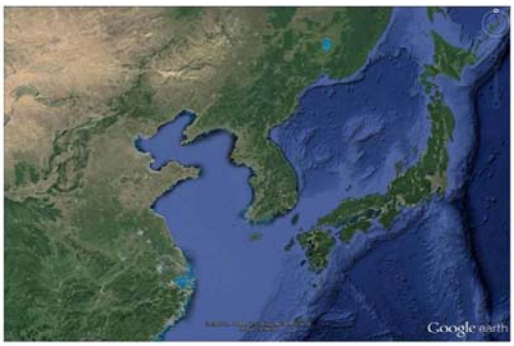
- ❖ Led the advancement in crop breeding & cultivating technologies
- ❖ Bridge to the "White Revolution"
- ❖ Acted as a driving force of the secondary and tertiary industries

I-1. Success Story of Korean Agriculture

Ministry of Agriculture, Food and Rural Affairs

Large-scale Forest Restoration

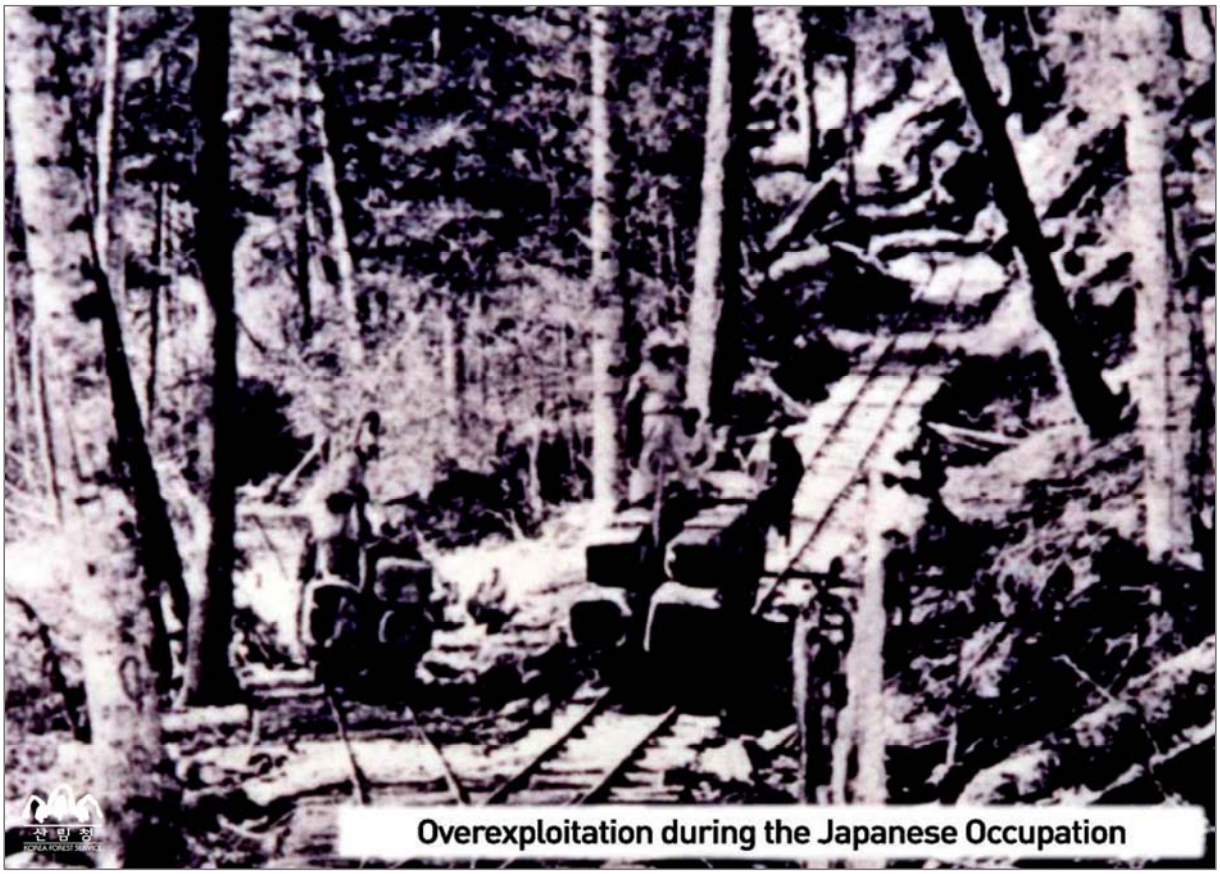
Forest Ecosystem in Korea



Forest ecosystem as key component of biodiversity in Korea

- ▸ Total land area : 10Mha / Agricultural land : 2Mha (20%) / Forest area : 6.4Mha (64%)

  -Biological species : 38,011 (5,241plants)



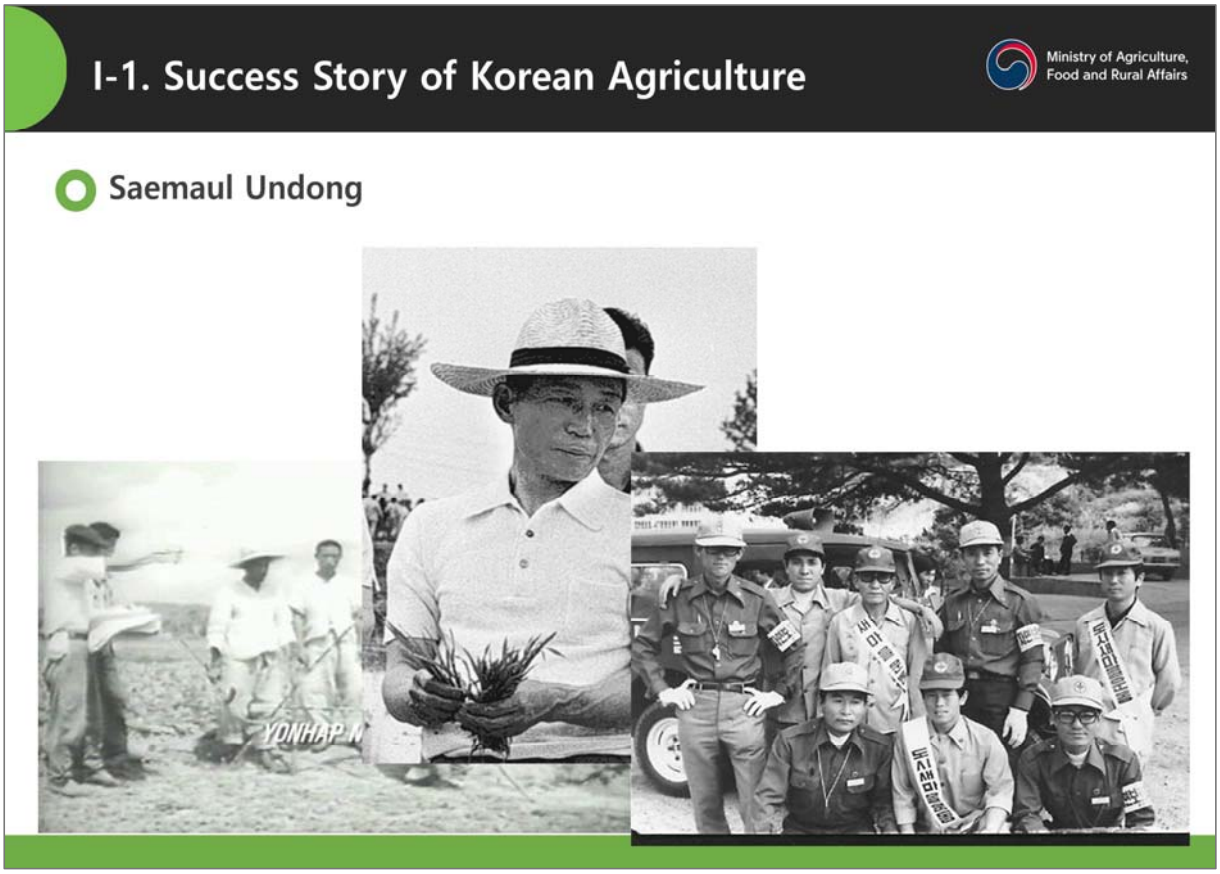
I-1. Success Story of Korean Agriculture

Ministry of Agriculture, Food and Rural Affairs

Large-scale Forest Restoration

79 USD	*GNI per capita*	28,650 USD
26 million	*Population*	48 million
12㎥/ha	*Forest stock volume*	126㎥/ha


새 마 을 산 림
산림청
KOREA FOREST SERVICE
Restoration Model established under the *Saemaul Undong*


I-1. Success Story of Korean Agriculture
Ministry of Agriculture, Food and Rural Affairs
Saemaul Undong
YONHAP

I-1. Success Story of Korean Agriculture

Ministry of Agriculture, Food and Rural Affairs

Saemaul Undong



Improving the Local Communities and Lives of Local People

- *Diligence*
- *Self-reliance*
- *Virtue of cooperation*





Ministry of Agriculture, Food and Rural Affairs

I Korea's Agricultural Cooperation

I-2. Current Status of Korea's Agricultural Cooperation

I-2. Current Status of Korea's Agricultural Cooperation

Ministry of Agriculture, Food and Rural Affairs

MAFRA's ODA(Official Development Assistance) Status

Current Status

97 Projects arranged in 23 Countries from 2006-2017

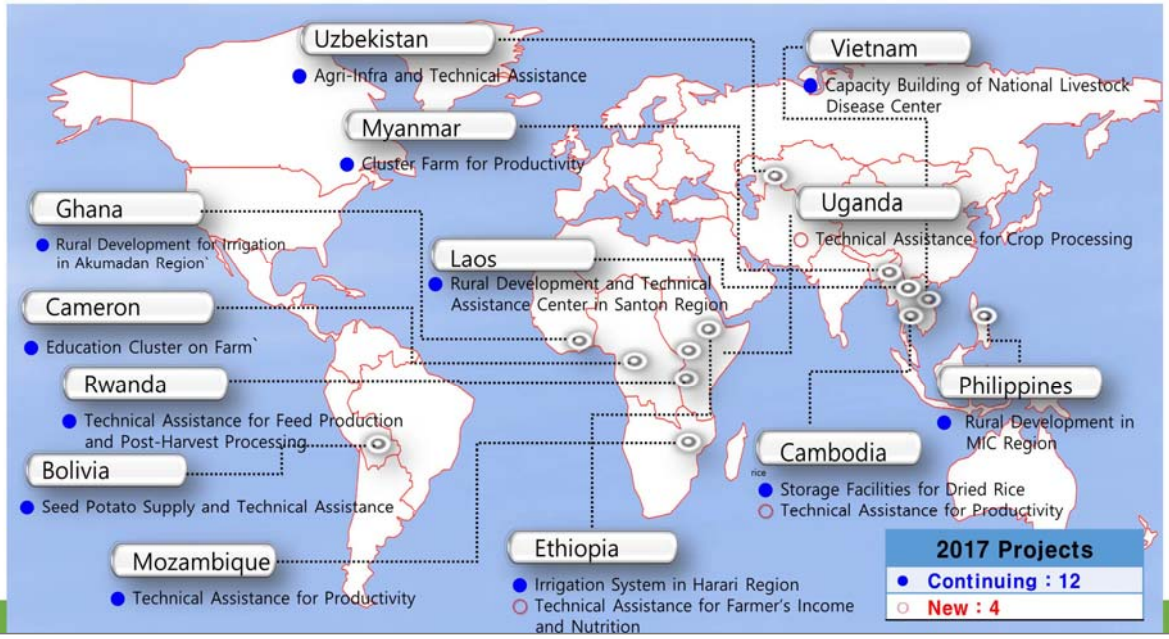
71 completed, 26 ongoing

2006 (USD 300,000)	2017(USD 15million)
4 Projects	Bilateral (19), Multi-bi(4), Consulting(3)

I-2. Current Status of Korean Agricultural Cooperation

Ministry of Agriculture, Food and Rural Affairs

Bilateral Projects



I-2. Current Status of Korea's Agricultural Cooperation

Ministry of Agriculture, Food and Rural Affairs

MAFRA's ODA(Official Development Assistance) Status

I-2. Current Status of Korea's Agricultural Cooperation

Ministry of Agriculture, Food and Rural Affairs

MAFRA's ODA(Official Development Assistance) Status

Ministry of Agriculture, Food and Rural Affairs

I Korea's Agricultural Cooperation

I-3. Review of Korea's Agricultural Cooperation

I-3. Review of Korea's Agricultural Cooperation

Ministry of Agriculture, Food and Rural Affairs

Review of MAFRA's ODA(Official Development Assistance) Programs

Vietnam

Project on Facility and Technological Support for Culturing Potato Micro tubers

2008-2010, 2011-2015

Self-sufficient system through **infrastructure** building and **technology transfer** for seed potato production

Securing a stable demand through partnership with **private companies** including Orion Food Vina

3

I-3. Review of Korea's Agricultural Cooperation

Ministry of Agriculture, Food and Rural Affairs

Review of MAFRA's ODA(Official Development Assistance) Programs

Ghana

Establishment of Agricultural Irrigation System

2008-2010, 2011-2015

Drip Watering and Sprinkler enables tomato production in twice a year despite dry season, increasing farmer's income

I-3. Review of Korea's Agricultural Cooperation

Ministry of Agriculture, Food and Rural Affairs

Review of MAFRA's ODA(Official Development Assistance) Programs

Bad Practices

1. Installation of water pump in regions with unstable electricity supply

2. Establishment Rice Processing Center (RPC) in regions with low-demand for milled rice

3. Provision of agricultural machine not appropriate for local environment

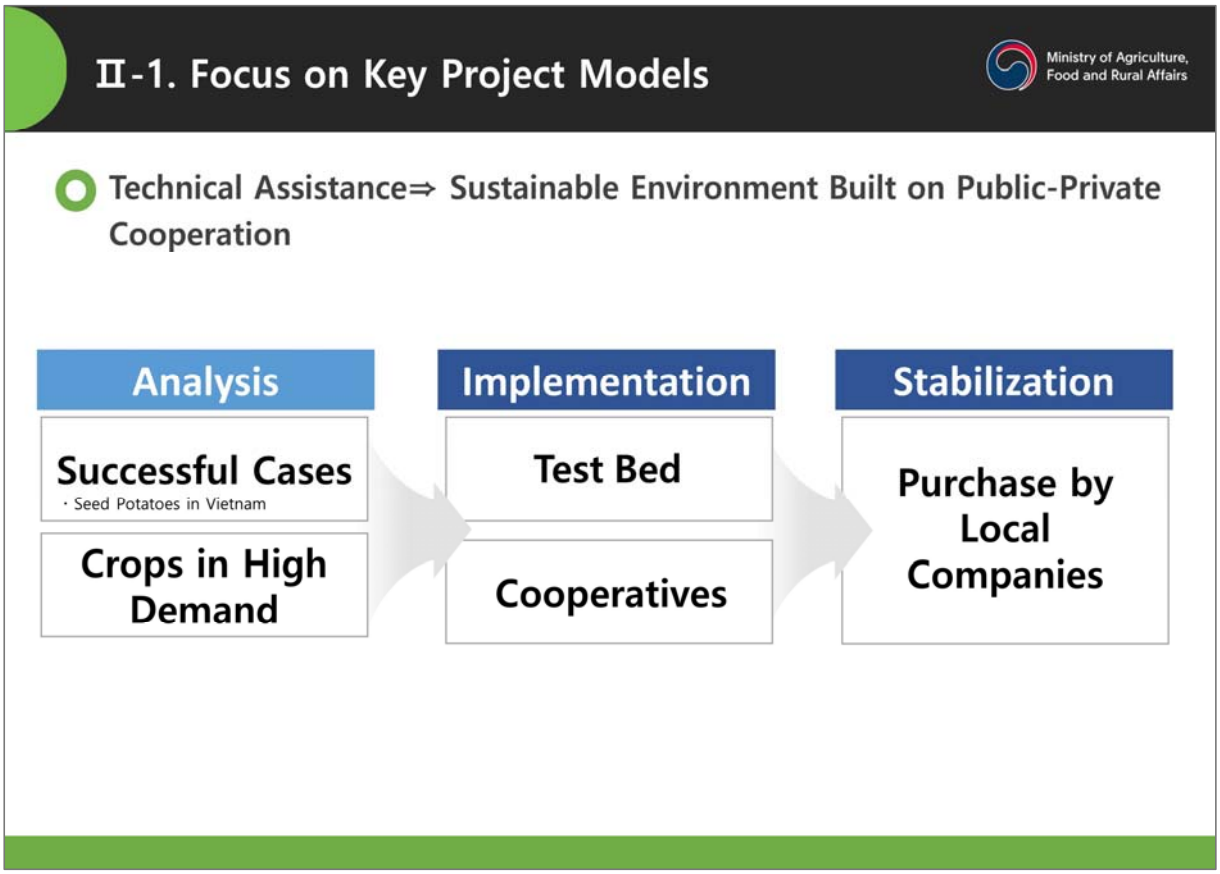
Table of Contents

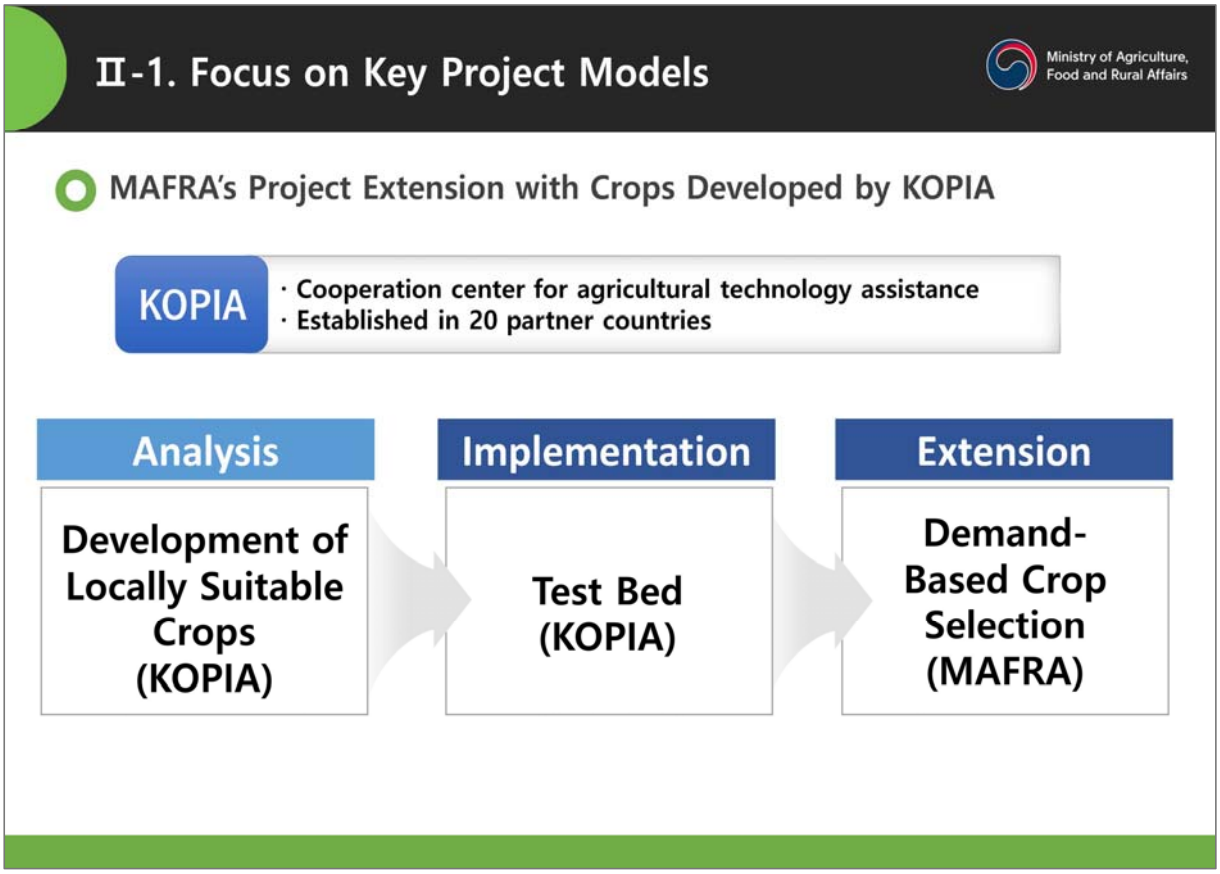
Ministry of Agriculture, Food and Rural Affairs

Ministry of Agriculture, Food and Rural Affairs

Ⅱ MAFRA's ODA Strategy and Future Plans

Ⅱ-1. Focus on Key Project Models

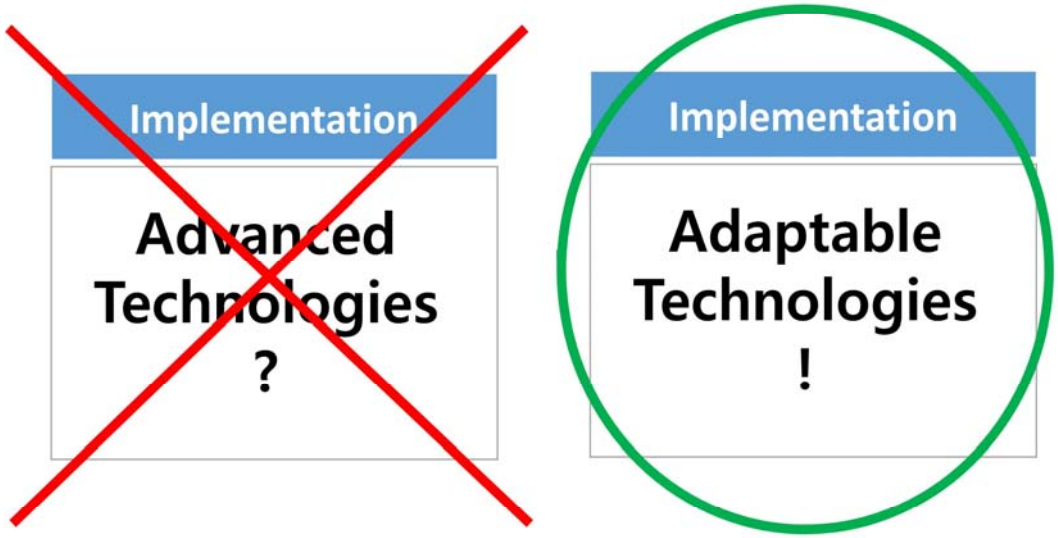

Ⅱ-1. Focus on Key Project Models
Ministry of Agriculture, Food and Rural Affairs
Technical Assistance⇒ Sustainable Environment Built on Public-Private Cooperation
Analysis
Implementation
Stabilization
Successful Cases
· Seed Potatoes in Vietnam
Crops in High Demand
Test Bed
Cooperatives
Purchase by Local Companies


Ⅱ-1. Focus on Key Project Models
Ministry of Agriculture, Food and Rural Affairs
MAFRA's Project Extension with Crops Developed by KOPIA
KOPIA
· Cooperation center for agricultural technology assistance
· Established in 20 partner countries
Analysis
Implementation
Extension
Development of Locally Suitable Crops (KOPIA)
Test Bed (KOPIA)
Demand-Based Crop Selection (MAFRA)

Ⅱ-1. Focus on Key Project Models

Ministry of Agriculture, Food and Rural Affairs

Implementation of Customized ODA with Adaptable Technologies



Ⅱ-1. Intensive Implementation of Targeted Project Type

Ministry of Agriculture, Food and Rural Affairs

Agricultural ICT ODA

ASEAN Food Security Information System (AFSIS) Project

to Establish National Agri-food Information System* and Human Capacity Building

*On-line agricultural statistic information system for agricultural data collection and administrative reporting

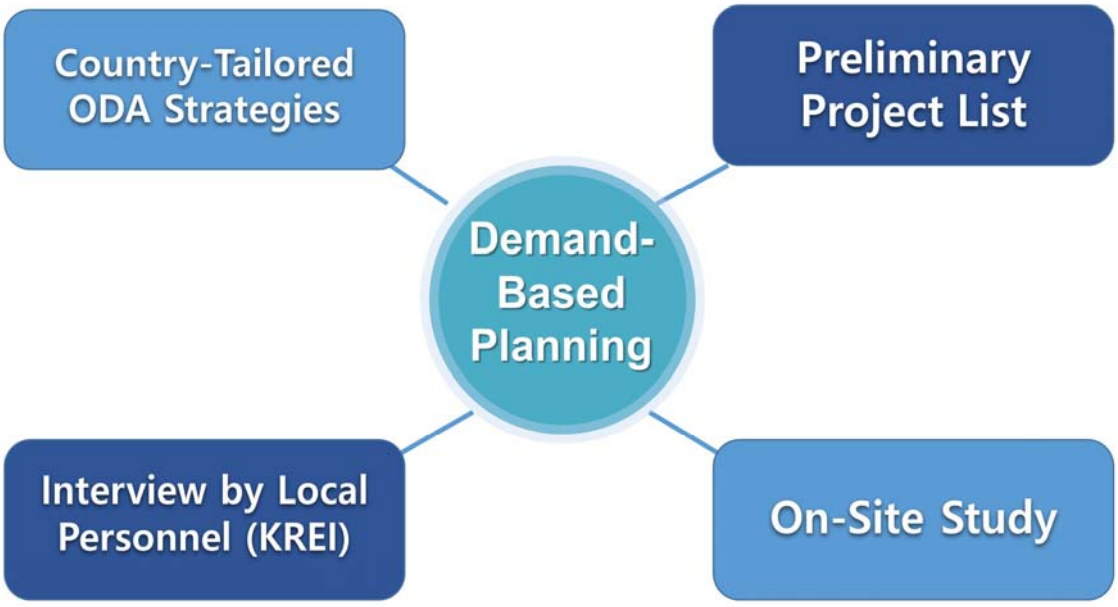
Ministry of Agriculture, Food and Rural Affairs

Ⅱ MAFRA's ODA Strategy and Future Plans

Ⅱ-2. Demand-Based Project Planning

Ⅱ-2. Demand-Based Project Planning

Ministry of Agriculture, Food and Rural Affairs



Ministry of Agriculture, Food and Rural Affairs

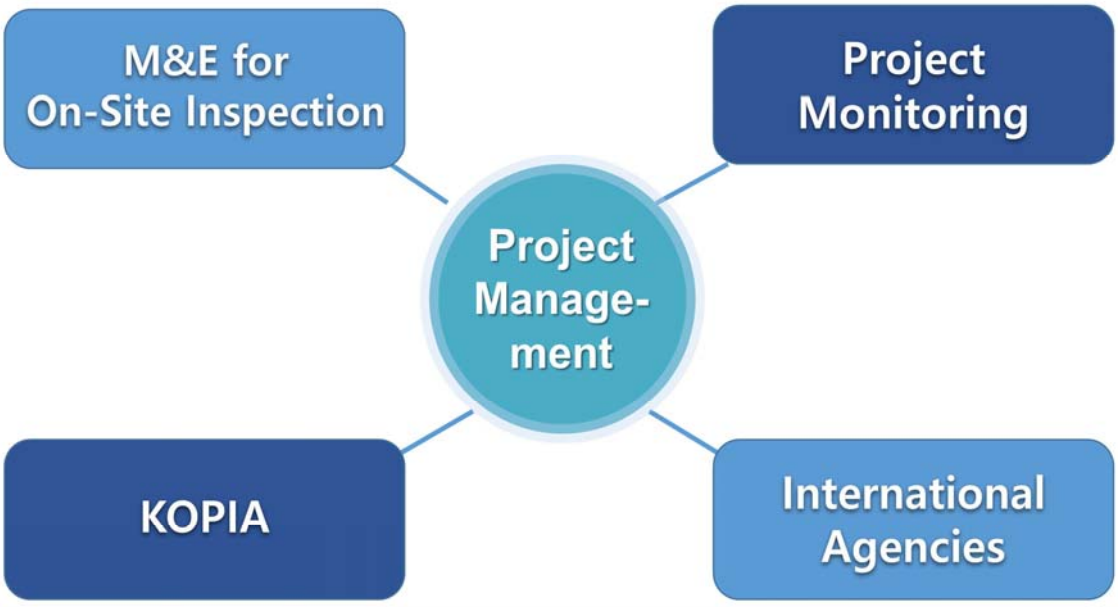
Ⅱ MAFRA's ODA Strategy and Future Plans

Ⅱ-3. Reorganizing Project Management Process

Ministry of Agriculture, Food and Rural Affairs

Ⅱ-3. Reorganizing Project Management Process

Complement to Project Management with External Agencies



Ministry of Agriculture, Food and Rural Affairs

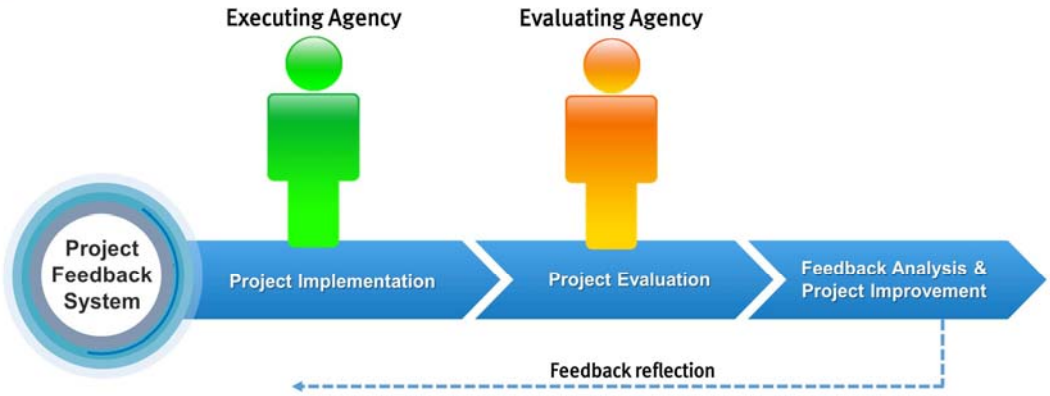
Ⅱ MAFRA's ODA Strategy and Future Plans

Ⅱ-4. Reorganizing Project Evaluation Process

Ⅱ-4. Reorganizing Project Evaluation Process

Ministry of Agriculture, Food and Rural Affairs

Sustainable Project Feedback System



KEY Separation between implementation and evaluation of projects

Ministry of Agriculture, Food and Rural Affairs

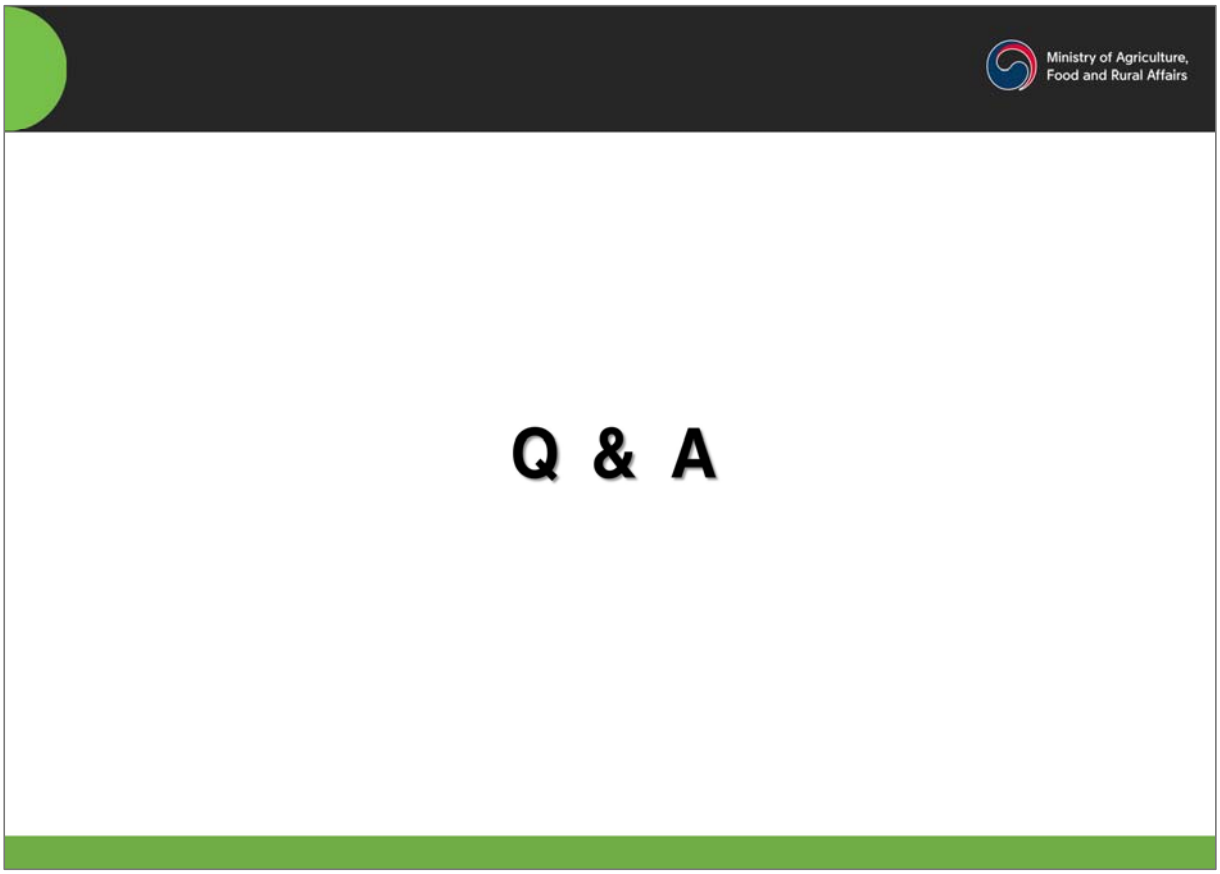
Ⅲ Expected Outcome

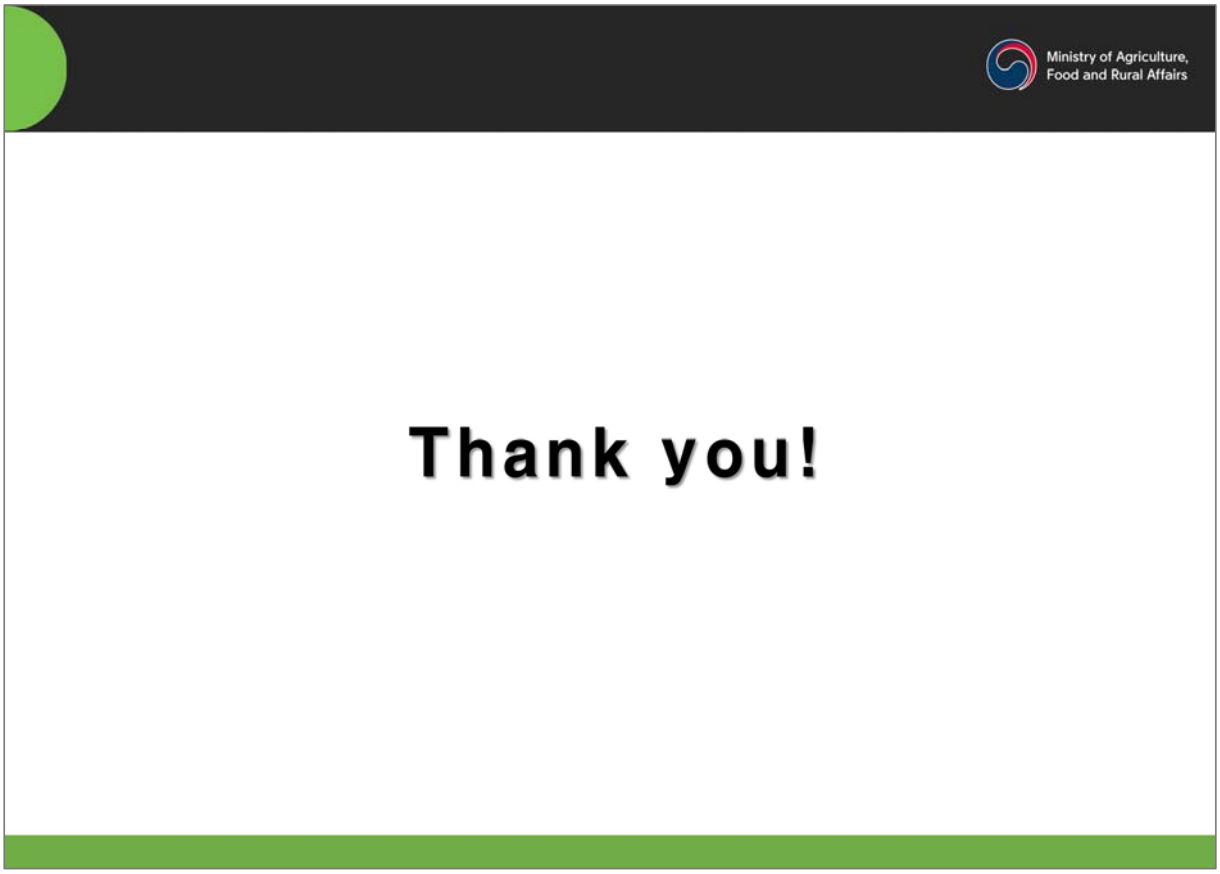
Ministry of Agriculture, Food and Rural Affairs

Ⅲ. Expected Outcome

To Enhance Partner Countries' Agriculture and Rural Life

Improving ODA Project Performance	Exploring Key Successful ODA Cases


Ministry of Agriculture, Food and Rural Affairs
Q & A


Ministry of Agriculture, Food and Rural Affairs
Thank you!

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 1-3

FAO's Strategy for International Agricultural Development, its Projects and Future Plans

David Dawe
(FAO)

KREI

FAO'S STRATEGY FOR INTERNATIONAL AGRICULTURAL DEVELOPMENT, ITS PROJECTS AND FUTURE PLANS

David Dawe

Regional Strategy and Policy Advisor/Senior Economist

FAO Regional Office for Asia and the Pacific

OUR COMMON VISION OF SUSTAINABLE FOOD AND AGRICULTURE

...A WORLD IN WHICH

FOOD IS NUTRITIOUS AND ACCESSIBLE FOR EVERYONE AND...

NATURAL RESOURCES ARE MANAGED IN A WAY THAT MAINTAINS ECOSYSTEM FUNCTIONS TO SUPPORT CURRENT AND FUTURE HUMAN NEEDS.

GLOBAL TRENDS AND CHALLENGES

- Rising food demand – how to generate a 49% increase in agricultural production needed from 2013 to 2050?
- Climate change – how to mitigate greenhouse gas emissions and make agriculture resilient?
- Competition for natural resources – how to sustain the environment for future generations?
- Urbanization and ageing – how to make our rural areas vibrant?

FAO'S STRATEGIC OBJECTIVES

to address the global challenges

HELP eliminate hunger, food insecurity and malnutrition

MAKE agriculture, forestry and fisheries more productive and sustainable

REDUCE rural poverty

ENABLE inclusive and efficient agricultural and food systems

INCREASE the resilience of livelihoods to threats and crises

FAO'S STRATEGIC FRAMEWORK SUPPORTING SDG IMPLEMENTATION

- Help eliminate hunger, food insecurity and malnutrition
- Make agriculture, forestry and fisheries more productive and sustainable
- Reduce rural poverty
- Enable inclusive and efficient agricultural and food systems
- Increase the resilience of livelihoods to threads and crises

HOW IS FAO ADDRESSING THE SDGs?

- Providing an evidence-base and policy advice to build sustainable agriculture and food systems
- Promoting guidelines, standards and good practices
- Supporting countries in designing and implementing strategies and programmes
- Reinforcing capacity and strengthening the institutional environment
- Mobilizing resources and investments
- Advancing data generation at global and country level
- Building partnerships and alliances

EXAMPLES OF NORMATIVE WORK

- International Plant Protection Convention
- Codex Alimentarius
- Statistics (compilation, methodological improvements)
- Analytical publications: State of Food and Agriculture, State of Food Insecurity in the World, State of World Fisheries and Aquaculture, State of the World's Forests
- Voluntary Guidelines on the Responsible Governance of Tenure

FAO Field Programme Examples

FAO Emergency Programme for Typhoon Haiyan in Philippines	In response to Typhoon Haiyan 2013, FAO implemented a coconut-based farming systems programme as part of the FAO USD 39.7 m Strategic Response Plan to address the recovery needs of affected farming families.
FAO Environmental Programme to Improve Sustainable Management of the Bay of Bengal Large Marine Ecosystem (BOBLME) with funding from GEF/Norway/Sweden	The project supports the development of a Strategic Action Programme whose implementation leads to enhanced food security and reduced poverty for coastal communities, linked with a sustained resource base of good ecosystem quality.
FAO Building Resilient Communities after Conflict and Disaster in Myanmar with support from UN Central Emergency Response Fund (CERF)	To help conflict-and flood-affected communities in Muslim and Rakhine Buddhist communities, villagers received small livestock which they could raise and breed for additional income. The project helped boost the livelihood of 3,300 households.
Support of Plant Pest Surveillance and Information Management in Southeast Asian Countries funded by Government of Republic of Korea	This project supports capacity development in the implementation of plant pest surveillance and information management in Southeast Asian countries.

IMPROVING THE WAY WE WORK

- Selectivity
- Partnership
- Efficiency and Quality

Built on a foundation of technical expertise in a wide range of specialties

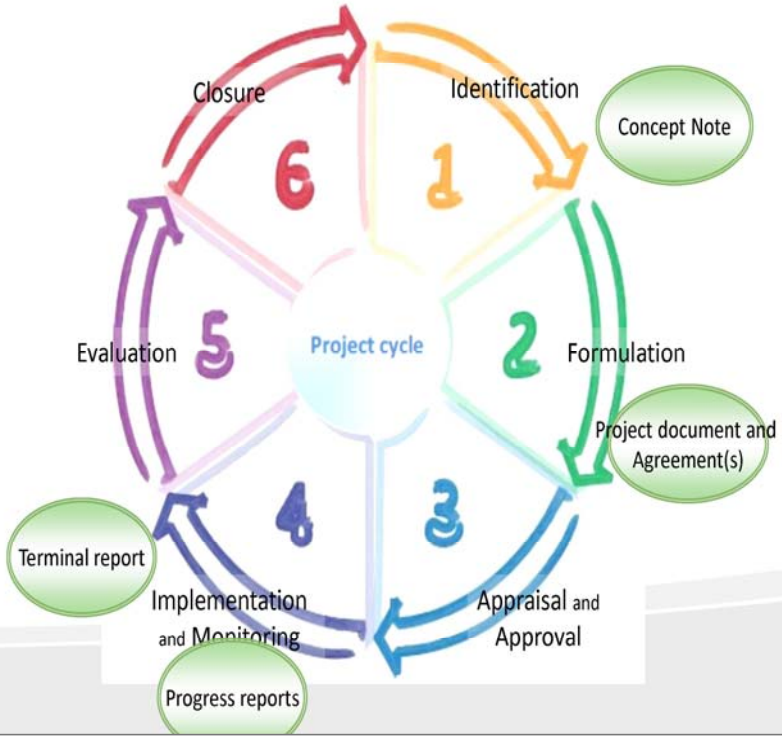
Regional Initiatives and Country Programming Framework as key delivery mechanisms

- selectivity based on outcomes of the Regional Conferences

PARTNERSHIP

- Pool financial resources
- Avoid duplication
- Use additional expertise to address complex problems

FAO Project Cycle – phases to ensure efficiency and quality



Quality Assurance Criteria

Criteria	What it means
Relevance	Consistency with country/regional/global priorities and FAO comparative advantage
Feasibility	Technical, Operational, Financial and Legal soundness, including risk management
Sustainability	Extent to which results are likely to be sustainable after closure

Quality Assurance Process

CLEARANCE	What it means
TECHNICAL	To ensure technical soundness and consistency with country/regional/global priorities.
OPERATIONAL	To ensure operational, Administrative, Financial and Legal soundness
Programme and Project Review Committee (PPRC)	Independent mechanism to ensure: - corporate orientations and policies compliance - institutional quality assurance - benefits from FAO cross-cutting expertise


THANK YOU

Session 2

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Promoting Sustainable International Rural & Agricultural Development Cooperation through Performance Management

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 2-1

World Bank's Performance Management for Agricultural Development Cooperation in Developing Countries

Juergen Voegele
(World Bank)

KREI

M·E·M·O

M·E·M·O

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 2-2

Unresolved in Rural Development

Nicholas Maddock
(UNDP)

KREI

April 2nd 2017

The unresolved of rural development[1]

Nick Maddock[2]

Introduction

Remarkably, since rural development has been at the forefront of so much development support, there are sharply different views on the process of rural development, with divergent policy implications. This note summarises the debate in these areas, noting the areas of disagreement and the policy alternatives that ensue.

Whither smallholder farming? Debate continues on the role of smallholder farming in development and poverty reduction. Characterised as smallholder optimists vs smallholder pessimists, this involves two opposing camps:

- smallholder optimists emphasise investment in agriculture and believe it is important to improve the productivity of crops consumed by the poor and traded locally. They point to the inverse relationship[3] between farm size and yield[4]. They also note that the successes of the green revolution in Asia, and above all in China, were achieved largely by smallholders and argue that only the smallholder works at the scale required to have an impact on poverty. Agriculture, they argue, remains the most effective engine of poverty reduction and that, with a few exceptions (for example, Hong Kong, Singapore and the Gulf States), no country has been able sustain a rapid transition out of poverty without raising productivity in the agricultural sector[5]; and

- smallholder pessimists believe, in contrast, that commercial production of cash crops on larger farms should be encouraged and that this is where the productivity gains will occur (particularly through mechanisation). They show that in labour productivity, either by level or rate of growth, small farming suffers in comparison to large-scale farming[6], noting that this is to be expected since small farms tend to apply much more labour per hectare than large units[7]. This creates employment, but too often this is poorly rewarded. The commercial sector will also strengthen links to the non-farm sector, where the main source of employment for the rural poor is likely to be found. They accept the gradual

[1] The views set out in this paper are solely those of the author and do not represent those of UNDP or any other organisation.
[2] Employments and Livelihood specialist, UNDP Nepal. Nick.maddock@yahoo.com and Nicholas.maddock@undp.org
[3] Daniel Ayalew Ali Klaus Deininger (2014). Is There a Farm-Size Productivity Relationship in African Agriculture? Evidence from Rwanda. Policy Research Working Paper 6770. World Bank Development Research Group Agriculture and Rural Development Team. Sridhar Thapa (2007). The relationship between farm size and productivity: empirical evidence from the Nepalese mid-hills. Department of Ecology and Sustainable Economic Development (DECOS), Università degli Studi della Tuscia, Viterbo (Italy). Contributed paper prepared for presentation at the 106th seminar of the EAAE Pro-poor development in low income countries: Food, agriculture, trade, and environment 25-27 October 2007 – Montpellier, France.
[4] This inverse relationship does not always hold between farm size and farm income. Thus, while the inverse relationship between farm size and output is obtained from heavy use of unpaid family labour (with a strong stake in maximising output), if a shadow wage is applied to family labour in the calculation of net farm income (thereby reflecting the opportunity cost of labour in agriculture), the inverse relationship becomes more muted or disappears. Daniel Ayalew and Ali Klaus Deininger (2014). Is There a Farm-Size Productivity Relationship in African Agriculture? Evidence from Rwanda. Policy Research Working Paper 6770. The World Bank Development Research Group Agriculture and Rural Development Team. February.
[5] C. Peter Timmer (2005). Agriculture and Pro-Poor Growth: An Asian Perspective. Working Paper Number 63, July. Centre for Global Development.
[6] Tasso Adamopoulos and Diego Restuccia (2011). The Size Distribution of Farms and International Productivity Differences. Working Paper 441, University of Toronto Department of Economics. October.
[7] Steve Wiggins. Can the smallholder model deliver poverty reduction and food security for a rapidly growing population in Africa. Expert Meeting on How to feed the World in 2050. Food and Agriculture Organization of the United Nations. Economic and Social Development Department

disappearance of the small farmer and propose working with larger farmers (or with those with the potential to grow), whose success will act as a catalyst to generate wealth and jobs for those whose farms are not viable. They further argue that the small farm vs large farm dichotomy is false and look instead to the gradual transition from smallholding to larger family farms and other commercial farms.

The policy implications of the two perspectives are sharply different. For optimists, the issue is not whether smallholders can succeed, but how to make sure they do. They focus on creating institutions that will support smallholder-led agricultural development, including extension, and input and output marketing services (even where the last two functions are largely in the private sector).

Pessimists take~~n~~ an opposing view. They think that the rural poor will be best assisted by better access to health and education to improve their human capital. They also support mobility to allow uptake of opportunities in growth areas, including those which involve domestic or international migration. Farm restructuring by the market or by state-led interventions to accelerate the transition from smallholder semi-subsistence is at the forefront of their concerns.

These opposing views lead in turn to different policy approaches for each setting[8]:

Role for?	Optimists	Pessimists
Rural human capital	Yes, for productivity impact	Yes, for flexibility of leaving agriculture
Rural infrastructure	Yes, for input and output markets	Mostly wasted
Agricultural research	Yes, to raise yields, farm incomes and lower food costs	Private sector activity for specialised supply chains
Input subsidies	Needed to induce innovation	Wasted
Price guarantees	Needed for incentives and food security	Difficult to implement under WTO rules.

Slowing or encouraging rural-urban migration? The question is whether growing concentrations of humanity increase prosperity or produce congestion and squalor. Driven by this and a range of other fears including insufficient farm labour and, paradoxically, rising rural wage rates, the (ineffective) policy responses so far have been to try to slow urbanization[9] by keeping people in the countryside[10].

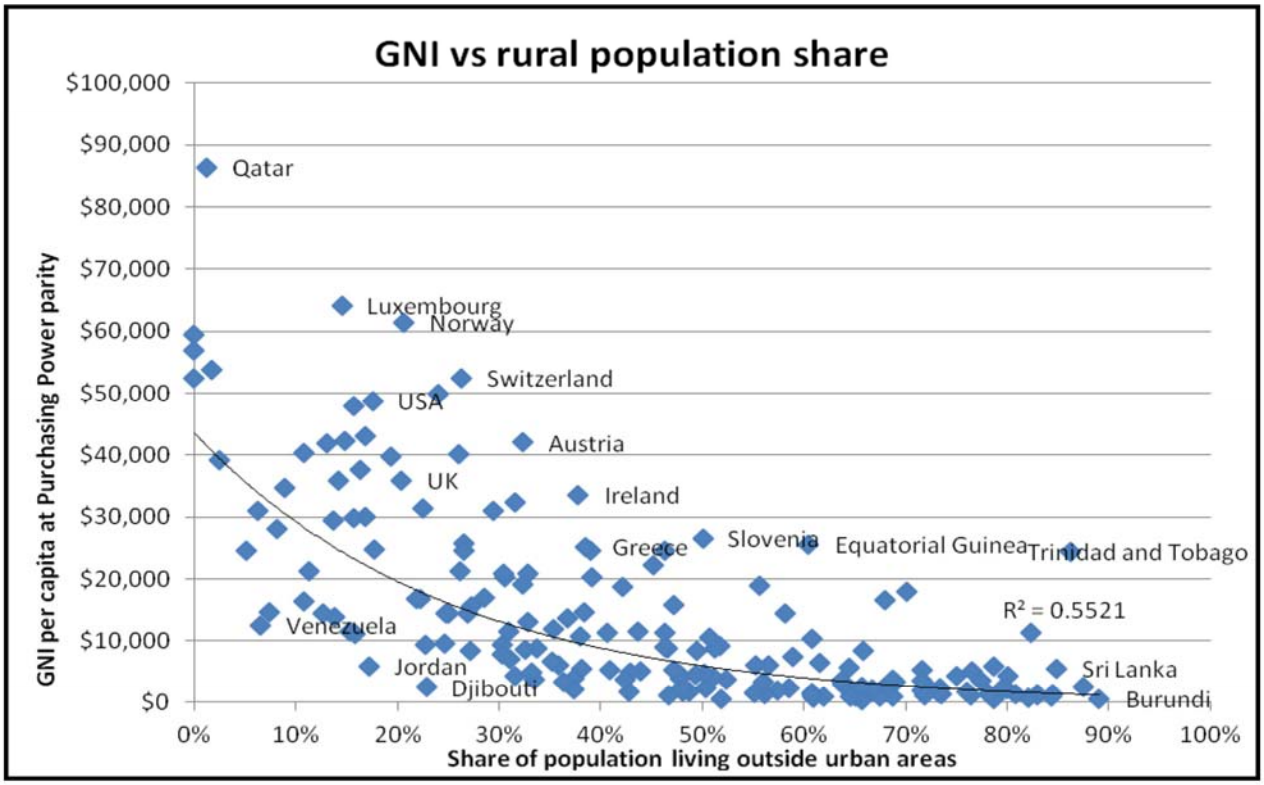
[8] Department for International Development (2004). Agriculture, Growth, and Poverty Reduction. Prepared by the Agriculture and Natural Resources Team of the UK Department for International Development in collaboration with Anne Thomson of Oxford Policy Management, Oxford. October. http://siteresources.worldbank.org/INTAFRSUMESSD/Resources/1729402-1150389437293/Timmmer_Ag_and_PPG_CGDEV_WP63.pdf

[9] See for example http://www.prb.org/pdf12/malawi-population-matters.pdf. This strategy for Malawi includes the provision to 'Establish rural growth centres to serve as socio-economic hubs. Providing central locations for social amenities and market facilities will contribute to economic growth and help mitigate the negative impacts of rural-urban migration'. More than 50 years ago China's government established the hukou system to prevent rural urban migration, requiring people to stay in the area where they were registered. Migrating to the city without being registered as 'urban' implied that the migrants had no access to education, food, housing, employment and a variety of other social services. This has now been partially reformed in response to unskilled labour supply shortage in cities. See http://www.die-erde.org/index.php/die-erde/article/view/130. See also https://soapboxie.com/world-politics/GOVERNMENT-MEASURES-AIMED-AT-CURBING-RURAL-TO-URBAN-MIGRATION; http://ageconsearch.umn.edu/bitstream/31736/1/45010089.pdf

[10] The policy of trying to keep people in the countryside is not restricted to low income countries and, for example, under the EU's Least Favoured Area Scheme, people farming in areas facing natural or other specific constraints may be eligible for an annual income support payment.

April 2nd 2017

In practice, this policy probably trades off growth against the supposed and intangible benefits of keeping people in the countryside and hence trying to keep people in the countryside may in fact be a policy for keeping a country poorer. The losses in terms of growth arise when there is much higher labour productivity in urban areas than in rural areas[11]. Within countries, the accumulated empirical evidence shows that labour migration increases the earnings prospects of people who move and, unsurprisingly therefore, rural-urban migration is positively correlated with family income[12]. But how much of a cost is there to keeping a high rural population? The following chart shows how GNI varies with the proportion of the population living outside urban areas (as designated by the national statistical authorities[13]):



Here the relationship between GNI and rurality is best shown by an exponential curve, and the correlation is very strong: 55 % of the differences in GNI between countries can be explained by the share of their population living in rural areas, and the more rural a country is, the poorer it is[14]. Of the countries that have more than a third of their population living in rural areas, just four have managed to achieve gross national incomes of more than $ 25,000 per head and only one, Ireland, has managed to exceed $ 30,000.

This funding allows farmers and crofters to continue to run viable businesses, avoids the risk of land abandonment, helps maintain the countryside by ensuring continued agricultural land use; and maintains and promotes sustainable farming systems. https://www.ruralpayments.org/publicsite/futures/topics/all-schemes/lfass/less-favoured-area-support-scheme-full-guidance/#46276

[11] In Nepal, for example, labour productivity in agriculture is about 25% of that in other sectors. See http://www.moad.gov.np/downloadfile/ADS%20Final%20Report%20 %20as%20of%2023%20september,%202014_1411534253.pdf

[12] https://www.ncbi.nlm.nih.gov/pubmed/12339122

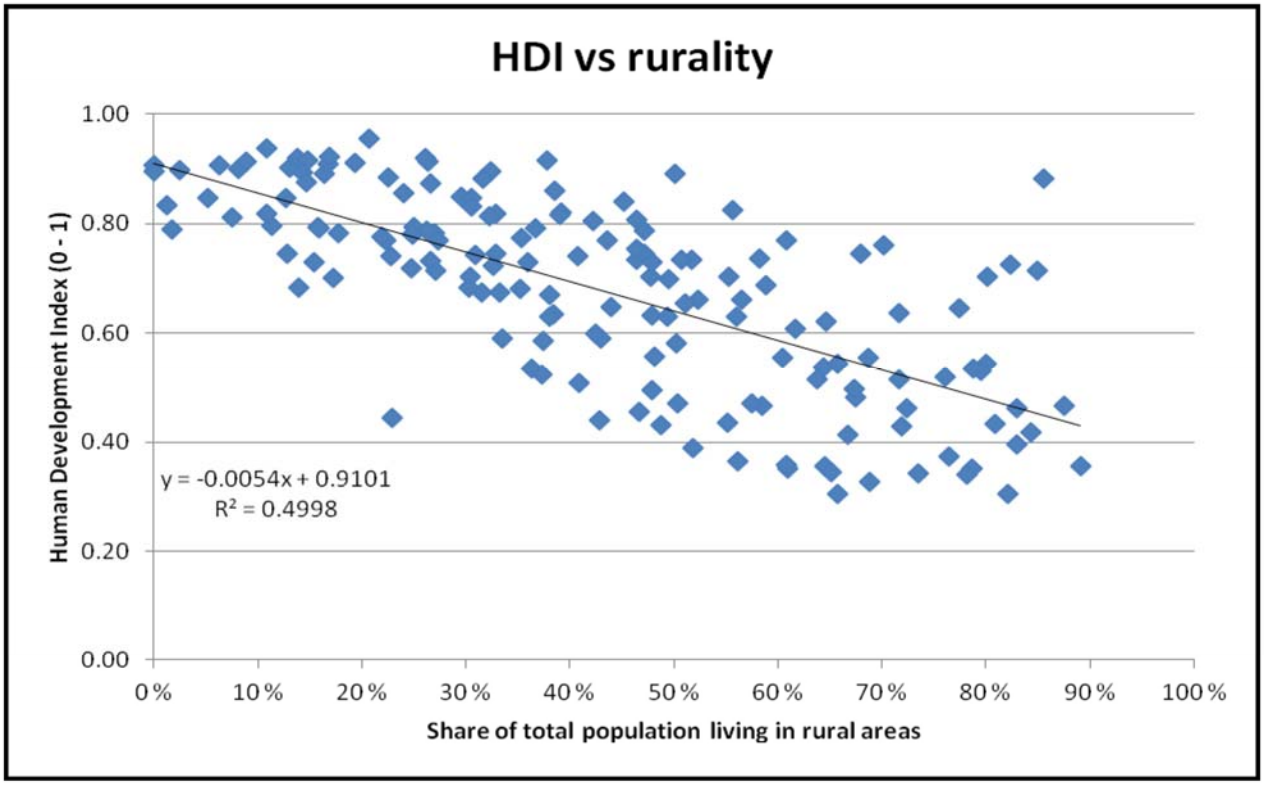
[13] http://data.worldbank.org/indicator/SP.RUR.TOTL.ZS/countries/1W?display=graph

[14] http://issuu.com/steve_goss/docs/why_are_some_countries_richer_i; http://issuu.com/steve_goss/docs/why_are_some_countries_richer_ii

April 2nd 2017

The question is to what extent is this causation, rather than just correlation? Do countries become wealthier because they urbanise, do they urbanise because they are wealthier, or are both urbanisation and wealth driven by some other factors? A possible explanation is that once a country progresses beyond being purely agrarian, most of the economic growth is in towns and cities, to which people gravitate in search of jobs and a better standard of living. Once there, they contribute to the cycle of urban-centred economic growth, and thus urbanisation and economic growth have tended to go together. A correlation of 55 % is very high, and should certainly make rural development planners stop to consider whether trying to keep people in rural areas is a sensible goal.

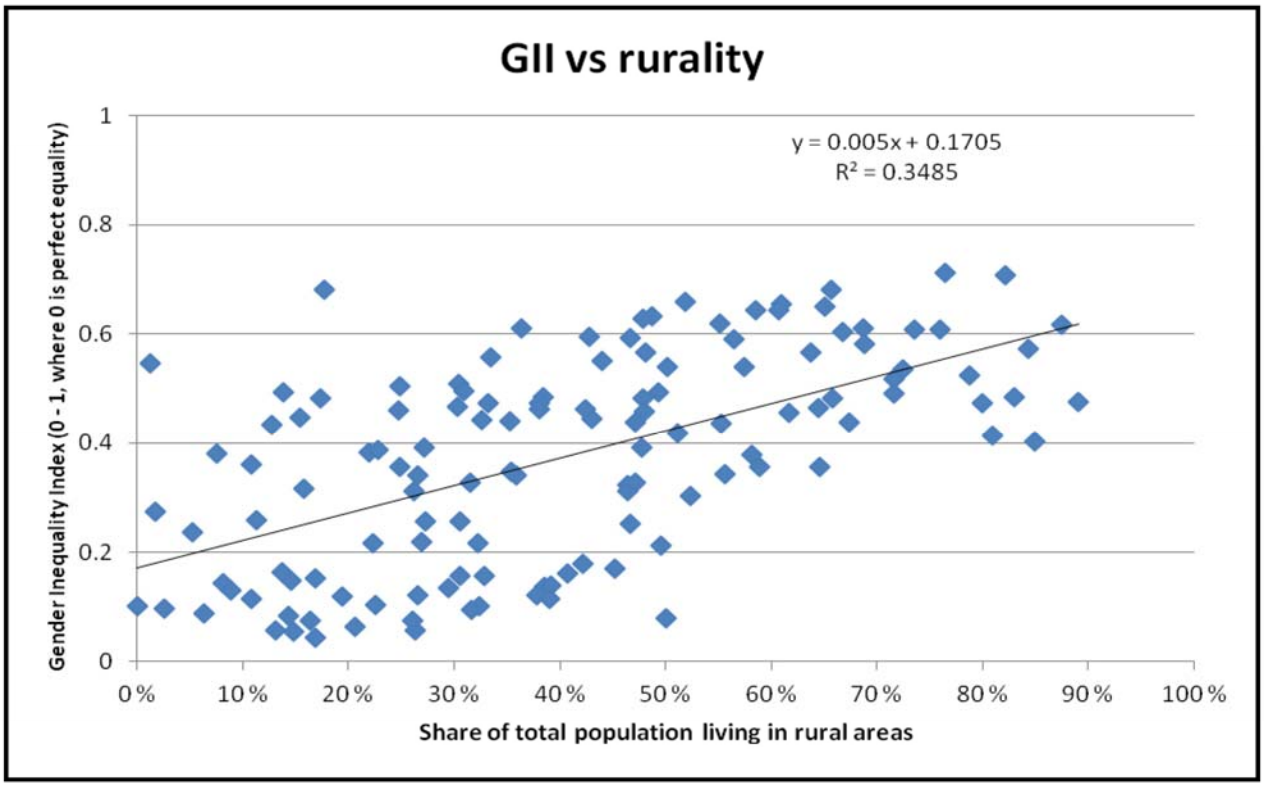
A linked question is how rurality relates to other aspects of human development. The following chart shows that HDI has a 50 % correlation with the share of total population living in rural areas, slightly below the 55% correlation between rurality and income.



Here the variation is greatest amongst the most rural countries – usually low income countries - where HDI varies considerably from country to country.

April 2nd 2017

The Gender Inequality Index also correlates with rurality, with greater inequality in more rural countries:



With a correlation of 35 %, this link is the weakest of all those presented in this part of the paper, but it is still significant.

How does rurality affect human development? We have seen that urbanisation is associated with higher per capita income, which contributes directly to the HDI index and may have indirect effects on gender equality, but the links between rurality and development may go deeper than that. Thus, it costs more to deliver health services and education in rural areas, and rural populations often must make do with more basic services, with limited choice in education and few medical specialists. As a result, countries with a greater share of rural population can be expected to have lower HDI scores relative to their level of income, and it is perhaps a surprise that the correlation between HDI and rurality is not even stronger than the 50 % found here.

Is rural development about people or place? A linked position is that the poorest areas are a natural target of support. The most direct step towards helping their residents would seem to be by rescuing these places, and indeed that is the focus of most economic development programs[15]. Concern comes with the prescription that economic growth must be made more spatially balanced. Lagging areas and provinces distant from domestic and world markets must be sustained through territorial development programmee that bring jobs to the people living there[16].

[15] See for example http://www.rtpi.org.uk/media/1811222/poverty_place_and_inequality.pdf;

[16] http://www.frbsf.org/economic-research/publications/economic-letter/2015/march/enterprise-zone-economic-incentive-tax-subsidy-place-based-policies/

April 2nd 2017

Place-Based Initiatives

Research and experience shows that families do better when they live in strong and supportive communities. In short, place matters in at least some sense. Yet many communities face challenges of high poverty, unemployment, failing schools, and housing instability. These outcomes are influenced by unequal access to opportunity and decades of disinvestment in neighbourhoods of concentrated poverty. An equitable approach to ensuring that all neighbourhoods become the kinds of places that enable all children and families to succeed and thrive requires intentional efforts to build, sustain and operationalize certain types of community capacity.

This capacity is a combination of knowledge, skills, relationships, interactions and organizational resources that enable residents, civic leaders, the public and private sectors and local organizations to transform neighbourhoods into places of opportunity. Based on our experience working with communities, we believe the following types of capacity are essential for successful and sustainable neighbourhood transformation:

- Managing a broadly supported community process designed to improve results for children and families in a particular neighbourhood
- Working with neighbourhood residents as leaders, "owners" and implementers of neighbourhood transformation efforts
- Creating strategic and accountable partnerships that engage multiple sectors and share accountability for results
- Collecting, analysing and using data for learning and accountability
- Designing and implementing strategies based on the best available evidence of what works
- Developing financing approaches that better align and target resources
- Addressing policy and regulatory issues
- Using sophisticated communications strategies to build public and political will
- Deepening organizational and leadership capacity

See http://www.cssp.org/community/neighborhood-investment/place-based-initiatives

This brings an obvious dilemma: should policymakers support lagging regions and accept lower returns than could be achieved in other areas of the country? Put another way, should funding be diverted from regions were the returns are high and should richer regions be taxed to fund lagging regions even if this serves to make the country poorer overall?

An obvious response is that prosperity does not come to every place at once, and to some places it does not come at all. Economic activity is not evenly spread in any country. These arguments against place-based programs upset many observers, since they imply that some areas will inevitably decline and that growth cannot be geographically inclusive. Under this argument, inclusiveness implies working in the most impoverished places. Regional development policies have accordingly tried to encourage – even coerce – enterprises to move away from the leading regions where economic activity has become concentrated, and locate in lagging regions.

A better policy response is to integrate lagging regions with leading regions. Integration is not solely about highways, railroads, and airports, but is also about public goods aimed at building social capital - education, health, and public security. It is also about fluid and functioning labour and land markets, since problems of poor services and poverty can be alleviated if individual recipients move to places with better public services and better jobs. In contrast, where lagging areas are sparsely populated, it does not make a lot of sense to spread expensive infrastructure—beyond a necessary minimum—into these places—or

April 2nd 2017

to give firms incentives to move to them. Encouraging mobility of people is the priority. Hence the counterintuitive notion of optimal unbalanced growth and inclusive development.

This approach takes the view that economic growth will always be unbalanced and that to try to spread out economic activity – too much, too far, or too soon – is to discourage it. But development can still be inclusive, in that even people who start their lives far away from economic opportunity can benefit from the growing concentration of economic activity in a few places. And the way to get both the benefits of uneven growth and inclusive development is through economic integration such that those from lagging regions can get access to opportunities.

In contrast, protagonists of people-based support argue that spatially-targeted interventions are just a small part of what governments can do to help places that are not doing well. The reality is that, besides place-based interventions, governments have more potent instruments for integration. Put another way, if a place lacks good jobs or schools or housing, then conditioning assistance on living or working there effectively both rewards and punishes recipients. The reward, of course, is the aid. The punishment is the requirement that the individual remains in an area that does not serve his or her interests. At its worst, a place-based policy encourages people to stay when they might be better off going, often backed by a moral perspective on the virtues of staying in the countryside (usually from urban-based protagonists).

The contrary view is that since regions of similar type (urban, intermediate and rural) display heterogeneous growth performance, opportunities for growth in each of these three types exists. And while rural regions typically have lower levels of GDP per capita than urban ones, they are about as likely to experience above-average rates of growth as below-average. The benefits of concentration are also neither infinite nor linear.

The primary explanation is that, in a catching-up country, a few regions typically drive growth, and capital and skilled workers are increasingly drawn to them. Rapidly rising productivity causes growth to accelerate still further in these regions, leading to increasing regional disparities. At later stages, higher factor costs and/or agglomeration diseconomies emerge in the leading regions, prompting investment capital to shift to places where the potential returns to capital deepening are higher (i.e. those with lower capital per worker). Overall, the relationship between concentration and growth varies with the level of development, but is stronger in the early stages.

Why the enthusiasm for cooperatives when they offer so little to small farmers? Agricultural cooperation[17] is based on the principle that participating farmers will have higher farm incomes than non-participating farmers. As such they are an accompaniment to smallholder optimism by making it possible for smallholders to increase gross margins and, in turn, farm incomes. There may be other benefits but, unless farmers expect to be and are better off because of joining a cooperative or involvement in contract farming, they will not join or stay members. While cooperatives are sometimes conceived as agents of social change, they are at core like other types of enterprise in seeking to improve returns to shareholders.

But do cooperatives of small farmers in the poorer countries offer gross margin and farm income gains for their members? Findings suggest that cooperation commonly offers gains to farmers in terms of gross margins and farm income. Thus, farmers who cooperate often do better per hectare or per animal (in the case of livestock), as well as overall (in terms of net farm income). The problem seems to be that the absolute gain in gross margins and net farm income is typically rather small and that, for small farms, household incomes do not change much. In other words, the problems of scale in agriculture remain, in

[17] The term 'cooperative' is used interchangeably with 'association'.

April 2nd 2017

that small farmers still have low agricultural incomes even after cooperation. In this context, farmers may wonder whether cooperation is worth the effort.

The attraction of cooperation may therefore depend more on the absolute scale of change and whether it makes an appreciable difference to household income. While findings are contradictory in terms of relationship between cooperation and farm size, cooperation may thus be more attractive to larger farms since the absolute gain will be greater. Unfortunately, it also means that small farmers, the main intended beneficiaries of cooperation, are likely achieve rather small absolute gains.

In fact, cooperation a sometimes excludes the smallest farmers. Such farmers are sometimes deliberately excluded to reduce transaction costs and sometimes exclude themselves, possibly because the costs of participation exceed the gains. When combined with the evidence on the importance of the scale of gains, this suggests that cooperation does not reliably offer a way of correcting for problems of scale in smallholder farming.

If true, this conclusion is obviously troubling. Cooperatives have been promoted as a way of correcting for scale in low income countries, but it seems clear (at least from the evidence obtained) that they are not a reliable tool for achieving this goal. As noted, they do often provide income gains: the problem is that gains are often not very big and often not big enough to make much of a difference.

Table 1. Summary of the findings of studies on the impact of agricultural cooperation on farm income

Country	Improvement in farm income	Source of gains	Remarks
Mozambique	Yes, estimated at 50% increase over a multiyear period. Mainly derived from livestock production, with limited gains in crop production	Not specified.	
Ethiopia	Yes.	Higher output prices and improved yield, as a result of extension and use improved seed.	
Ethiopia	Yes, Cooperative members receive between 7.2 and 8.9 percent higher prices for their cereal products than did their nonmember counterparts.	Higher output prices. Cooperative members receive between 7.2 and 8.9 percent higher prices for cereals than nonmembers.	Smaller farmers self-exclude from participating in cooperatives, as their returns from membership are less than the costs.
Ethiopia	Not investigated.		Poorer farmers tend not to participate in cooperatives. When they do participate, they are often excluded from decision-making.
Ethiopia	Not investigated.	Increased technical efficiency through extension and access to inputs.	
Ethiopia		Members outperform the otherwise similar individual producers in terms of market access, herd size and productivity.	Cooperatives grew horizontally, by incorporating new farmers or additional cows but productivity and market access of cooperative farmers did not intensify over time
China	Yes	Raising the level of agricultural specialization	The factors which affect whether farmers participate in cooperatives ainclude policies affecting cooperatives.
China	70% difference between treatment and non-treatment groups.	Not specified.	Gains only for small farms. Smallest farmers were excluded from the cooperative (to reduce transaction costs).
Kenya	Positive income effects, but price advantages of collective marketing small.	Specialization effects: members expanded their banana area more than non-members, such that commercialization increased.	Cooperatives include poor farmers as members, but ownership of land and other agricultural assets as well as access to credit increase the probability of joining a group.
Rwanda	Membership increased farm income from 40 to 46% and reduced the likelihood of being poor by 10 to 14 percentage points.		While households with the smallest landholdings have the highest propensity to join a cooperative, the impact of cooperative membership on their incomes is very small in absolute terms and not enough to influence poverty reduction.

April 2nd 2017

Conclusion

These contested views of rural development underline the sharply divergent vision of how the rural economy will develop and hence on rural development policy. Combining the four elements above, one position is that smallholders are the rightful and appropriate focus of actions on rural development, with cooperatives offering the chance to correct for problems of scale. Realising their potential requires place-based actions and institutions, most notably extension, to raise productivity. Helping increase smallholders' incomes will, it is argued, have the added benefit of slowing rural-urban migration and so lessening the problems of urban marginalisation.

This position opposes agricultural land taxes set at meaningful levels as an undue burden on the smallholder and, for reasons of gender equality, is often in favour of forced heirship in land inheritance for reasons of equity, despite the danger that landholdings may be further divided. Market intermediaries are viewed as capturing an undue share of the marketing margin which should, it is contended, in greater proportion rightfully accrue to the smallholder (even if the intermediaries' loss and the farmers' gains has a neutral effect on aggregate wealth). Subsidies are justified as part of process of combatting smallholders' market disadvantage and, to a lesser extent, inducing change and innovation, which the smallholder could not afford without subsidy.

The opposing position that agriculture is unlikely to contribute significantly to rural income growth while smallholder production, much of it semi-subsistence, dominates. Labour productivity will remain low and, with small farm size continuing to hold back mechanisation, cannot be raised significantly. Some farms will be viable because labour is cheap and where labour can be substituted for capital. But the best option for agricultural development is gradual increase in farm size as the young leave rural areas, inheriting, then selling or renting their parents' farmland.

This position notes that getting jobs in the urban non-farm economy requires skills and hence training will allow those who want to leave agriculture to move into the urban economy while avoiding marginalisation. The growth in urban areas also requires better planning such that services and housing are available, thereby further avoiding marginalisation. The focus of support will be on the emerging urban economy such that those leaving agriculture have better chances of employment.

The two positions obviously suggest quite different policies. The first position dominates in many low income countries, with provision of extension central to agricultural policy. Deficiencies in extension provision are highlighted and, with public extension services reaching only some farmers, there are moves to improve funding for extension and increase the number of extension workers. There is nonetheless acceptance that extension will also be offered by private providers, including input suppliers. Input subsidies and other financial assistance in agricultural value chains is common (including provision of, variously, greenhouses and agricultural equipment), formation of cooperatives gets widespread support (often from donors and NGOs) and measures aimed at rebalancing farmers' bargaining position in markets, such as collections centres, are employed[18].

[18] One common objection to increased rural-urban migration is the infeasibility of migration in the context of high unemployment. This seems intuitive, but is refuted by the so-called Todaro paradox. This assumes that migration is an economic phenomenon and that the decision to migrate to towns has an economic basis even in the context of high unemployment. Migrants are well aware of with the employment opportunities in rural and urban labour markets and, accordingly, choose opportunities where their expected gains could be maximized. Thus, the migration proceeds in response to urban-rural differences in expected rather than actual earnings. The expected gains are measured by the difference in real incomes between rural and urban work, and the probability of a new migrant obtaining an urban job. http://economicsconcepts.com/michael_p_todaro's_model_of_rural_urban_migration.htm. It may also be that the decision is based on an implicit

April 2nd 2017

The second position focuses on urban development and sees agriculture as no more deserving of direct support than any other sector. Vocational training is provided as a way for the rural underemployed and unemployed to get better jobs, usually in towns but also sometimes in migratory labour markets. Labour market functioning is supported by labour market needs analysis so that training is directed to priorities. Both measures seek to optimise the effects of what is seen as the natural process of labour outflow from agriculture. Urban planning is important[19], with marginalisation viewed as avoidable with adequate planning and funding[20]. Infrastructure is also seen as important as a way of increasing within-country connectivity. Enterprise development has a largely urban focus, with support from business development services and, sometimes, enterprise zones. Functioning land markets are important, although those taking this position are still often reluctant to extend the right-to-buy beyond citizens of the country concerned.

Choice of position and policy will depend on the weighting given to various factors. The negative human development effects of rapid urbanisation are well-founded and very visible. This is particularly marked in Asian cities, where slum development has been acute, with accordingly poor human development outcomes. Other more anecdotal reasons are sometimes given weight, including the view that some countries are 'naturally' rural and, for reasons of tradition, social cohesion and, what is considered 'normal', should remain so. The contention that countries will defy the typical growth path is sometimes also advanced, alongside an adherence to 'balanced' development in which the contribution of the rural sector GDP can be induced to remain stable or indeed to increase. Rurality is also often seen as providing resilience in that the family can always resort to the farm in times of hardship, with precautionary landholding viewed sympathetically, even where land is left fallow, such that there is an ability to withstand shocks.

In contrast, the policy of seeking to accelerate rural-urban migration and urbanization is rarely found. This is paradoxical given the apparent benefits of urbanization. Indeed, the choice, on the one hand, between faster rural-urban migration, more rapid urbanization and higher growth rates and, on the other, slower rural-urban migration, reduced urbanization and lower growth rates is rarely examined. This may because the correlation between rurality and growth is not well known. It may also be because the reasons set out above are given primacy over growth (though rarely, of course, with the explanation that this is likely to be growth-slowing).

Emphasis on place-based interventions remains equally dominant, with development agencies inclined to aim actions at the poorest and most disadvantaged regions of a country. It is almost unknown for support to be given which aims to enable people to leave an area, however impoverished or disadvantaged. Place-based interventions are the default option and, aside from improved infrastructure, strengthening connectivity to allow labour mobility from lagging regions to leading regions or the towns in rarely if ever proposed. The dominant role of poverty in development assistance means that such actions could probably not even be proposed since some of the benefits would accrue to richer areas.

The choice of position could vary over time and it might sense to provide some marked support to rural areas at an earlier stage of development when lifting all incomes from deep poverty is not only desirable, but also quite feasible. Then, realizing that urbanization is inevitable and unstoppable, manage it at a later stage, allowing and facilitating large scale migration to cities, while addressing its main negative aspects

net present value of future earnings and/or a valuation of the non-wage human development aspects of urban life (including better access to services, utilities and infrastructure).

[19] www.unhabitat.org.jo/en/inp/Upload/1051050_Part%20two%205.pdf

[20] The obvious examples are China's five megacities (Shanghai, Beijing, Shenzhen, Guangzhou and Dongguan) which have mostly avoided the social effects of urbanisation through construction of housing units, public transportation, land use and zoning flexibility, and providing incentives to private sector development. In other words, a combination of improved service delivery and economic development mitigates the human development effects of domestic migration and urban population growth such that the downside of urbanisation is controlled.

April 2nd 2017

to the extent feasible. This management could include facilitating greater value addition in rural areas, to allow for the equilibrium to be reached at higher income levels.

The performance of cooperatives in the poorer countries typically provokes a somewhat ambiguous response. Much development assistance and government support has been given to agricultural cooperatives but frequent reference to 'encouraging', 'incentivising' or revitalizing cooperatives suggests recognition that all is not well. The problem may also be that to recognise the underperformance of cooperatives is also to challenge the viability of smallholder agriculture since cooperatives are seen to correct the potentially fatal problems of scale inherent to smallholder production.

The adherence to cooperation may also reflect its dominance in high income countries where a large share of marketed output is through cooperatives. This though confuses the structure of agricultural cooperation in the two contexts. Thus, agricultural cooperation in the richer countries often involves professionally-managed companies, with professional staffing made possible by higher revenues. In contrast, agricultural cooperatives in the poorer countries are rarely professionally-managed, relying instead on farmer members taking time off from farming to manage the cooperative. It is unsurprising that, in this context, performance is radically different. This in turn may argue for minimum membership and turnover of cooperatives such that they can fund professional managers.

The 'unresolved' of rural development

Nick Maddock

Smallholder farming vs commercial production (optimists vs pessimists)

Optimists

- Agriculture the most effective engine of poverty reduction
- Transition out of poverty dependent on raising agricultural productivity

Pessimists

- Productivity gains mainly from the commercial production of cash crops on larger farms
- Labour productivity very low in smallholder agriculture
- Commercial agriculture will strengthen links to the non-farm sector
- Gradual disappearance of the small farmer the normal growth path

Policy implications

Optimists:

agricultural research, extension, subsidies and sometimes floor prices

rebalance marketing margins accruing to intermediaries

accept forced heirship for reasons of equity even if it reduces farm size

Pessimists:

support to human capital (education and health) to allow mobility into higher productivity sectors

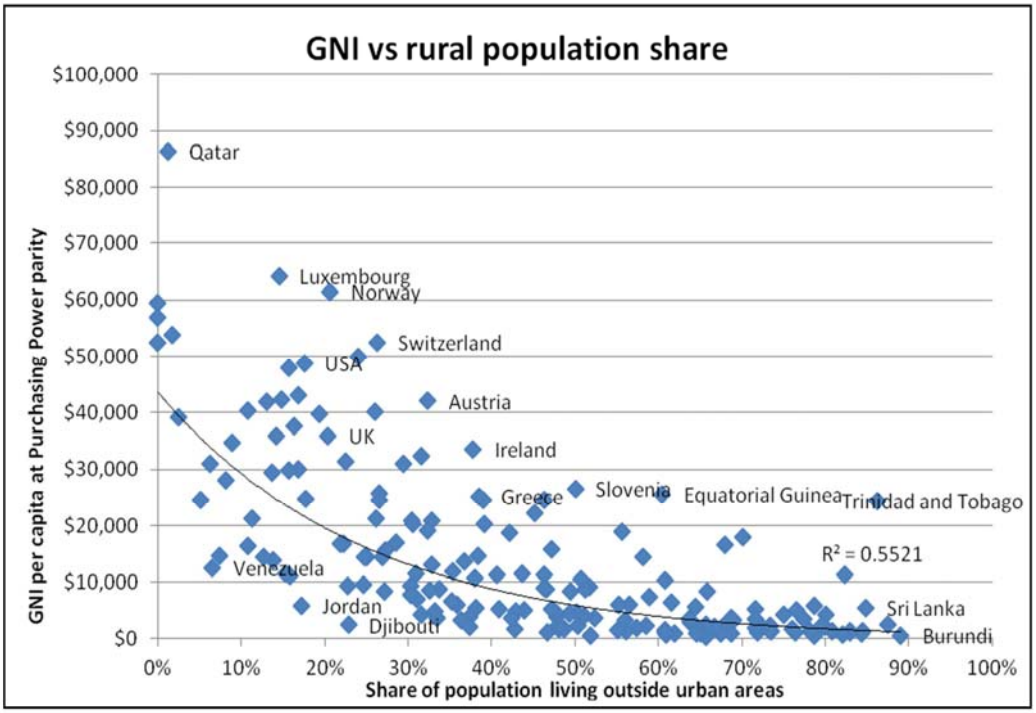
free up agricultural land market and use land taxes to discourage precautionary landholding

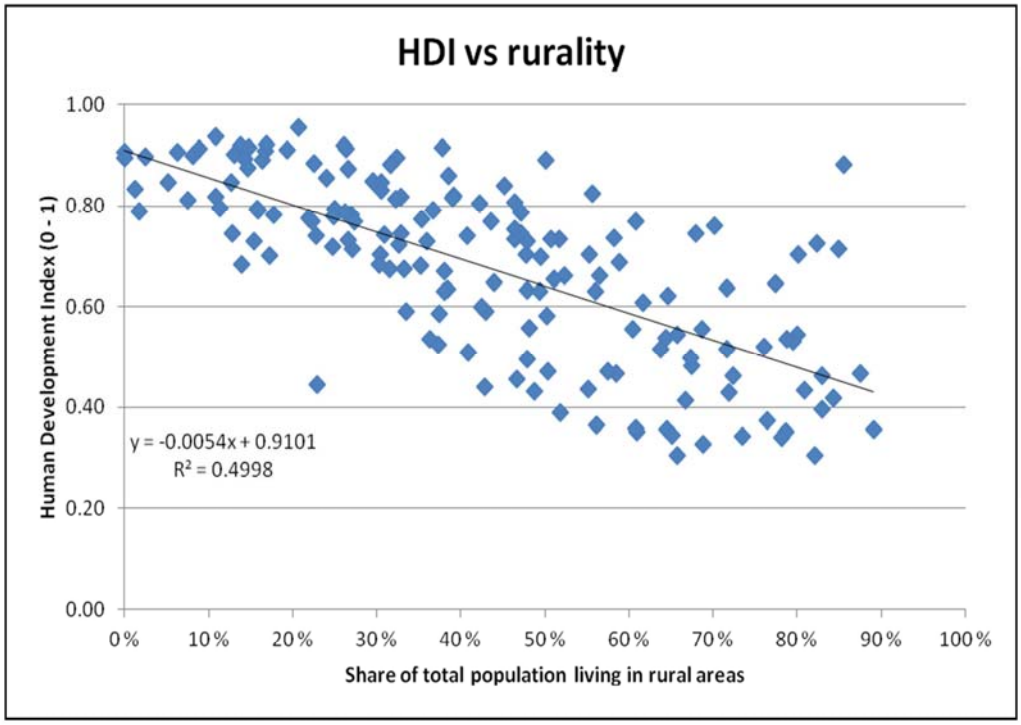
Slowing or encouraging rural-urban migration?

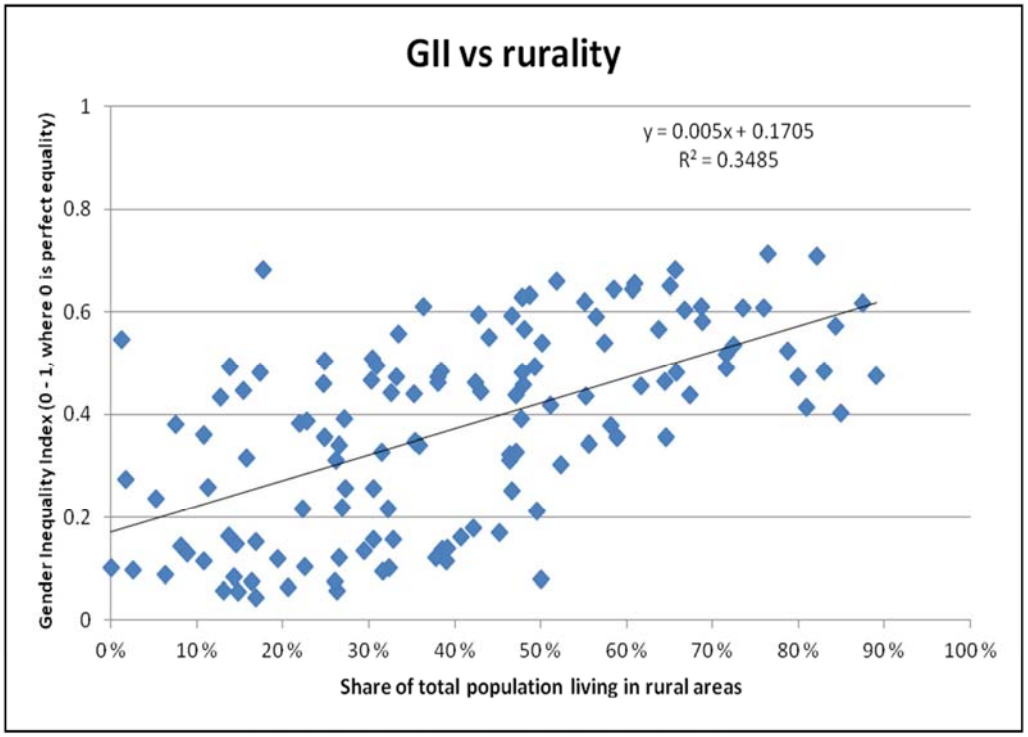
Growing concentrations of populations in urban areas increase prosperity or produce congestion and squalor?

Tradeoff between growth and the supposed and intangible benefits of keeping people in the countryside.

Some countries explicitly oppose rural-urban migration in their development policies


GNI vs rural population share
GNI per capita at Purchasing Power parity
$100,000
$90,000
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
Qatar
Luxembourg
Norway
Switzerland
USA
Austria
UK
Ireland
Greece
Slovenia
Equatorial Guinea
Trinidad and Tobago
Venezuela
Jordan
Djibouti
Sri Lanka
Burundi
R² = 0.5521
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Share of population living outside urban areas


HDI vs rurality
Human Development Index (0 - 1)
1.00
0.80
0.60
0.40
0.20
0.00
y = -0.0054x + 0.9101
R² = 0.4998
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Share of total population living in rural areas



Policy implications

Measures to keep people in the countryside normally fail: incentives in terms of wage rates and service.

Urban planning for absorption of rural-urban migrants

Is rural development about people or place?

Place based

Poorest places a natural target of support.

Lagging areas must be sustained through territorial development programmes.

Policymakers commit public funds to support lagging regions despite much better returns elsewhere.

Enterprises encouraged to locate in disadvantaged regions: through public subsidy if necessary.

Jobs should be brought to the people, rather than people moving to get jobs.

People-based rural development

Prosperity does not come to all places at once

Integrate lagging regions with leading regions.

Development still inclusive if people in a lagging region can benefit from concentrations of growth elsewhere.

Assistance should not be conditioned on living in an area.

If lagging regions are sparsely population, inefficient to construct expensive infrastructure.

Concentrations of growth will change over time.

Do cooperatives of small farmers offer benefits?

Paucity of rigorous studies of cooperatives and some countries more rigorously studied than others. May bias the results.

Farm income and gross margin gains in many cases (though not always). But scale of change is small in absolute terms

Some evidence that the smallest farmers are excluded or exclude themselves,

Contract farming offers more reliable increase in gross margin and farm income. Not known whether the scale in absolute terms is greater than for cooperation.

Rural development policy positions

'Smallholder optimist, placed-based, interventionist'

Smallholders are the rightful focus of rural development with problems of scale corrected by cooperatives.

Place-based actions, particularly through extension, will the key to raising productivity and reducing poverty.

Helping smallholders get richer will help slow rural-urban migration and lessen urban marginalization

Subsidies (to agriculture and enterprise) needed to compensate for rural disadvantage .

‘Smallholder pessimist, people-based, public goods’

Agriculture unlikely to contribute to rural growth while smallholder production dominates.

Labour productivity will remain low as mechanization is constrained.

Gradual increase in farm size as the young leave rural areas.

Agriculture no more deserving of direct support than any other sector.

Getting jobs in the non-farm economy will offer higher salaries, but needs skills

Labour market functioning essential

Dealing with urban growth requires better planning for services and housing.

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 2-3

ADB's Operation in Agriculture and Natural Resources

Mahfuz Ahmed
(Asian Development Bank)

KREI

ADB's Operations in Agriculture and Natural Resources

Current Priorities and Future Directions

Mahfuz Ahmed
Advisor, Rural Development and Food Security
Asian Development Bank
4 April 2017

ADB

Outline

1. Introduction
2. Operations Priorities to 2020
3. Innovation and Building Pipelines
4. Future Directions

2

ADB

1. Introduction

Post-2015 Development Directions

- **Sustainable Development Goals**: Goal 2–End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. (Goals 3, 6, 7, 9, 13, 14, 15)
- **Addis Ababa Action Agenda**: Critical role of MDBs in mobilizing investments for revitalized and sustainable agriculture in achieving food security and nutrition.
- **2015 United Nations Climate Change Conference (Conference of Parties 21)**: Critical role of agriculture in addressing climate change.

4

ADB

2. Operations Priorities to 2020

OPANR 2015–2020 Priorities

- **Strategic Objectives**:
  Safe, nutritious and affordable food for all
- **Priorities:**
  1. Increasing the productivity and reducing pre- and post-harvest losses of food
  2. Improving market connectivity and value chain linkage
  3. Enhancing food safety, quality and nutrition
  4. Enhancing management and climate resilience of natural resources
- **Corporate Targets**
  - ➢ $2 billion in agriculture and food security investments by 2020
  - ➢ $1 billion in climate finance

7

ADB

ANR Investment Areas to 2020

Core Areas	Investment Areas	Links with Other Sectors/Themes	Links to Global Agenda
Productivity	• Sustainable infrastructure • Commercialization and private service delivery • Climate-smart agriculture • Policy reforms	• Water • Energy • Finance • Social • Gender • Climate change	• SDG (2, 5, 6, 7, 12, 13) • COP 21
Market	• Logistics and market infrastructure • Agribusiness and value chains • ICT and rural-urban-market linkages • Policy reforms	• Public-private partnership • Transport • Finance • Urban • Social development	• SDG (2, 9, 11, 17) • Addis Ababa
Food Safety, Quality, and Nutrition	• Infrastructure for safety and standards • Policy, regulation, and capacity • Outreach and education • Policy reforms	• Health • Social • Gender • Education	• SDG (2, 3, 4, 5)
Natural Resources	• Climate resilience • Land, soil, forest, river basin management	• Water • Social • Gender • Climate change • Environment	• SDG (2, 5, 6, 13, 14, 15) • COP 21


ANR Operations at a Glance:
Prospects for Expansion
2009–2011
Sovereign: $1.6 billion
2012–2014
$3.2 billion
Sovereign: $2.5 billion
Non-sovereign: $726 million
2015–2017
$6.0 billion
Sovereign: $5.7 billion
Non-sovereign: $300 million
2018–2020
$7.0 billion
Sovereign: $6.5 billion
Non-sovereign: $500 million
9
ADB


3. Advancing Innovation and Building Pipelines
10
ADB

Learning from Ongoing Innovation

- Crop diversification and enhanced smallholder market linkages
- Small and medium enterprise agribusinesses and value chain financing
- Building climate resilience through technology, infrastructure and resource use efficiency

11

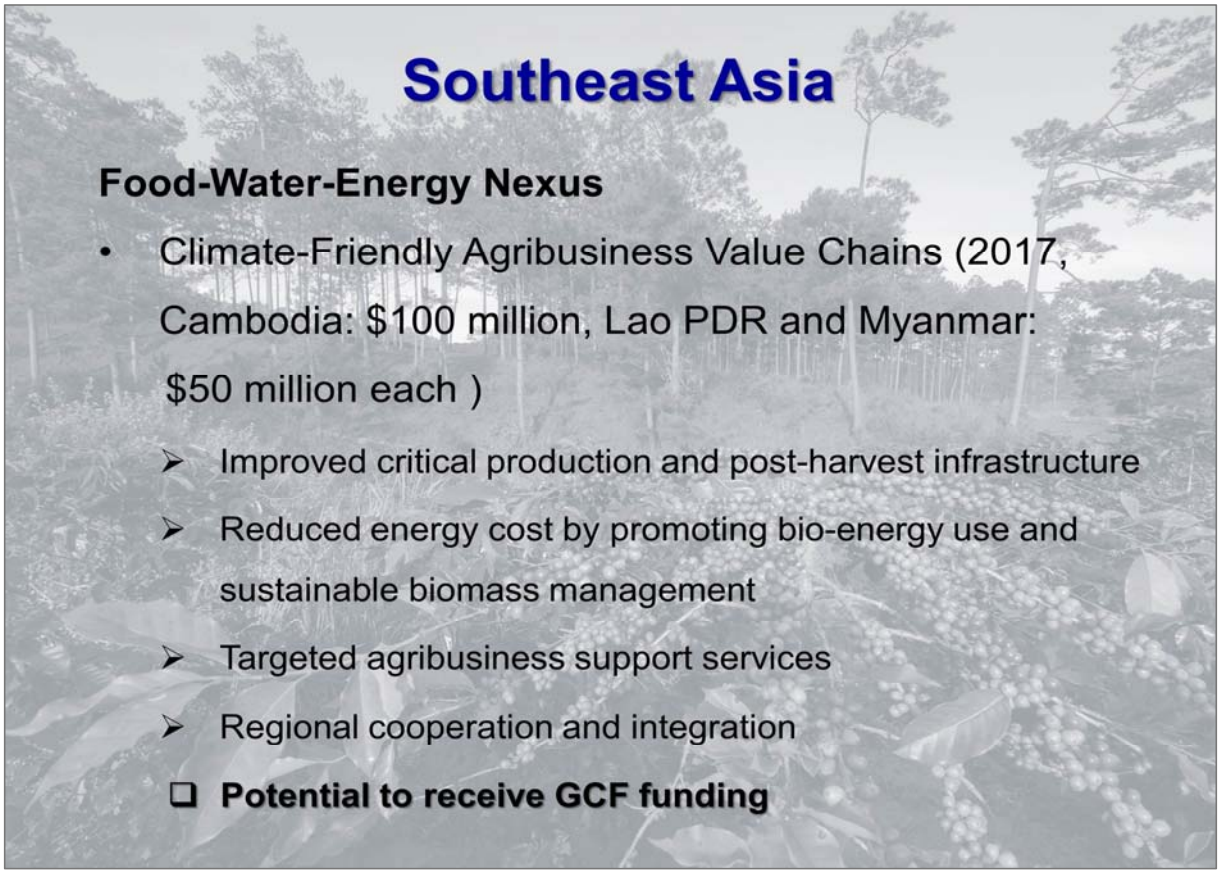
ADB

Central and West Asia

Water Productivity and Structural Transformation

- Pakistan: Khyber Pakhtunkhwa Water Resources (2016 loan of $100 million)
  - Increased land and water productivity
  - Improved farm and non-farm incomes
  - Climate-smart agriculture
  - Employment generation


South Asia
Comprehensive Value Chain Support
• Nepal: Agriculture Sector Development Program (2016 grant of $50 million)
➢ Upgrade of logistics and services
➢ Policy reforms to increase competitiveness and promote commercial agriculture
• Bangladesh: Crop Diversification and Value Chain Infrastructure Development (2018 loan of $200 million)
➢ Improved capacity of farmers and enterprises to produce and market safe food and high value products
➢ Access to micro finance by farmers and agro-enterprises


Southeast Asia
Food-Water-Energy Nexus
• Climate-Friendly Agribusiness Value Chains (2017, Cambodia: $100 million, Lao PDR and Myanmar: $50 million each)
➢ Improved critical production and post-harvest infrastructure
➢ Reduced energy cost by promoting bio-energy use and sustainable biomass management
➢ Targeted agribusiness support services
➢ Regional cooperation and integration
❑ Potential to receive GCF funding

East Asia

Food Safety: Henan Sustainable Livestock Farming and Product Safety Demonstration (2015 loan of $69 million)

- Upgraded livestock product safety monitoring and inspection facilities, establishment of environmentally sustainable livestock production facilities, and strengthened capacity

Sustainable Water Use: Shandong Groundwater Protection Project (2016 loan of $150 million)

- Groundwater allocation to optimize surface and groundwater usage; increased retention of storm water; and wetlands management for groundwater recharge

Sustainable Land Use: Fujian Farmland Sustainable Utilization and Demonstration (2016 loan of $100 million)

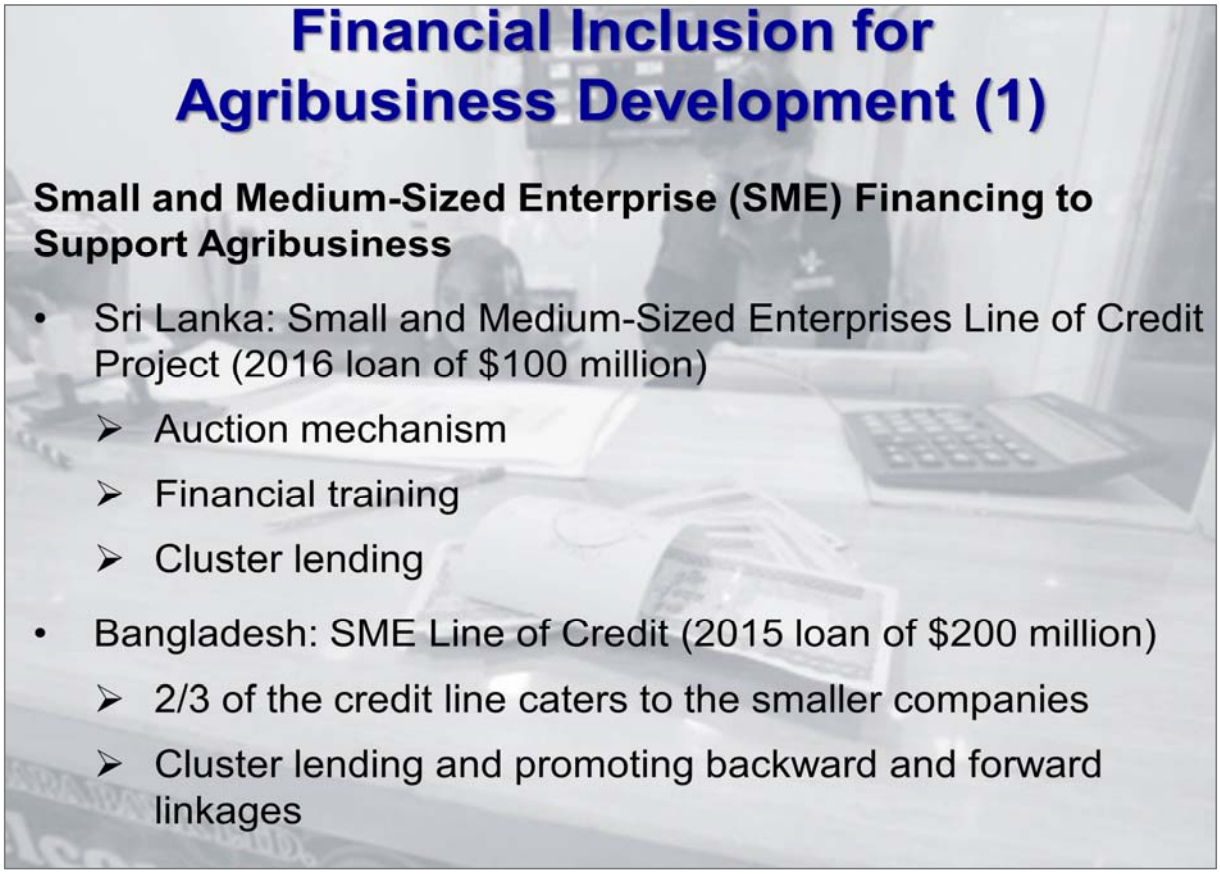
- Modern land management and practices to address degrading soil fertility

Pacific

Papua New Guinea: Building Resilience to Climate Change (2015 grant of $24.25 million)

- Rehabilitation of coral reefs and mangrove forests and establishment of locally managed marine areas
- Income generation in aquaculture of fish and crustacean
- Food processing to extend shelf life to improve food security
- Stabilization of watershed catchment areas


Private Sector Operations
Climate-resilient Rice Value Chain
• Proposed $20 million loan to expand rice storage and processing facilities in the Mekong Delta
➢ Climate resilience. Reduction in post-harvest losses and protection against increasing climate risks (floods, salt-intrusion)
➢ Inclusive value chain. Loc Troi will increase its rice contract farming model from 25,000 to 50,000 farmers throughout the Mekong Delta
➢ Poverty reduction. Daily income of rice contract farmers expected to increase from $4 to $8, lifting farming families out of absolute poverty
➢ Official cofinancing. $15 million from ADB and $5 million from Canadian Climate Fund for the Private Sector in Asia


Financial Inclusion for Agribusiness Development (1)
Small and Medium-Sized Enterprise (SME) Financing to Support Agribusiness
• Sri Lanka: Small and Medium-Sized Enterprises Line of Credit Project (2016 loan of $100 million)
➢ Auction mechanism
➢ Financial training
➢ Cluster lending
• Bangladesh: SME Line of Credit (2015 loan of $200 million)
➢ 2/3 of the credit line caters to the smaller companies
➢ Cluster lending and promoting backward and forward linkages

Financial Inclusion for Agribusiness Development (2)

Small Medium Enterprise (SME) financing to support agribusiness

- PRC: Gansu Featured Agriculture and Financial Services System Development (2015 loan of $100 million)
  - Financial Intermediary (FI) loans to support rural financing for SMEs and farmer cooperatives
  - Capacity building of local banks to enhance their lending to agriculture sector
- Mongolia: Agriculture and Rural Development Project (Additional Financing) (2015 loan of $50 million)
  - FI loans to support agribusiness with focus on SMEs
  - Support for comprehensive value chain development plans
  - Mongolian brand development and marketing to developed countries

4. Future Directions

ADB

Technology in Strategic Operations

Internet Plus and Application of Big Data - to provide market, weather and other agri-related information, to strengthen food quality management through "e-traceability" of livestock and poultry (Pakistan, Thailand, Vietnam, PRC)

Integrated Engineering System - to take account of the multidimensional impact of water resource management (Pakistan, Afghanistan)

Water Saving Irrigation (Drip Irrigation) – in the areas where farmers struggle with cold temperature of the irrigation water by introducing drip and sprinkle irrigation (China)

Climate-controlled greenhouse technology - in an enclosed environment to control temperature and humidity by using energy-efficient light-emitting diode lights and blackout systems

23

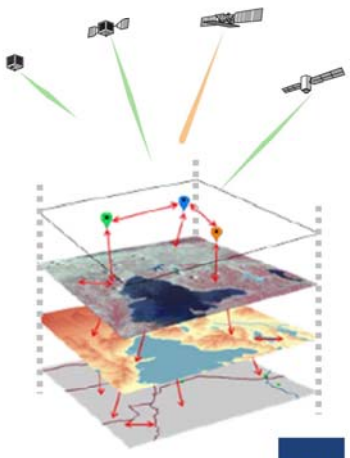
ADB

Technology in Strategic Operations

- **Geographic Information System -** to visualize, analyze, and interpret data to provide better water services (Pakistan, GMS)

- **Developing GIS-based integrated water resources information system (WRIS)**

- **Developing high efficiency irrigation system**
  - Fertigation; efficient use of water and fertilizer



24

ADB

New Areas of Investment

- High level technology

PRC: Internet-Plus Based Socialized Agricultural Service System Development

- Objective: Develop inclusive agricultural service systems through ICT application along the agriculture and food value chains
- Complements
  - Establishment of data analysis centers to provide farmers and consumers with tailored ICT generated information along the entire value chain
  - Production and distribution sensors (Internet of Things (IoT) linked to data analysis centers
  - Production optimization with the help of IoT and online decision support systems
- Benefits will result from increased production, reduced input costs, reduction of environmental pollution and marketing risks, and access to premium markets via traceability services for agricultural products

25

ADB

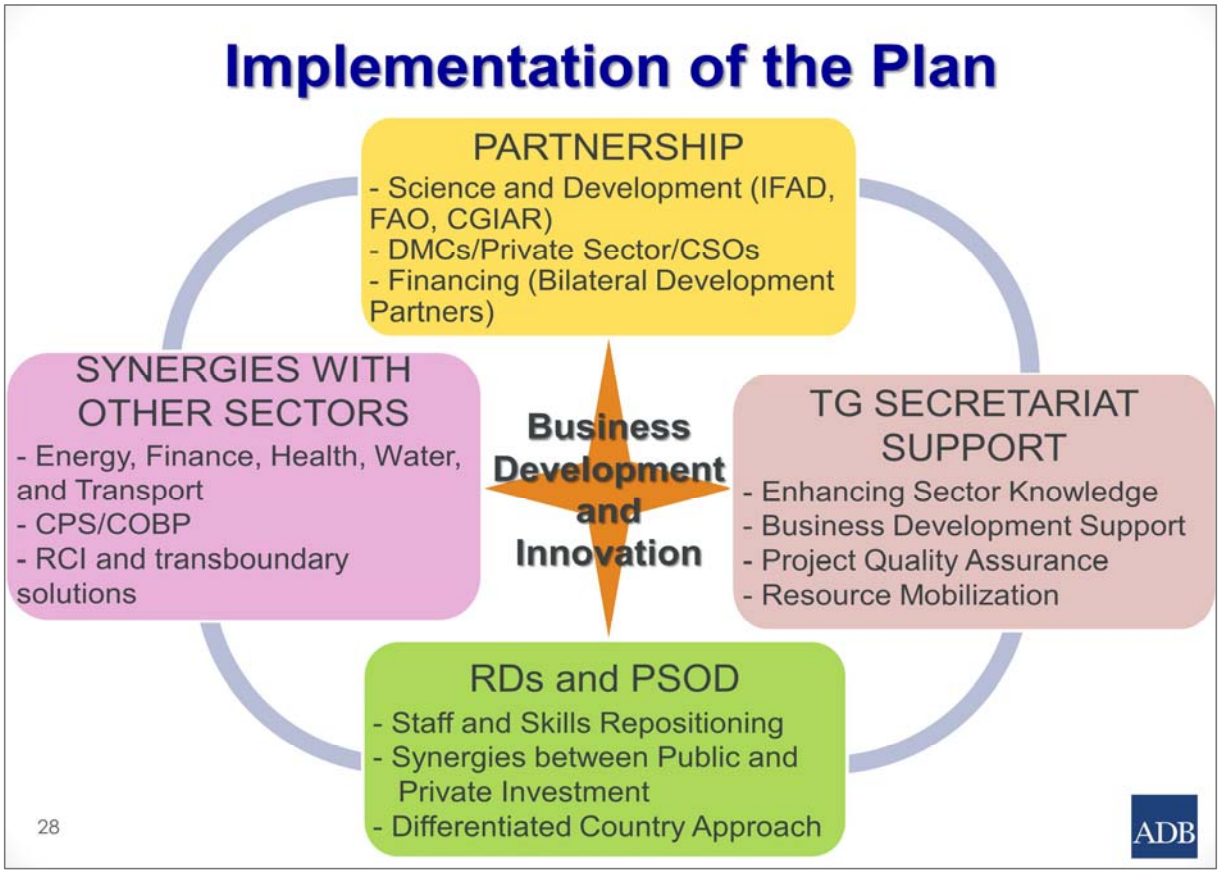
New Areas of Investment

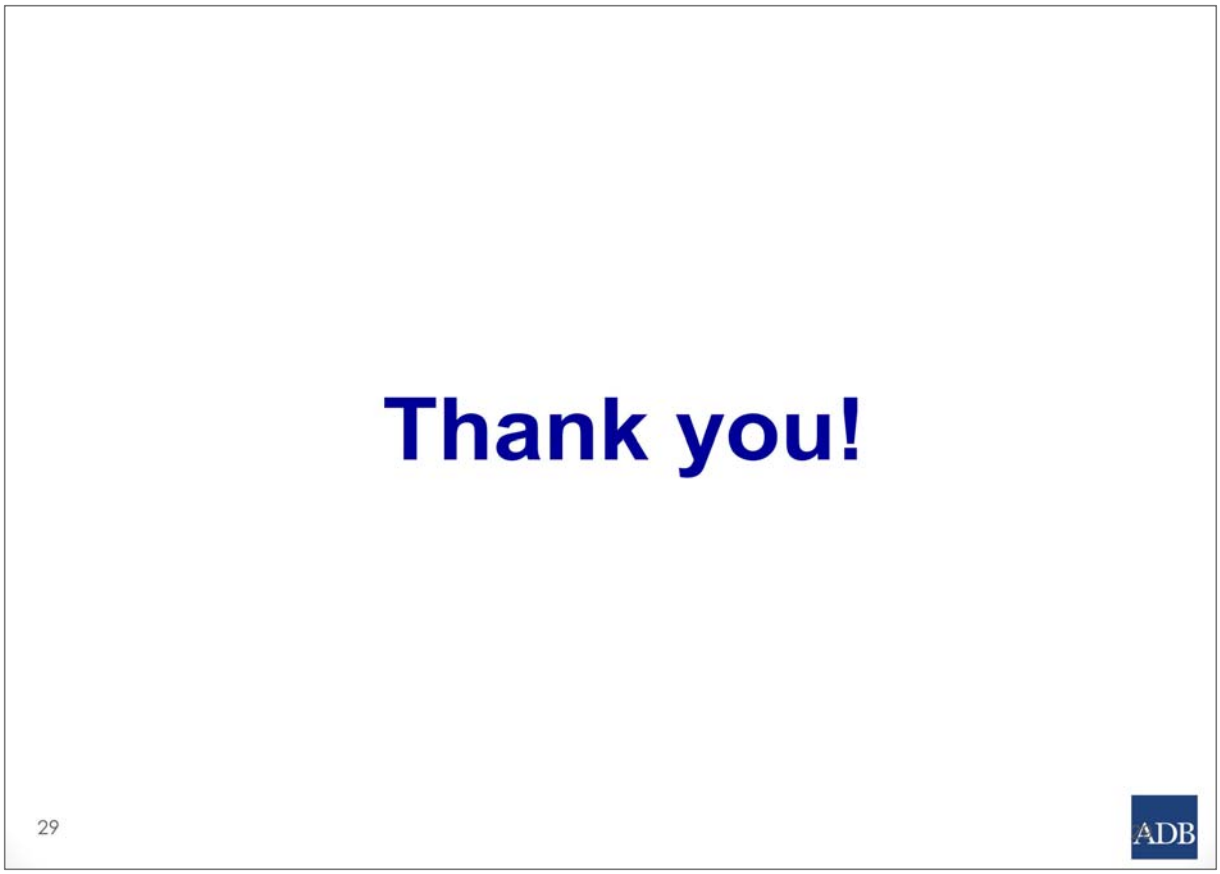
- Climate smart agriculture

REG: Climate Resilient Rice Varieties

- Objective: Increased rice yield and water efficiency in water-short and drought-prone areas
- Complements
  - Large-scale seed multiplication and distribution of climate-adapted varieties
  - Evaluation and dissemination of second generation water-saving rice varieties
  - Development and dissemination of third generation aerobic and alternate wetting and drying varieties
- Key Partners
  - IRRI
  - National rice and extension centers
  - National and provincial seed multiplication agencies


New Areas of Investment
Markets, agribusiness and value chain
Value Chains Infrastructure
Objective: Develop an integrated supply model (wholesale market) for fresh and safe food custom-tailored models of wholesale markets for selected DMCs
Complements
Mobilize investment on wholesale market
Use HLT in managing storage and inventory, detecting and preventing food contamination, and food transportation.
Training of government officials on the development and management of wholesale markets


Implementation of the Plan
PARTNERSHIP
- Science and Development (IFAD, FAO, CGIAR)
- DMCs/Private Sector/CSOs
- Financing (Bilateral Development Partners)
SYNERGIES WITH OTHER SECTORS
- Energy, Finance, Health, Water, and Transport
- CPS/COBP
- RCI and transboundary solutions
Business Development and Innovation
TG SECRETARIAT SUPPORT
- Enhancing Sector Knowledge
- Business Development Support
- Project Quality Assurance
- Resource Mobilization
RDs and PSOD
- Staff and Skills Repositioning
- Synergies between Public and Private Investment
- Differentiated Country Approach
28
ADB


Thank you!
29
ADB

Session 3

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Sharing the Stories of Successes & Failures of ICT-based International Agricultural Development Cooperation

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 3-1

World Bank's ICT-based Agricultural Development Cooperation Projects

David J. Nielson
(World Bank)

KREI

M·E·M·O

M·E·M·O

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 3-2

Indonesian Case of Successful Agricultural Development Project based on ICT

Leli Nuryati
(Indonesian Ministry of Agriculture &Rural Development)

KREI

INDONESIAN CASE OF SUCCESSFUL AGRICULTURAL DEVELOPMENT PROJECT BASED ON ICT

through

Colaboration between The Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries (EPIS) and Center for Africultural Data and Information System (CADIS), Ministry of Agriculture (MoA), Republic of Indonesia

on

"The Project of Establishing National Agri-Food Information System (NAIS) and Developing Human Resources in Indonesia, 2016"



by

DR. LELI NURYATI

HEAD OF AGRICULTURE COMMODITIES DATA DIVISION, CADIS, MoA, INDONESIA

Kementerian Pertanian www.pertanian.go.id

THE OBJECTIVES AND ACTIVITIES OF PROJECT

- **OBJECTIVES:**
  - ➢ **Establish NAIS to improve food security in Indonesia**
  - ➢ **Build the capacity of local statistics personnel to improve food security in Indonesia**
- **ACTIVITIES:**
  - ➢ **Developing NAIS mobile application (NAIS App) for data collection to upload and disseminate data through NAIS with mobile devices**
    - ✓ **On-line data reporting system for sugarcane (web version)**
    - ✓ **Mobile application for sugarcane data entry directly from sugarcane companies/factories (mobile version)**
  - ➢ **Developing human resources (Local training/workshop and seminar for official offices to enhance their ability of using NAIS and NAIS app effectively for better comprehensive of ICT adoption in Agriculture)**

Kementerian Pertanian www.pertanian.go.id

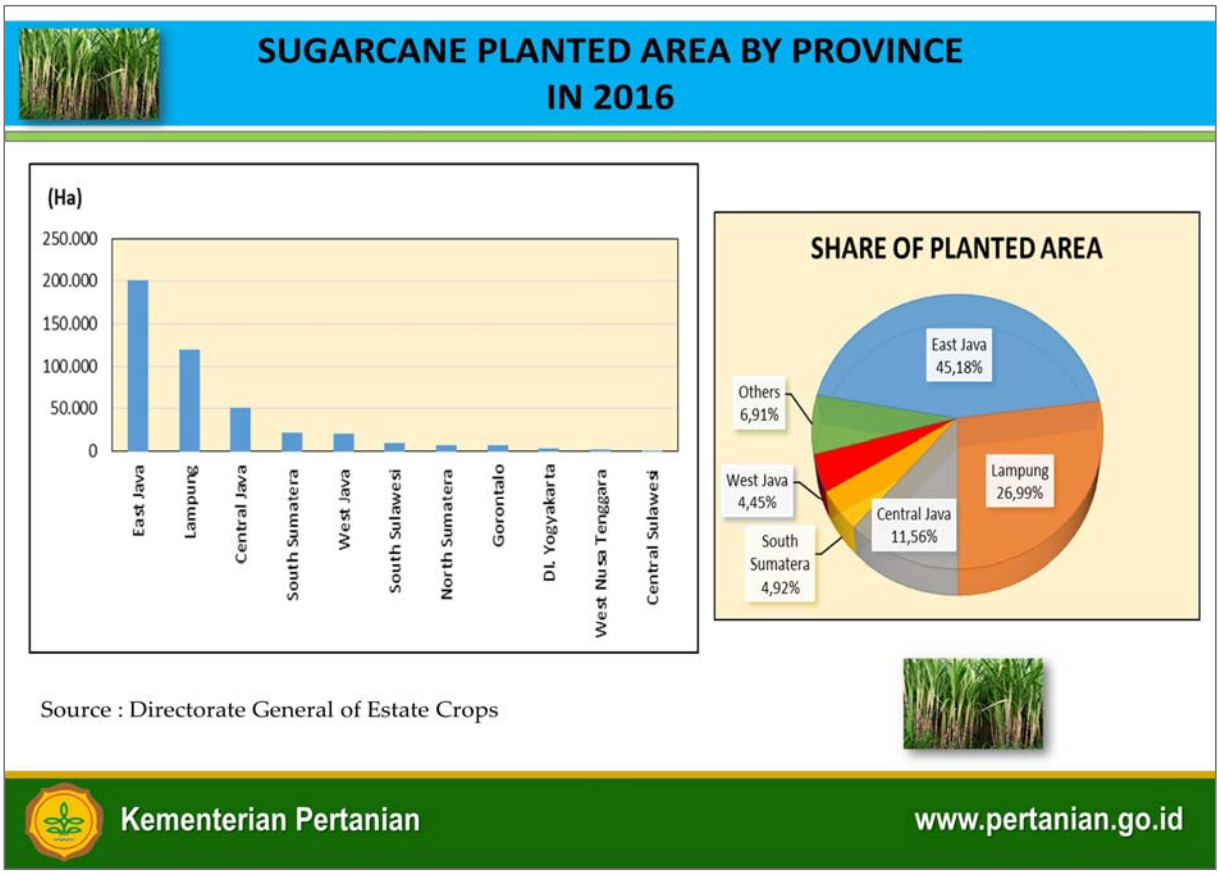
THE SCOPE OF PROJECT

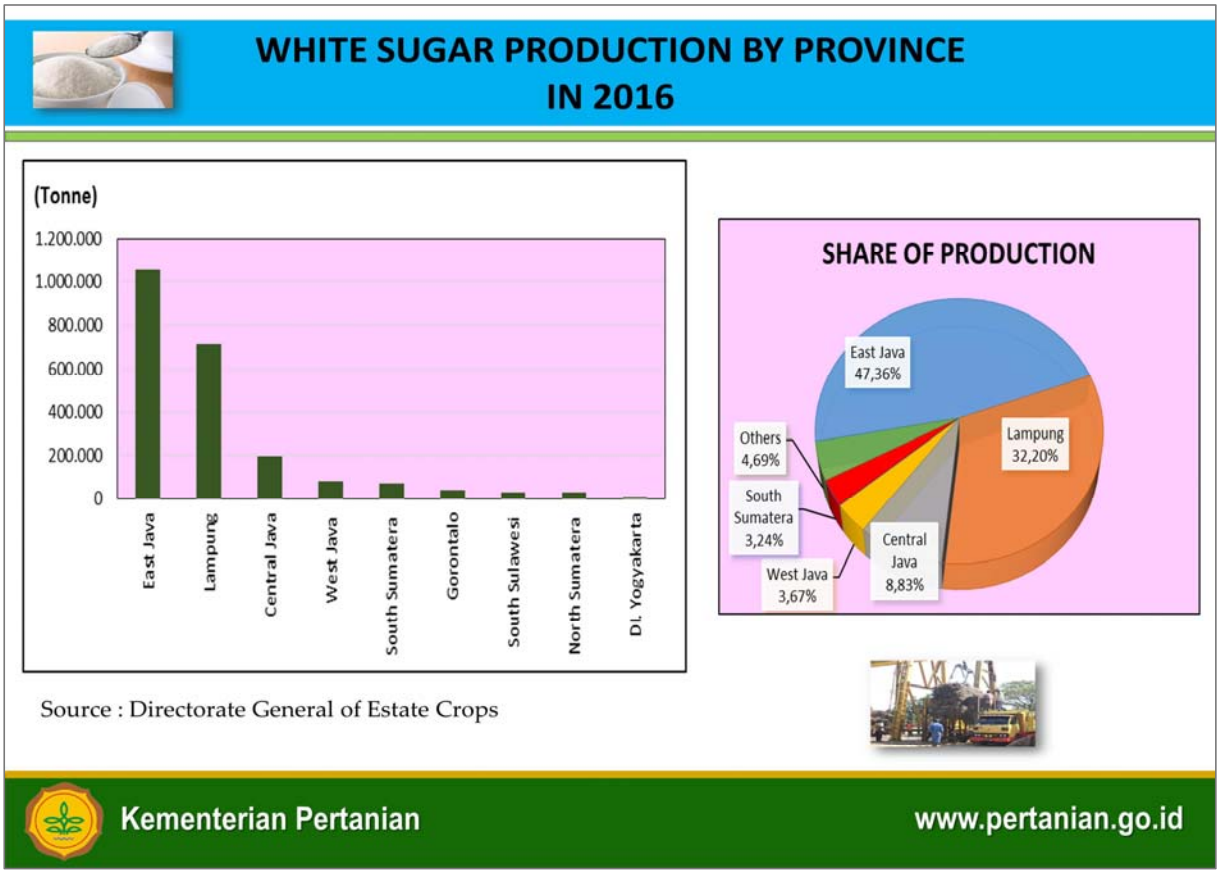
1. Establishment of National Action Plan (NAP) to build NAIS
2. Establishment NAIS that will be connected to ASEAN +3 Food Security Information System (AFSIS)
3. Dispatch of Experts
4. Invitation Programme in Korea
5. Local Training and Seminar to build officials' capacity
6. Provision of equipment
   a) EPIS provide IT equipment to CADIS
      - ✓ 2 units laptops with OS for central government offices
      - ✓ 70 units tablet PC (64 for sugarcane factories' and 6 for central officers)
   b) CADIS provide IT equipment for implementing the project
      - ✓ 1 unit Integrated application server
      - ✓ 1 unit DB Server
      - ✓ 1 unit Integrated Uninteruptible Power Supply

Kementerian Pertanian www.pertanian.go.id

SUGARCANE PRODUCING AREAS IN INDONESIA

Kementerian Pertanian www.pertanian.go.id


SUGARCANE PLANTED AREA BY PROVINCE
IN 2016
(Ha)
250.000
200.000
150.000
100.000
50.000
0
East Java
Lampung
Central Java
South Sumatera
West Java
South Sulawesi
North Sumatera
Gorontalo
DI. Yogyakarta
West Nusa Tenggara
Central Sulawesi
SHARE OF PLANTED AREA
East Java 45,18%
Lampung 26,99%
Central Java 11,56%
South Sumatera 4,92%
West Java 4,45%
Others 6,91%
Source : Directorate General of Estate Crops
Kementerian Pertanian
www.pertanian.go.id


WHITE SUGAR PRODUCTION BY PROVINCE
IN 2016
(Tonne)
1.200.000
1.000.000
800.000
600.000
400.000
200.000
0
East Java
Lampung
Central Java
West Java
South Sumatera
Gorontalo
South Sulawesi
North Sumatera
DI. Yogyakarta
SHARE OF PRODUCTION
East Java 47,36%
Lampung 32,20%
Central Java 8,83%
West Java 3,67%
South Sumatera 3,24%
Others 4,69%
Source : Directorate General of Estate Crops
Kementerian Pertanian
www.pertanian.go.id

HARVESTED AREA AND WHITE SUGAR PRODUCTION BY SUGAR CANE FACTORIES/COMPANIES (1)



No.	Province/ Sugar Cane Factories	Districts	2016	
			Harvested Area (Ha)	White Sugar Production (Tonne)
1	**North Sumatera**		**6.186**	**17.936**
	PG Sei Semayang	Deli Serdang	-	-
	PG Kuala Madu	Langkat	6.186	17.936
2	**South Sumatera**		**23.061**	**112.837**
	PG Cinta Manis	Ogan Komering	12.283	58.197
	PG Komering	OKU Timur	10.778	54.640
3	**Lampung**		**118.536**	**676.444**
	PG Bunga Mayang	Lampung Utara	13.671	63.175
	PG Gunung Madu Plantation	Lampung Tengah	28.241	192.401
	PG Gula Putih Mataram	Lampung Tengah	22.598	115.595
	PG Sweet Indolampung	Tulang Bawang	22.158	94.661
	PG Indolampung Perkasa	Tulang Bawang	18.768	107.411
	PG PSMI	Way Kanan	13.100	103.200
4	**West Java**		**20.179**	**84.770**
	PG Sindang Laut	Cirebon	3.521	17.881
	PG Jatitujuh	Majalengka	8.509	33.739
	PG Subang	Subang	4.512	17.077
	PG Tersana Baru	Cirebon	3.637	16.073
	PG Karangsuwung	Cirebon		
5	**Central Java**		**40.712**	**160.775**
	PG Jatibarang	Brebes	1.814	6.236
	PG Pangka	Tegal	2.743	9.894
	PG Sumberharjo	Pemalang	2.171	8.238
	PG Sragi	Pekalongan		
	PG Rendeng	Kudus	2.477	8.708
	PG Mojo	Sragen	4.118	14.336
	PG Tasikmadu	Karanganyar	3.814	13.859
	PG Gondang Baru	Klaten	602	1.826
	PG Pakis Baru	Pati	5.706	21.088
	PG Gendhis Multi Manis	Blora	3.514	15.803
	PG Trangkil	Pati	13.753	60.787
	PG IGN	Kendal		0
6	**DI Yogyakarta**		**6.787**	**31.125**
	PG Madukismo	Bantul	6.787	31.125

Kementerian Pertanian www.pertanian.go.id

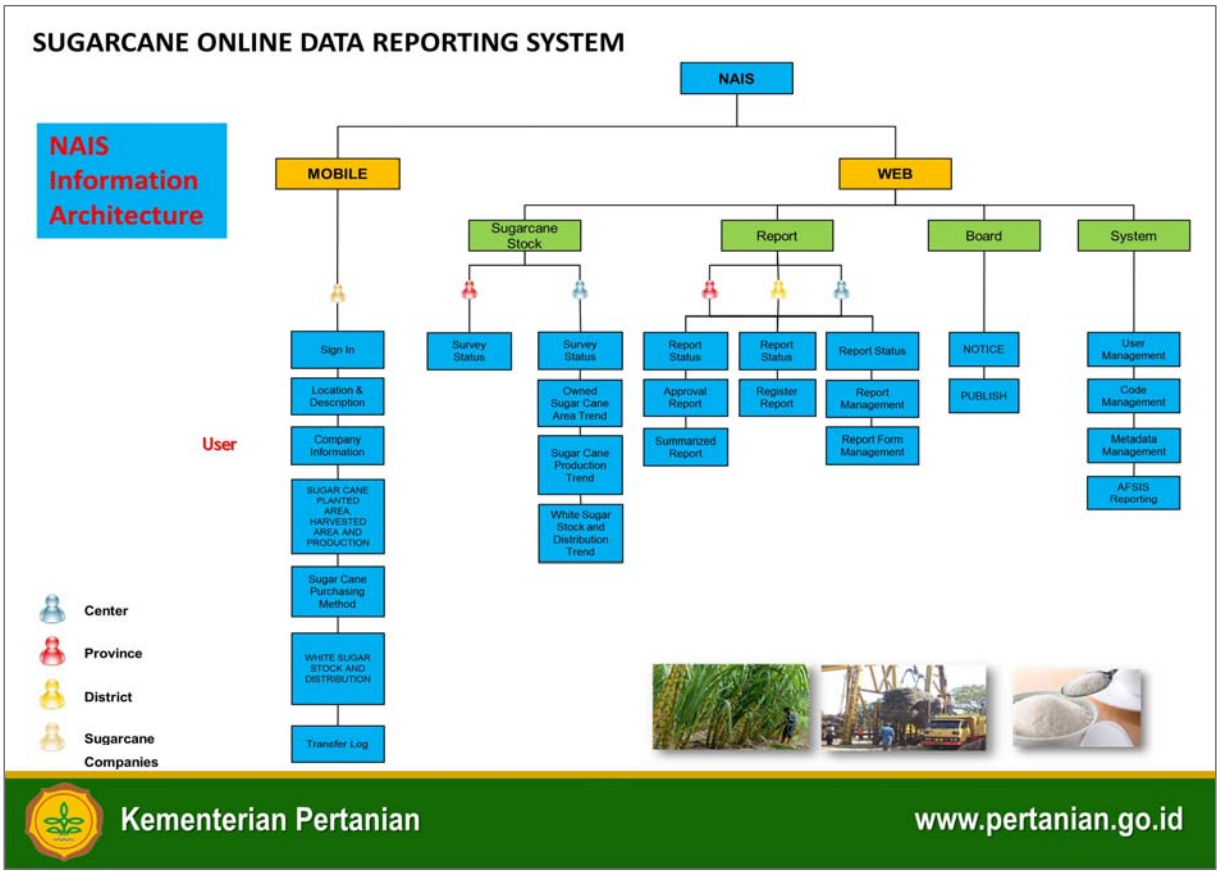
HARVESTED AREA AND WHITE SUGAR PRODUCTION BY SUGAR CANE FACTORIES/COMPANIES (2)

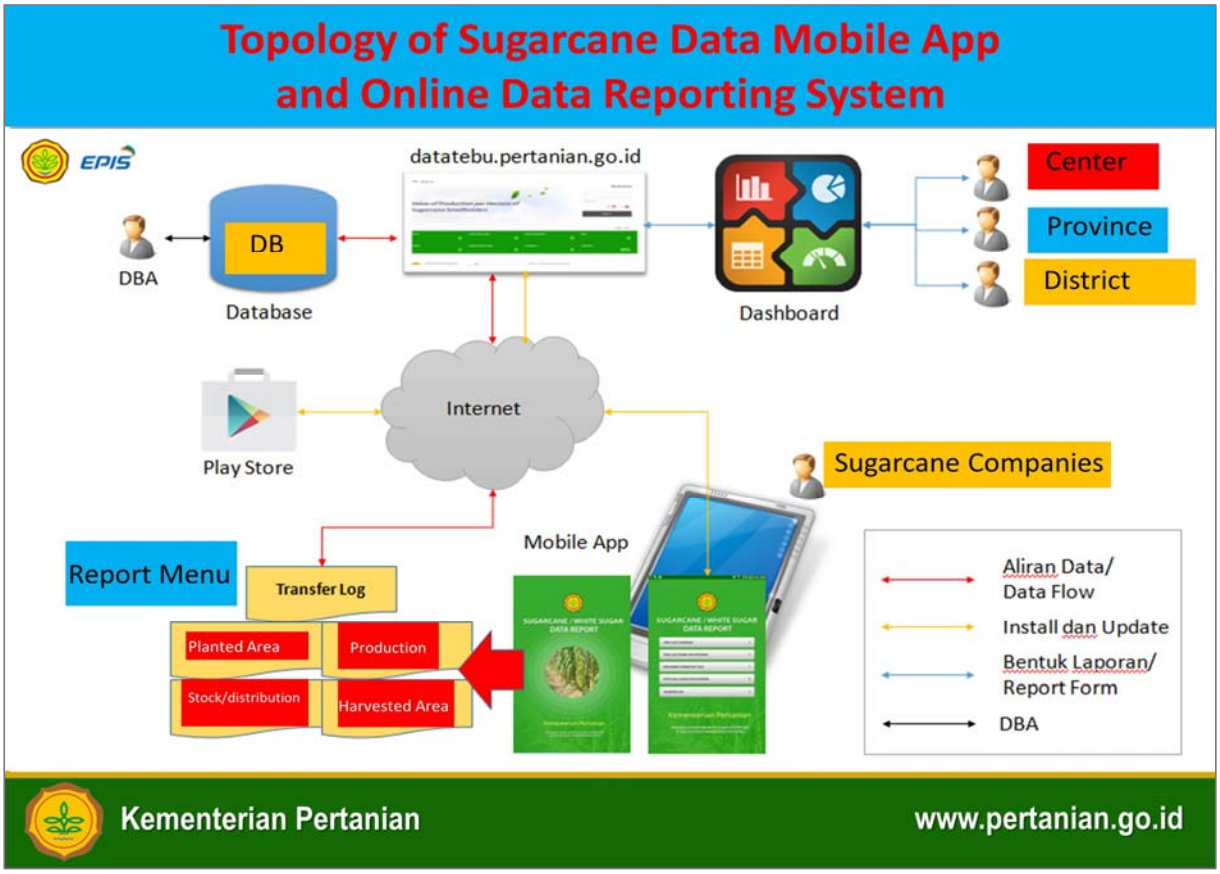


No.	Province/ Sugar Cane Factories	Districts	2016	
			Harvested Area (Ha)	White Sugar Production (Tonne)
7	**East Java**		**205.244**	**1.047.413**
	PG Watutulis	Sidoarjo	3.261	14.809
	PG Tulangan	Sidoarjo	0	0
	PG Kremboong	Sidoarjo	4.585	20.739
	PG Jombang Baru	Jombang	3.594	17.563
	PG Cukir	Jombang	6.954	40.753
	PG Lestari	Nganjuk	7.811	36.822
	PG Merican	Kediri	4.524	21.177
	PG Pesantren Baru	Kediri	12.962	65.799
	PG Mojopanggung	Tulungagung	3.633	17.990
	PG Gempolkrep	Mojokerto	12.538	73.749
	PG Ngadirejo	Kediri	12.248	67.866
	PG Sudhono	Ngawi	3.654	14.930
	PG Purwodadi	Magetan	3.313	14.752
	PG Rejosari	Magetan	3.162	13.310
	PG Pagotan	Madiun	5.152	25.485
	PG Kanigoro	Madiun		
	PG Kedawung	Pasuruan	3.280	13.190
	PG Wonolangan	Probolinggo	3.430	14.722
	PG Gending	Probolinggo	1.627	5.787
	PG Pajakaran	Probolinggo	1.801	6.102
	PG Jatiroto	Lumajang	10.360	59.883
	PG Semboro	Jember	12.608	59.666
	PG Wringinanom	Situbondo	1.851	10.031
	PG Olean	Situbondo	1.681	7.703
	PG Panji	Situbondo	3.576	16.522
	PG Asembagus	Situbondo	5.177	31.410
	PG Prajekan	Bondowoso	6.074	28.142
	PG Krebet Baru	Malang	19.897	121.663
	PG Rejoagung Baru	Madiun	8.992	45.875
	PG Kebon Agung	Malang	24.322	121.887
	PG Candi	Sidoarjo	5.435	29.983
	PG Kebun Tebu Mas	Lamongan	7.742	29.103
8	**Gorontalo**		**7.044**	**30.678**
	PG Gorontalo	Gorontalo	7.044	30.678
9	**South Sulawesi**		**11.596**	**39.727**
	PG Takalar	Takalar	2.939	7.740
	PG Bone	Bone	4.248	15.672
	PG Camming	Bone	4.409	16.315
10	**West Nusa Tenggara**		**1.383**	**2.913**
	PG Sukses Mantap Sejahtera	Dompu	1.383	2.913

Source : Sugar Cane Directorate under the Directorate General of Estate Crops

Kementerian Pertanian www.pertanian.go.id


SUGARCANE ONLINE DATA REPORTING SYSTEM
NAIS Information Architecture
NAIS
MOBILE
WEB
Sugarcane Stock
Report
Board
System
User
Sign In
Location & Description
Company Information
SUGAR CANE PLANTED AREA, HARVESTED AREA AND PRODUCTION
Sugar Cane Purchasing Method
WHITE SUGAR STOCK AND DISTRIBUTION
Transfer Log
Survey Status
Survey Status
Owned Sugar Cane Area Trend
Sugar Cane Production Trend
White Sugar Stock and Distribution Trend
Report Status
Approval Report
Summarized Report
Report Status
Register Report
Report Status
Report Management
Report Form Management
NOTICE
PUBLISH
User Management
Code Management
Metadata Management
AFSIS Reporting
Center
Province
District
Sugarcane Companies
Kementerian Pertanian
www.pertanian.go.id


Topology of Sugarcane Data Mobile App and Online Data Reporting System
EPIS
datatebu.pertanian.go.id
DBA
DB
Database
Dashboard
Center
Province
District
Internet
Play Store
Sugarcane Companies
Mobile App
Report Menu
Transfer Log
Planted Area
Production
Stock/distribution
Harvested Area
Aliran Data/ Data Flow
Install dan Update
Bentuk Laporan/ Report Form
DBA
Kementerian Pertanian
www.pertanian.go.id

Login on Sugarcane Data Mobile App

Login on Mobile App

a. Click on "Laporan Data Tebu"

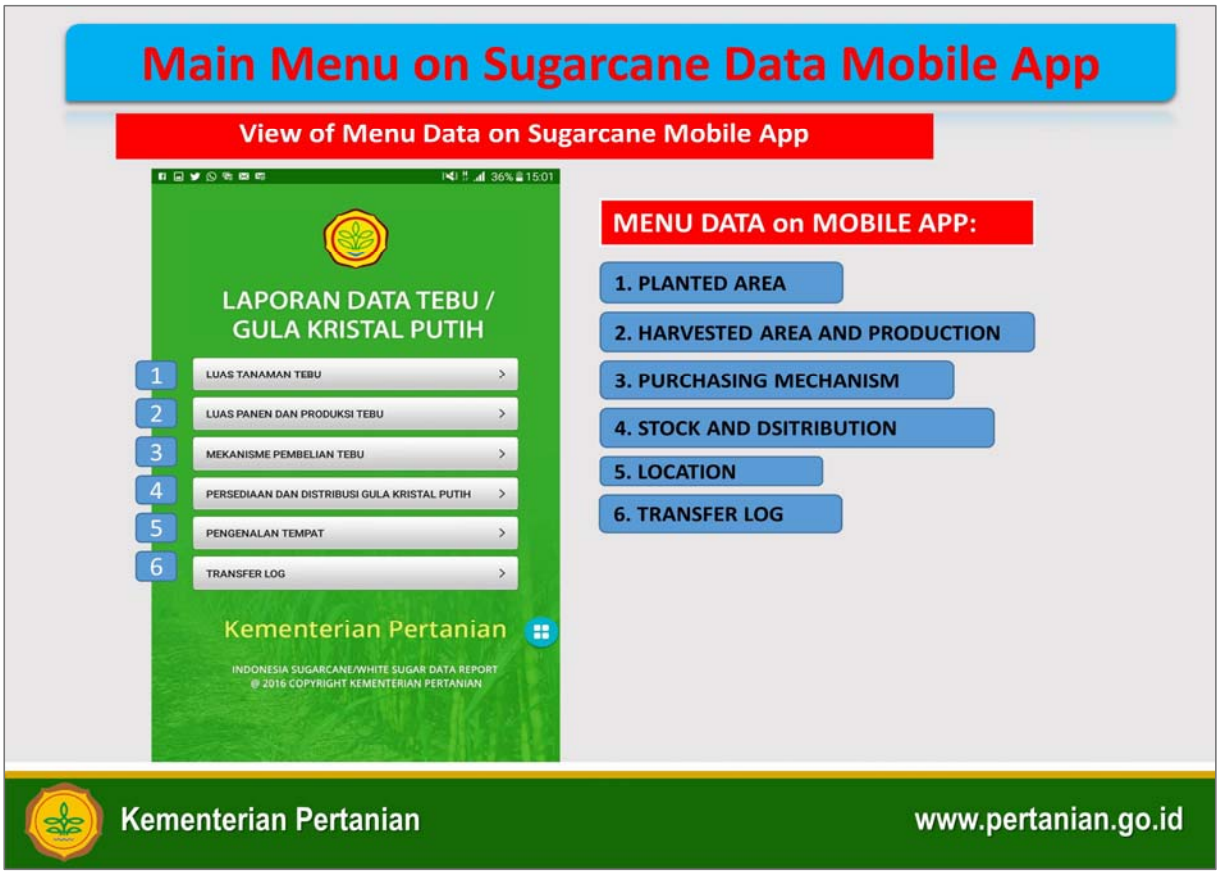
b. Put Username, Password and Click login

Kementerian Pertanian www.pertanian.go.id

User Management for Mobile App

- Sugarcane Data Mobile App is developed to operationalized on mobile phone with android. This application can be downloaded in app store or in sugarcane data website report online *http://datatebu.pertanian.go.id/naisvi*
  - User is sugarcane factory/company
  - Username and password of sugarcane data mobile app is distributed by CADIS, MoA
  - Each user is allowed to manage the relevan data and information.
  - Data is reported monthly

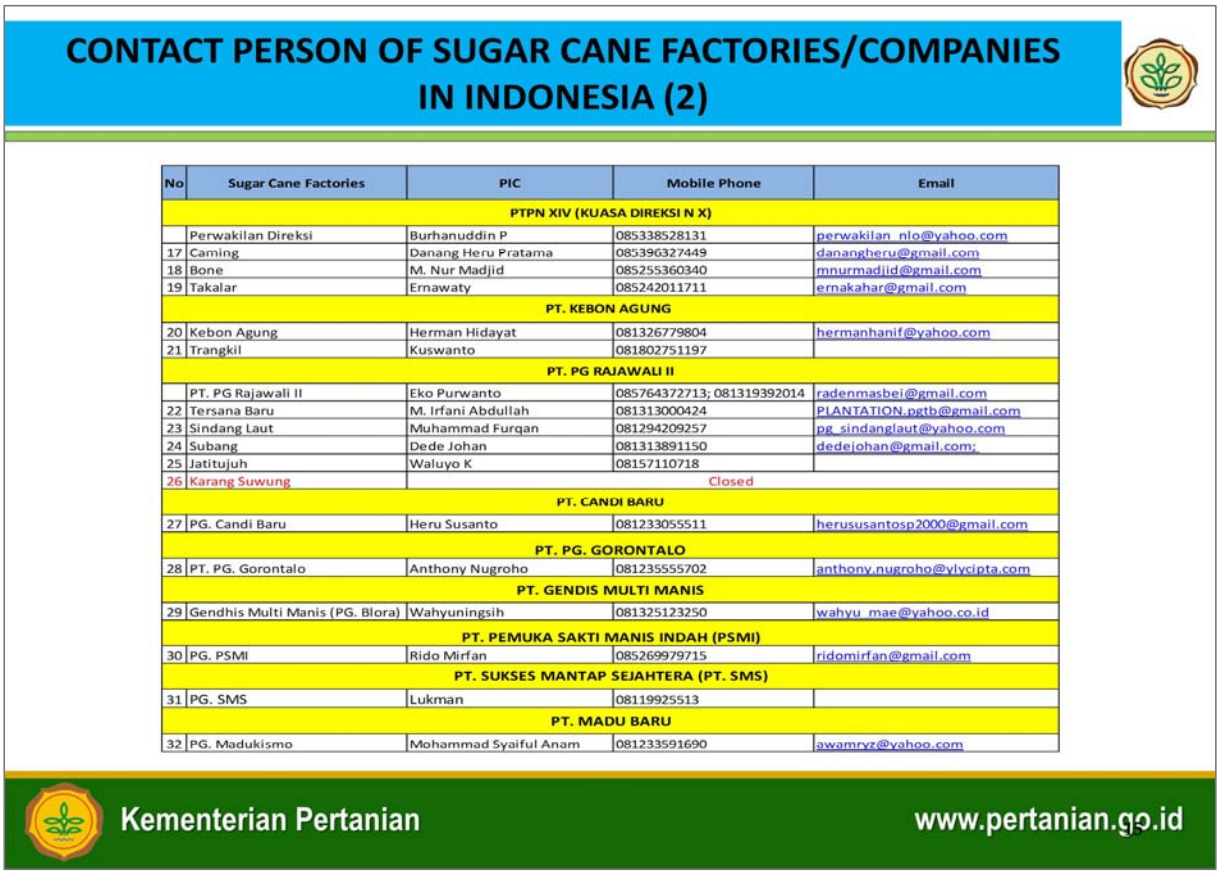
Kementerian Pertanian www.pertanian.go.id



CONTACT PERSON OF SUGAR CANE FACTORIES/COMPANIES IN INDONESIA (1)

No	Sugar Cane Factories	PIC	Mobile Phone	Email
		PTPN XI		
1	SUDHONO	JITO	085645765155	jsukaret@yahoo.co.id
		EKO PURNOMO	085259763666	hendro_arianto99@yahoo.com
2	PURWODADIE	YANTI	085236243690	yanti.pwd@gmail.com
		ROSI	085608207409	qc.pgpwd@gmail.com
3	REJOSARI	DESSY SOESILOWATIE	085330898877	dessy.floraimut3@gmail.com
		TRIJONO DODY KUSUMA	081259154540	dodykusumahd@gmail.com
4	PAGOTTAN	ABI MAKARIM	085646785737	abimakarim61@gmail.com
		ERNA	082257435379	litb_pgt@yahoo.com
5	KANIGORO	SUDARNO	082335246773	PLANTATIONkan@gmail.com
		VERMIA	087753814006	qualitycontrol1105@gmail.com
6	KEDAWUNG	ANUGRAH WIDHI	082335866613	anugrahwidhi@gmail.com
		ANDIKA S	085231967268	
7	WONOLANGAN	TEGUH MULYANTO	085228799749	tanwon.n11@gmail.com
		GUNAWAN ABDUL BASITH	085236709484	sinderkebun@gmail.com
8	GENDING	ARIF AFANDI	082332919169	tangen1830@gmail.com
		KHUSNOL	085230690214	qc.gending@gmail.com
9	PAJARAKAN	YUDI KUNSUPRIYANTO	081233231232	tan.padjarakan@gmail.com
		WIRATMOKO	081233860030	damar_kinan@yahoo.com
10	JATIROTO	M. EDY SUGIARTO	081358316999	tanjaterp72@gmail.com
		ARIEF MU'ALIM	085271864207	litbang.djatiroto@gmail.com
11	SEMBORO	REZHA MUHAMMAD	082141100341	rezhamuhammad90@gmail.com
		EKA SETYA D	081234310990	qcpgsemboro1928@gmail.com
12	WRINGIN ANOM	RONI HIDAYAT	082141633889	litbangwina@yahoo.com
		MUNTAHA	08533643807	qc.wina@gmail.com
13	OLEAN	SRI ASTUTI	085257849055	astuti2775@gmail.com
		NUR YUDHA BUDHIYANTO	085293414857	qc.ole1846@gmail.com
14	PANJI	ANDRI SUWANDONO	085330172362	andrisuwandono@gmail.com
		UTOMO RIYADI	087712859307	mayor_riyadi@gmail.com
15	ASEMBAGUS	RIFQI HERMAWAN	081249073918	rifqihermawan20@gmail.com
		DWI RATNA SULISTYOWATI	081358000060	qcase.n11wiltim@gmail.com
16	PRAJEKAN	ARIF SUGIANTO	085234445336	arifsugiantoo@gmail.com
		PRASETYANTO	085232071676	qcpradjekan@gmail.com

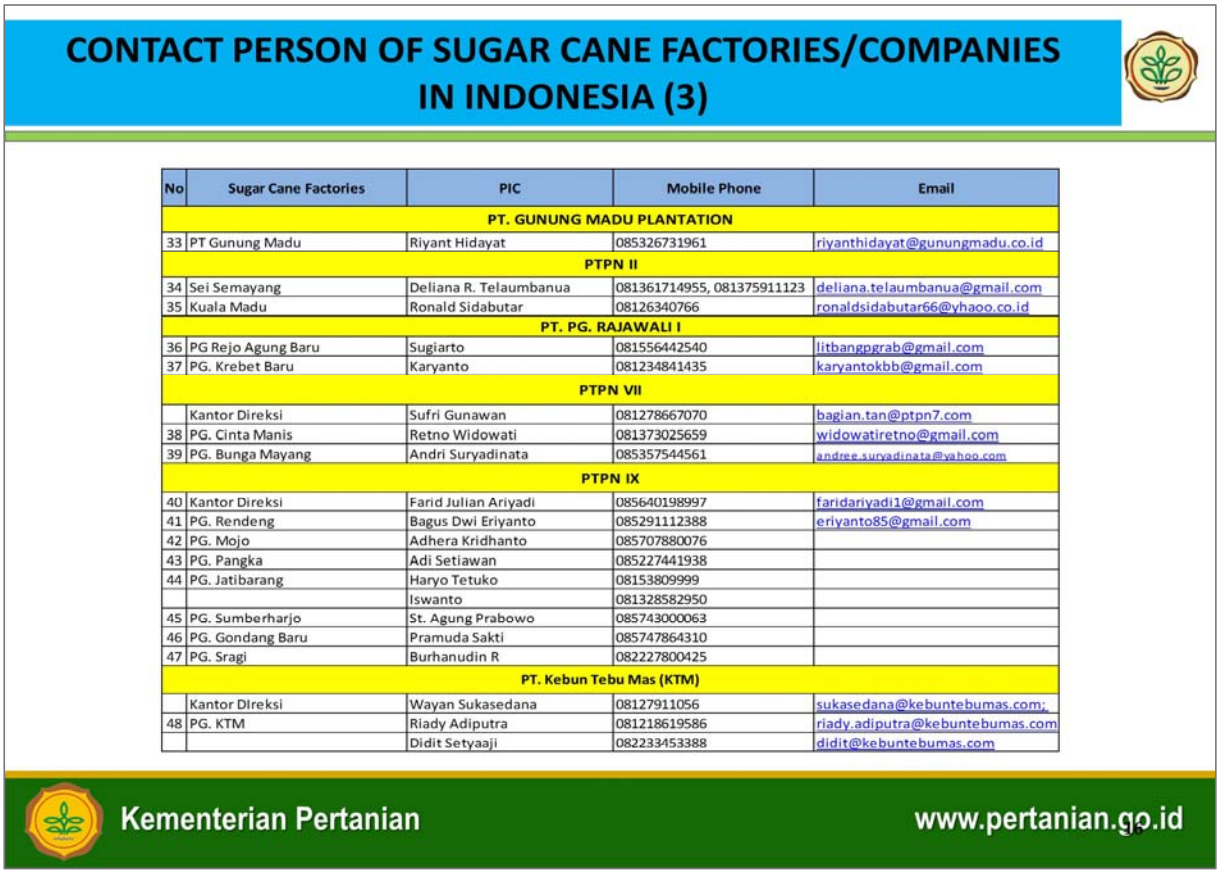
Kementerian Pertanian www.pertanian.go.id



CONTACT PERSON OF SUGAR CANE FACTORIES/COMPANIES IN INDONESIA (2)

No	Sugar Cane Factories	PIC	Mobile Phone	Email
	PTPN XIV (KUASA DIREKSI N X)			
	Perwakilan Direksi	Burhanuddin P	085338528131	perwakilan_nlo@yahoo.com
17	Caming	Danang Heru Pratama	085396327449	danangheru@gmail.com
18	Bone	M. Nur Madjid	085255360340	mnurmadjid@gmail.com
19	Takalar	Ernawaty	085242011711	ernakahar@gmail.com
	PT. KEBON AGUNG			
20	Kebon Agung	Herman Hidayat	081326779804	hermanhanif@yahoo.com
21	Trangkil	Kuswanto	081802751197	
	PT. PG RAJAWALI II			
	PT. PG Rajawali II	Eko Purwanto	085764372713; 081319392014	radenmasbei@gmail.com
22	Tersana Baru	M. Irfani Abdullah	081313000424	PLANTATION.pgtb@gmail.com
23	Sindang Laut	Muhammad Furqan	081294209257	pg_sindanglaut@yahoo.com
24	Subang	Dede Johan	081313891150	dedejohan@gmail.com;
25	Jatitujuh	Waluyo K	08157110718	
26	Karang Suwung	Closed		
	PT. CANDI BARU			
27	PG. Candi Baru	Heru Susanto	081233055511	herususantosp2000@gmail.com
	PT. PG. GORONTALO			
28	PT. PG. Gorontalo	Anthony Nugroho	081235555702	anthony.nugroho@ylycipta.com
	PT. GENDIS MULTI MANIS			
29	Gendhis Multi Manis (PG. Blora)	Wahyuningsih	081325123250	wahyu_mae@yahoo.co.id
	PT. PEMUKA SAKTI MANIS INDAH (PSMI)			
30	PG. PSMI	Rido Mirfan	085269979715	ridomirfan@gmail.com
	PT. SUKSES MANTAP SEJAHTERA (PT. SMS)			
31	PG. SMS	Lukman	08119925513	
	PT. MADU BARU			
32	PG. Madukismo	Mohammad Syaiful Anam	081233591690	awamryz@yahoo.com

Kementerian Pertanian www.pertanian.go.id



CONTACT PERSON OF SUGAR CANE FACTORIES/COMPANIES IN INDONESIA (3)

No	Sugar Cane Factories	PIC	Mobile Phone	Email
	PT. GUNUNG MADU PLANTATION			
33	PT Gunung Madu	Riyant Hidayat	085326731961	riyanthidayat@gunungmadu.co.id
	PTPN II			
34	Sei Semayang	Deliana R. Telaumbanua	081361714955, 081375911123	deliana.telaumbanua@gmail.com
35	Kuala Madu	Ronald Sidabutar	08126340766	ronaldsidabutar66@yhaoo.co.id
	PT. PG. RAJAWALI I			
36	PG Rejo Agung Baru	Sugiarto	081556442540	litbangpgrab@gmail.com
37	PG. Krebet Baru	Karyanto	081234841435	karyantokbb@gmail.com
	PTPN VII			
	Kantor Direksi	Sufri Gunawan	081278667070	bagian.tan@ptpn7.com
38	PG. Cinta Manis	Retno Widowati	081373025659	widowatiretno@gmail.com
39	PG. Bunga Mayang	Andri Suryadinata	085357544561	andree.suryadinata@yahoo.com
	PTPN IX			
40	Kantor Direksi	Farid Julian Ariyadi	085640198997	faridariyadi1@gmail.com
41	PG. Rendeng	Bagus Dwi Eriyanto	085291112388	eriyanto85@gmail.com
42	PG. Mojo	Adhera Kridhanto	085707880076	
43	PG. Pangka	Adi Setiawan	085227441938	
44	PG. Jatibarang	Haryo Tetuko	08153809999	
		Iswanto	081328582950	
45	PG. Sumberharjo	St. Agung Prabowo	085743000063	
46	PG. Gondang Baru	Pramuda Sakti	085747864310	
47	PG. Sragi	Burhanudin R	082227800425	
	PT. Kebun Tebu Mas (KTM)			
	Kantor Direksi	Wayan Sukasedana	08127911056	sukasedana@kebuntebumas.com;
48	PG. KTM	Riady Adiputra	081218619586	riady.adiputra@kebuntebumas.com
		Didit Setyaaji	082233453388	didit@kebuntebumas.com

Kementerian Pertanian www.pertanian.go.id

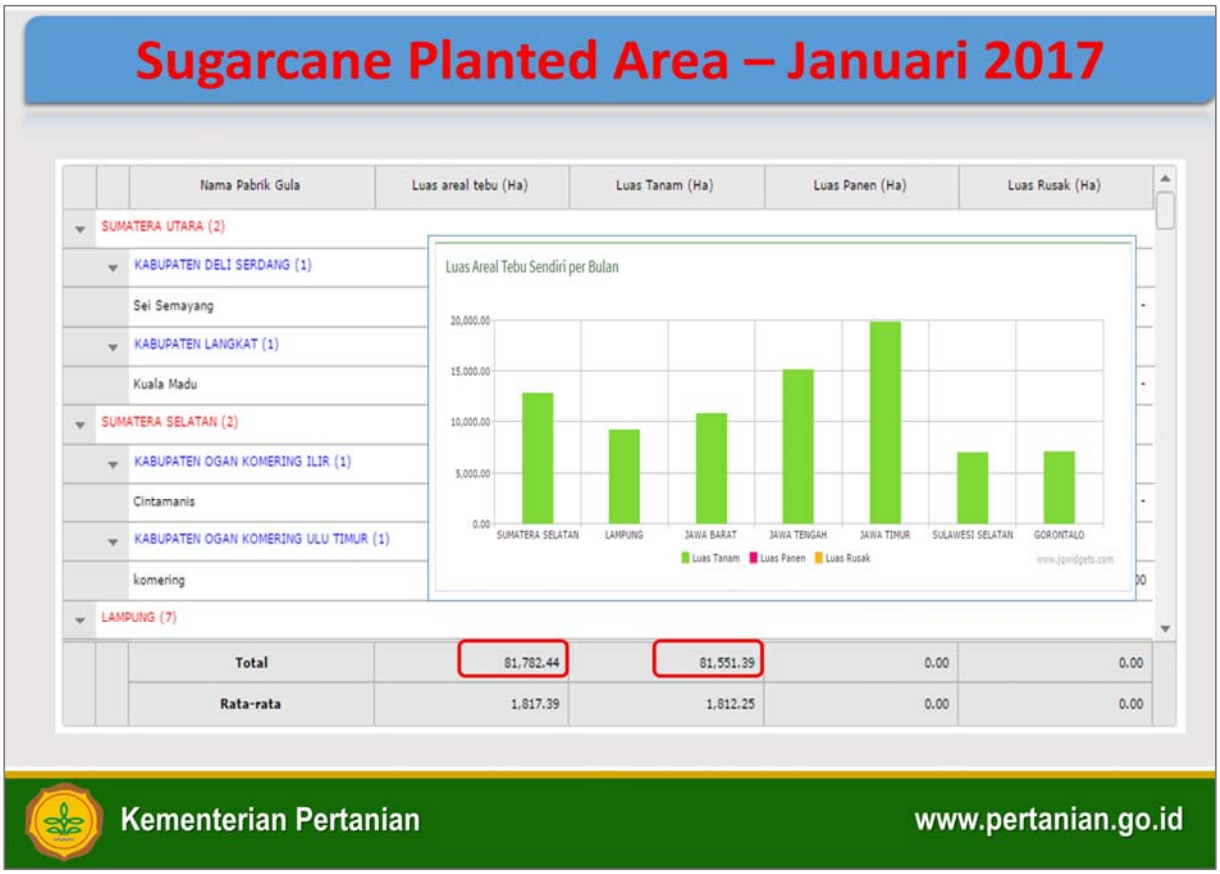
CONTACT PERSON OF SUGAR CANE FACTORIES/COMPANIES IN INDONESIA (4)

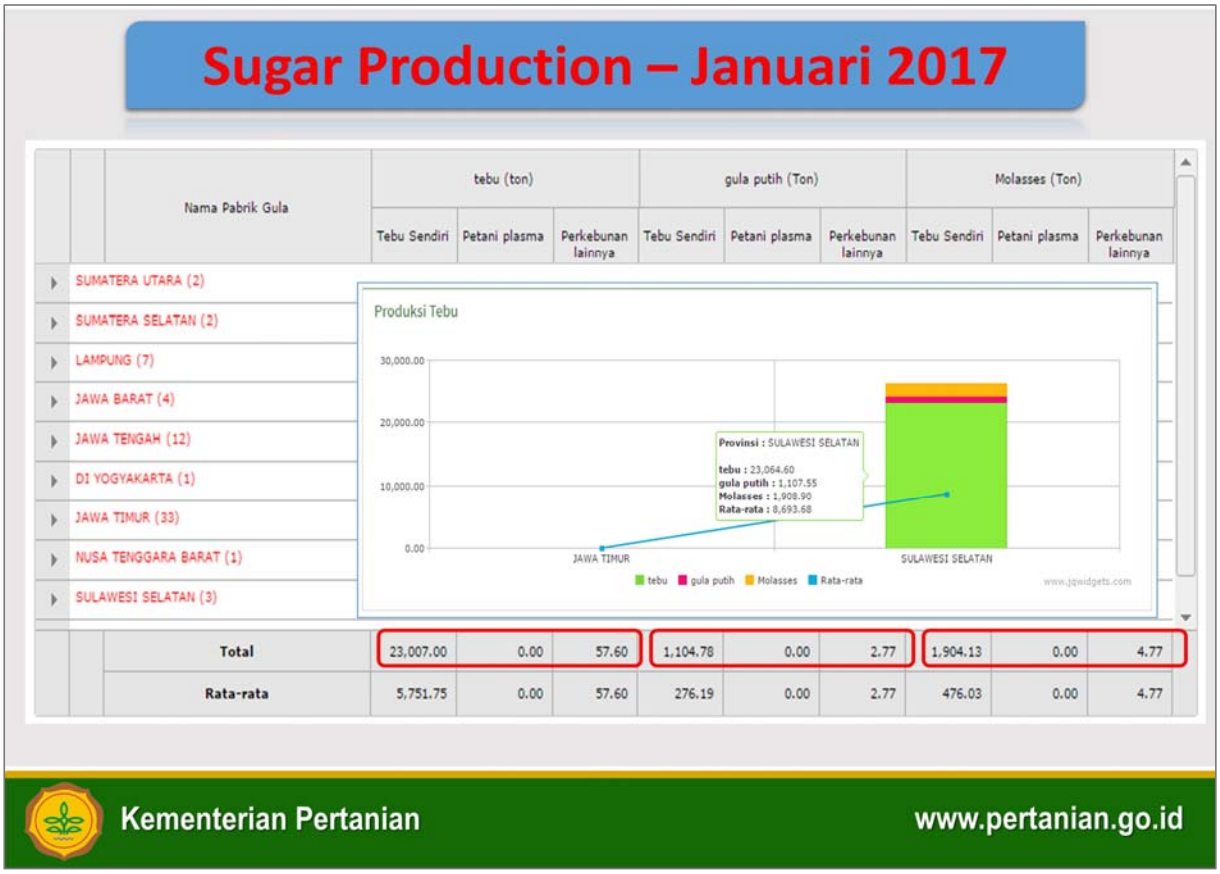
No	Sugar Cane Factories	PIC	Mobile Phone	Email
		PTPN X		
	Kantor Direksi	Daudana Dwi P	081553204149	daudara.dp@ptpn10.co.id
49	PG. Mojopanggong	Deddy Praditya Saputra	085259045054	deddy.praditya@gmail.com
50	PG. Djombang Baru	Punto Laksono Jati, DP	082132395911	dewopoento@gmail.com
51	PG. Lestari	Ahmad Shodiq Ali Mubarok	082231035940	ahmadshodiq0410@yahoo.com
52	PG. Ngadirejo	Sukris Tricahyono	085217093520	sukrisn10@gmail.com
53	PG Gempolkrep	Mashudiana	081234455893	mashudiana_n10@yahoo.com
54	PG. Mertjan	Ulin Nashihul Husna	081336988884	ulin.nashihulhusna@gmail.com
55	PG Watoetulis	Bany Mukhibin L	082131346344	uqimudien@gmail.com
56	PG. Pesantren Baru	Dita Widi Atmaja	082140121382	dita.viro@gmail.com
57	PG. Kremboong	Faizal Dony Rifai	082142760990	donnyrif@gmail.com
58	PG. Tjoekir	Fauzi Nurdiana	081313212165	uzie1903@gmail.com
59	PG. Toelangan	Closed		
		PT. LAJU PERDANA INDAH		
60	PG. Komering	Sujarwadi	081369064173	sujarwadi@lajuperdana.com
61	PG. Pakis Baru	Rikie A	085641414000	
		PT. SUGAR GROUP COMP		
62	Gula Putih Mataram			
63	Sweet Indolampung			
64	Indolampung Perkasa			

Kementerian Pertanian www.pertanian.go.id

WEB PAGE (SUGARCANE DATA REPORTING SYSTEM)
http://datatebu.pertanian.go.id/naisvi

Kementerian Pertanian www.pertanian.go.id


Sugarcane Planted Area – Januari 2017
Nama Pabrik Gula
Luas areal tebu (Ha)
Luas Tanam (Ha)
Luas Panen (Ha)
Luas Rusak (Ha)
SUMATERA UTARA (2)
KABUPATEN DELI SERDANG (1)
Sei Semayang
KABUPATEN LANGKAT (1)
Kuala Madu
SUMATERA SELATAN (2)
KABUPATEN OGAN KOMERING ILIR (1)
Cintamanis
KABUPATEN OGAN KOMERING ULU TIMUR (1)
komering
LAMPUNG (7)
Luas Areal Tebu Sendiri per Bulan
20,000.00
15,000.00
10,000.00
5,000.00
0.00
SUMATERA SELATAN
LAMPUNG
JAWA BARAT
JAWA TENGAH
JAWA TIMUR
SULAWESI SELATAN
GORONTALO
Luas Tanam
Luas Panen
Luas Rusak
Total
81,782.44
81,551.39
0.00
0.00
Rata-rata
1,817.39
1,812.25
0.00
0.00
Kementerian Pertanian
www.pertanian.go.id


Sugar Production – Januari 2017
Nama Pabrik Gula
tebu (ton)
gula putih (Ton)
Molasses (Ton)
Tebu Sendiri
Petani plasma
Perkebunan lainnya
SUMATERA UTARA (2)
SUMATERA SELATAN (2)
LAMPUNG (7)
JAWA BARAT (4)
JAWA TENGAH (12)
DI YOGYAKARTA (1)
JAWA TIMUR (33)
NUSA TENGGARA BARAT (1)
SULAWESI SELATAN (3)
Produksi Tebu
30,000.00
20,000.00
10,000.00
0.00
Provinsi : SULAWESI SELATAN
tebu : 23,064.60
gula putih : 1,107.55
Molasses : 1,908.90
Rata-rata : 8,693.68
JAWA TIMUR
SULAWESI SELATAN
tebu
gula putih
Molasses
Rata-rata
Total
23,007.00
0.00
57.60
1,104.78
0.00
2.77
1,904.13
0.00
4.77
Rata-rata
5,751.75
0.00
57.60
276.19
0.00
2.77
476.03
0.00
4.77
Kementerian Pertanian
www.pertanian.go.id

ONLINE DATA ENTRY OF SUGAR CANE FROM FACTORIES/COMPANIES FROM 1 JANUARY TO 27 MARCH 2017 (1)

No.		Sugar Cane Factories	Number of Factories	Province	Data Entry											
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1		**PTPN II**	2													
	1	Sei Semayang		Sumatera Utara	-	-	-									
	2	Kuala Madu		Sumatera Utara	-	-	-									
2		**PTPN VII**	2													
	1	Bungamayang		Lampung	√	√	√									
	2	Cintamanis		Sumatera Selatan	-	-	√									
3		**PTPN IX**	8													
	1	Jatibarang		Jawa Tengah	√	√	√									
	2	Pangka		Jawa Tengah	√	√	√									
	3	Sumberharjo		Jawa Tengah	-	-	-									
	4	Sragi		Jawa Tengah	√	√	-									
	5	Rendeng		Jawa Tengah	-	-	-									
	6	Mojo		Jawa Tengah	√	√	√									
	7	Tasikmadu		Jawa Tengah	√	√	√									
	8	Gondang Baru		Jawa Tengah	-	-	-									
4		**PTPN X**	11													
	1	Watoetoelis		Jawa Timur	√	√	-									
	2	Toelangan		Jawa Timur	Closed in 2017											
	3	Kremboong		Jawa Timur	√	√	√									
	4	Gempolkrep		Jawa Timur	√	√	√									
	5	Djombang Baru		Jawa Timur	√	√	-									
	6	Tjoekir		Jawa Timur	√	√	-									
	7	Lestari		Jawa Timur	√	√	-									
	8	Meritjan		Jawa Timur	√	√	-									
	9	Pesantren Baru		Jawa Timur	√	√	-									
	10	Ngadiredjo		Jawa Timur	√	√	-									
	11	Modjopanggoong		Jawa Timur	√	√	-									
5		**KUASA DIREKSI PTPN X**														
	1	Bone	3	Sulawesi Selatan	√	√	√									
	2	Camming		Sulawesi Selatan	√	-	-									
	3	Takalar		Sulawesi Selatan	√	√	√									

Kementerian Pertanian www.pertanian.go.id

ONLINE DATA ENTRY OF SUGAR CANE FROM FACTORIES/COMPANIES FROM 1 JANUARY TO 27 MARCH 2017 (2)

No.		Sugar Cane Factories	Number of Factories	Province	Data Entry											
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
6		**PTPN XI**	16													
	1	Soedhono		Jawa Timur	√	√	√									
	2	Poerwodadie		Jawa Timur	√	√	√									
	3	Redjosarie		Jawa Timur	√	√	√									
	4	Pagottan		Jawa Timur	√	√	√									
	5	Kanigoro		Jawa Timur	√	√	-									
	6	Kedawoeng		Jawa Timur	√	√	√									
	7	Wonolangan		Jawa Timur	√	√	√									
	8	Gending		Jawa Timur	√	√	√									
	9	Padjarakan		Jawa Timur	√	√	√									
	10	Djatiroto		Jawa Timur	√	√	√									
	11	Semboro		Jawa Timur	√	√	√									
	12	Wringinanom		Jawa Timur	√	√	√									
	13	Olean		Jawa Timur	√	√	-									
	14	Pandjie		Jawa Timur	√	√	√									
	15	Assembagoes		Jawa Timur	√	√	√									
	16	Pradjekan		Jawa Timur	√	√	√									
7		**PT. RNI**	8													
a.		**PT. PG. Rajawali I**														
	1	Krebet Baru		Jawa Timur	√	√	√									
	2	Rejoagung Baru		Jawa Timur	√	√	√									
b.		**PT. Candi**														
		Candi		Jawa Timur	-	√	√									
c.		**PT. PG. Rajawali II**														
	1	Sindang Laut		Jawa Barat	√	√	√									
	2	Karang Suwung		Jawa Barat	Closed in 2017											
	3	Tersana baru		Jawa Barat	√	√	√									
	4	Jatitujuh		Jawa Barat	√	√	√									
	5	Subang		Jawa Barat	√	√	√									

Kementerian Pertanian www.pertanian.go.id

ONLINE DATA ENTRY OF SUGAR CANE FROM FACTORIES/COMPANIES FROM 1 JANUARY TO 27 MARCH 2017 (3)

No.	Sugar Cane Factories	Number of Factories	Province	Data Entry											
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
8	PT. MADUBARU	1													
	1 Madukismo		D.I. Yogyakarta	-	√	-									
9	PT. KEBON AGUNG	2													
	1 Kebon Agung		Jawa Timur	√	√	√									
	2 Trangkil		Jawa Tengah	-	√	-									
10	PT. INDUSTRI GULA NUSANTARA	1	Jawa Tengah	-	-	-									
11	PT. GUNUNG MADU PLANTATION	1	Lampung	-	-	-									
12	SUGAR GROUPS COMPANIES	3													
	1 Gula Putih Mataram		Lampung	-	-	-									
	2 Sweet Indolampung		Lampung	-	-	-									
	3 Indolampung Perkasa		Lampung	-	-	-									
13	PT. PSMI	1	Lampung	-	-	-									
14	PT. LAJU PERDANA INDAH	2													
	1 Pakis Baru		Jawa Tengah	-	√	√									
	2 Komering		Sumatera Selatan	√	-	√									
15	PT. PG. Gorontalo	1	Gorontalo	√	√	√									
16	PT Gendhis Multi Manis	1	Jawa Tengah	-	√	-									
17	PT. Adikarya Gemilang /Pesawahan	1	Lampung	-	-	-									
18	PT. KTM Lamongan	1	Jawa Timur	√	√	√									
	Total	65													

Kementerian Pertanian www.pertanian.go.id

PROGRESS OF THE PROJECT IMPLEMENTATION IN 2017

- January-March 2017:
  - almost 70% of sugar cane factories/companies reported the sugarcane data monthly through mobile app
  - CADIS has supervised 50 of 65 factories to improve the quality and reporting data on-time
- April-June 2017:
  - CADIS continue to supervise 15 of 65 factories to improve the quality and reporting data system
- July-December 2017:
  - Monitoring and evaluation of the reporting system and improving the quality of data reporting
  - Data validation and verification

Kementerian Pertanian www.pertanian.go.id

SUSTAINABILITY OF THE PROJECT IMPLEMENTATION

- Integration of the system into national statistics system (MoA and BPS) on the following activities:
  - Methodology of data collection
  - Data validation and verification
  - Reporting system
- Maintaining the colaboration/partnership among the Sugarcane Companies and Goverment Offices in Center, Province and District area to improve the online data reporting system
- Regular monitoring, evaluation,supervision and training for the officers in sugarcane factories/companies on data collection and reporting system

Kementerian Pertanian www.pertanian.go.id

LOCAL TRAINING/WORKSHOP
SOCIALIZATION OF ONLINE NATIONAL SUGARCANE DATA REPORTING SYSTEM FOR SUGARCANE FACTORIES/ COMPANIES
SURABAYA, EAST JAVA , INDONESIA
NOVEMBER 2016

Kementerian Pertanian www.pertanian.go.id


PRACTICAL TRAINING OF USING MOBILE APPICATION
FOR SUGARCANE FACTORIES' OFFICERS
ENGLISH NEWS SERVICE
@TVRINasional
ONLINE SYSTEM
SOCIALIZATION OF ONLINE NATIONAL SUGAR DATA SYSTEM
SURABAYA, EAST JATIM
Kementerian Pertanian
www.pertanian.go.id


APPRECIATION FOR EPIS, KOREA
ENGLISH NEWS SERVICE
@TVRINasional
Kementerian Pertanian
www.pertanian.go.id

SECOND WORKSHOP
SOCIALIZATION OF ONLINE NATIONAL SUGARCANE DATA REPORTING SYSTEM FOR GOVERMENT OFFICERS
SERPONG, BANTEN , INDONESIA
DECEMBER, 2016

Kementerian Pertanian www.pertanian.go.id

Terima kasih
Thank You
감사합니다
Kam sa ham nida

Kementerian Pertanian www.pertanian.go.id

KOREA'S GLOBAL ODA FORUM FOR
SUSTAINABLE AGRICULTURAL DEVELOPMENT

Presentation 3-3

Korea's ICT related Agricultural Projects and Lessons Learned

Lee, Sang Hun
(EPIS)

KREI

EPIS 농림수산식품교육문화정보원

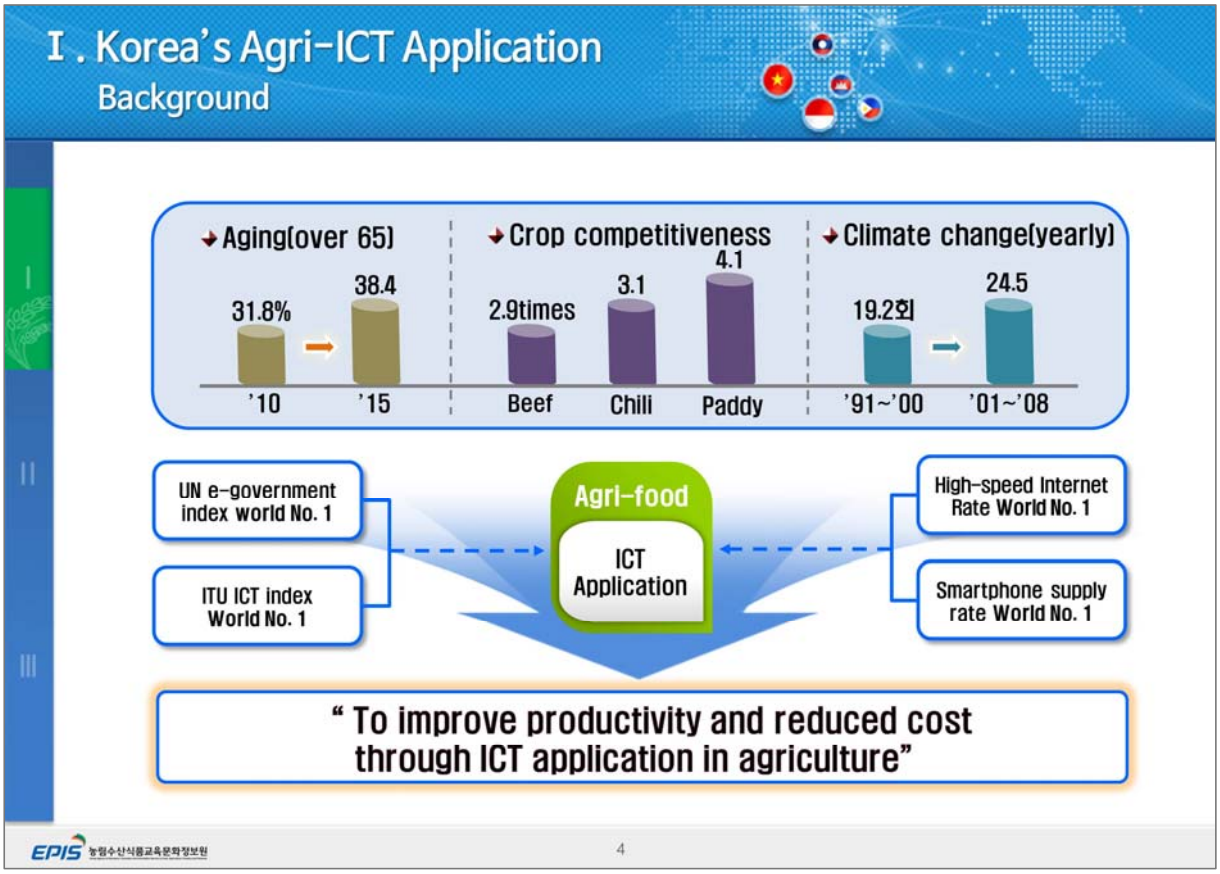
Korea's ICT related Agricultural Projects and Lessons Learned

2017. 4. 4.

Sanghun Lee

Table of Contents


1. Korea's Agri-ICT Application
3


I . Korea's Agri-ICT Application
Background
Aging(over 65)
31.8%
38.4
'10
'15
Crop competitiveness
2.9times
3.1
4.1
Beef
Chili
Paddy
Climate change(yearly)
19.2회
24.5
'91~'00
'01~'08
UN e-government index world No. 1
ITU ICT index World No. 1
Agri-food
ICT Application
High-speed Internet Rate World No. 1
Smartphone supply rate World No. 1
" To improve productivity and reduced cost through ICT application in agriculture"
EPIS 농림수산식품교육문화정보원
4

Ⅰ. Korea's Agri-ICT Application
Smart Farm

Automated farm to provide suitable and sustainable environment for agri-production without restriction of external factors

Solution for limitation of traditional agriculture by reducing resources (fertilizer, water, etc.) and enhancing productivity of quality products

Ⅰ. Korea's Agri-ICT Application
Smart Farm

Types of Smart Farm		Examples and Technology
Horticulture Environment Control		Automated air circulation, environment monitoring (temperature, humidity, CO2), nutrition supply using PC or mobile to provide ideal environment for crop production
Livestock Environment Control		Automated monitoring (temperature, humidity), feeding and water supply management using PC or mobile for livestock production
Smart Orchard		Automated monitoring (temperature, humidity, climate), water and disease & insect control using PC or mobile for fruit production

Ⅰ. Korea's Agri-ICT Application
Smart Farm

Horticulture

- Improved production (25.2%)
- Reduced employment cost (8.6%)
- Improved yield (12.0%)

Livestock (Swine)

- Improved productivity (MSY 0.5%)
- Reduced Cost (Feeding 7.0%)
- Reduced Labor (2.7%)

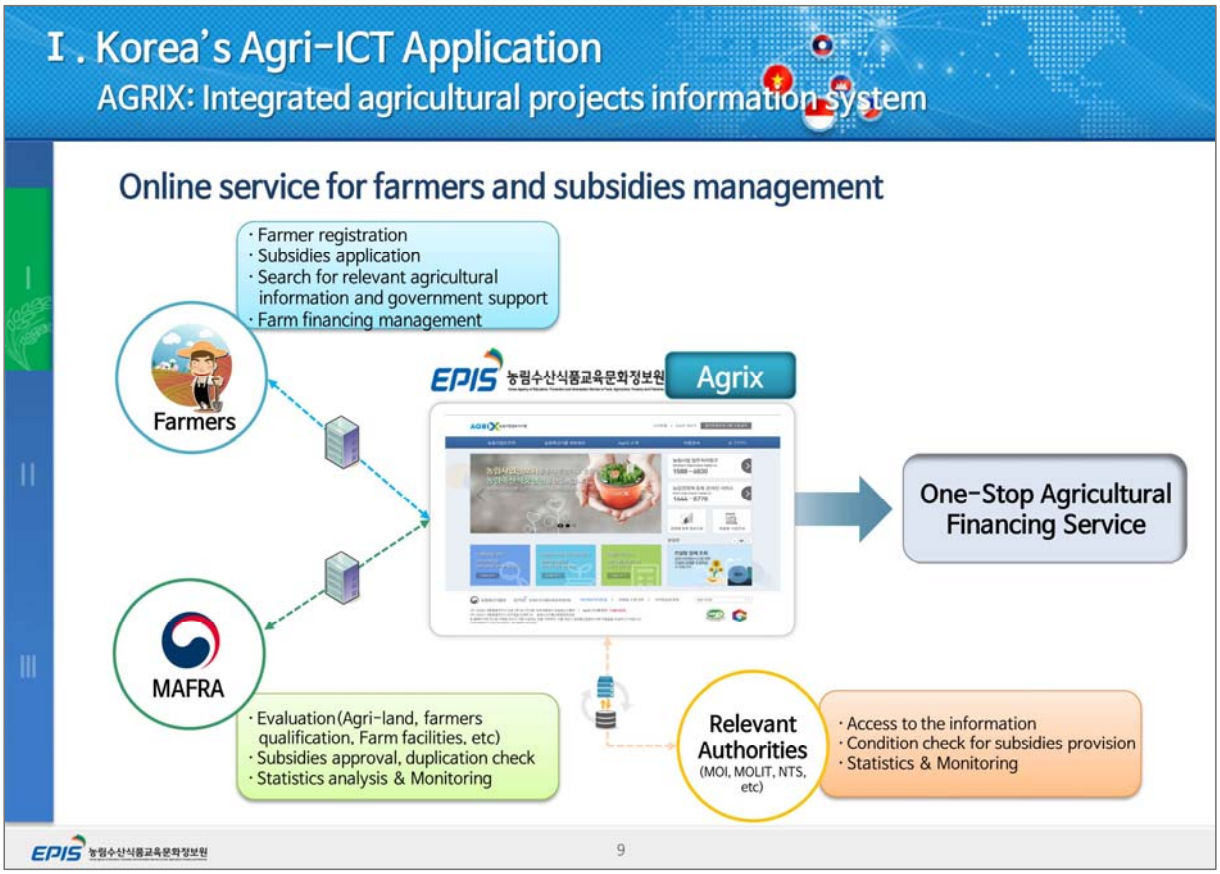
Ⅰ. Korea's Agri-ICT Application
Smart Farm

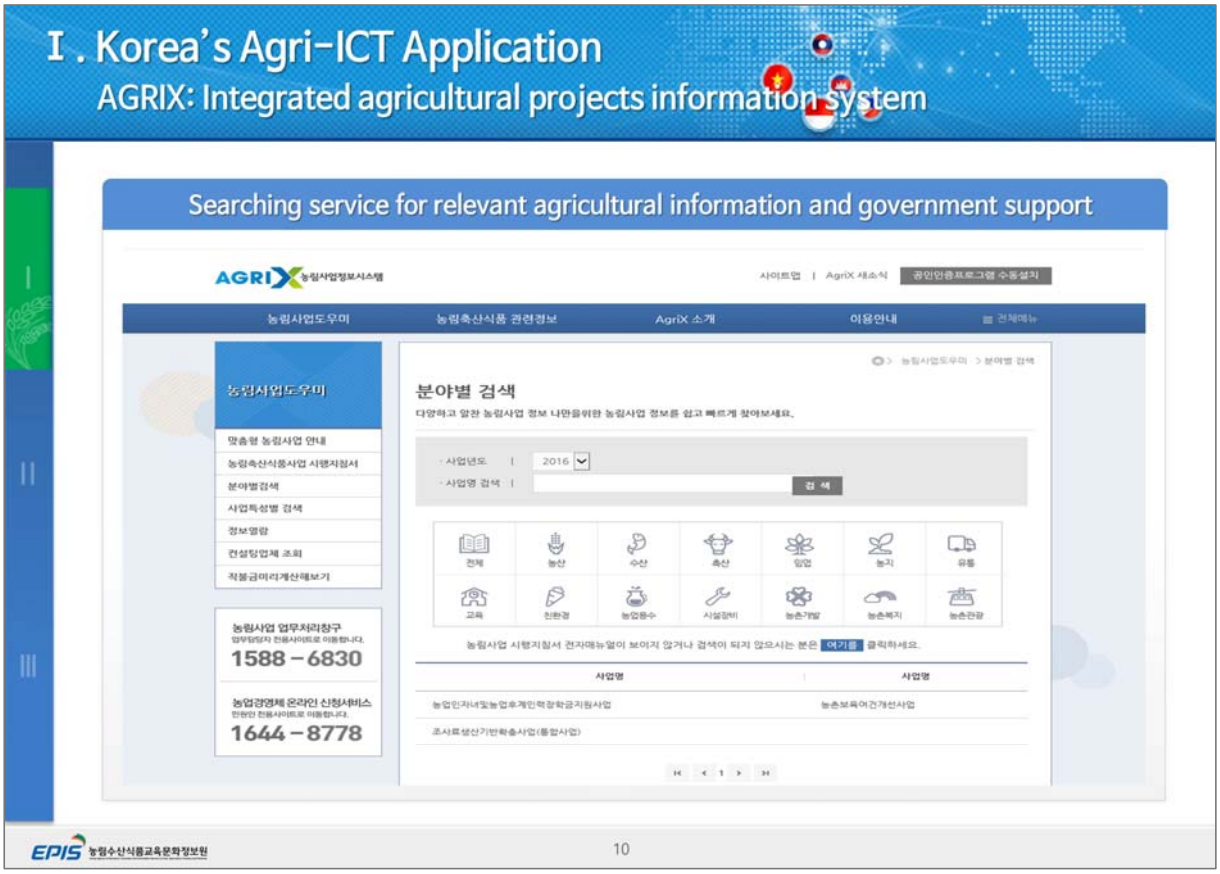
Gross production per unit area by category (kg)

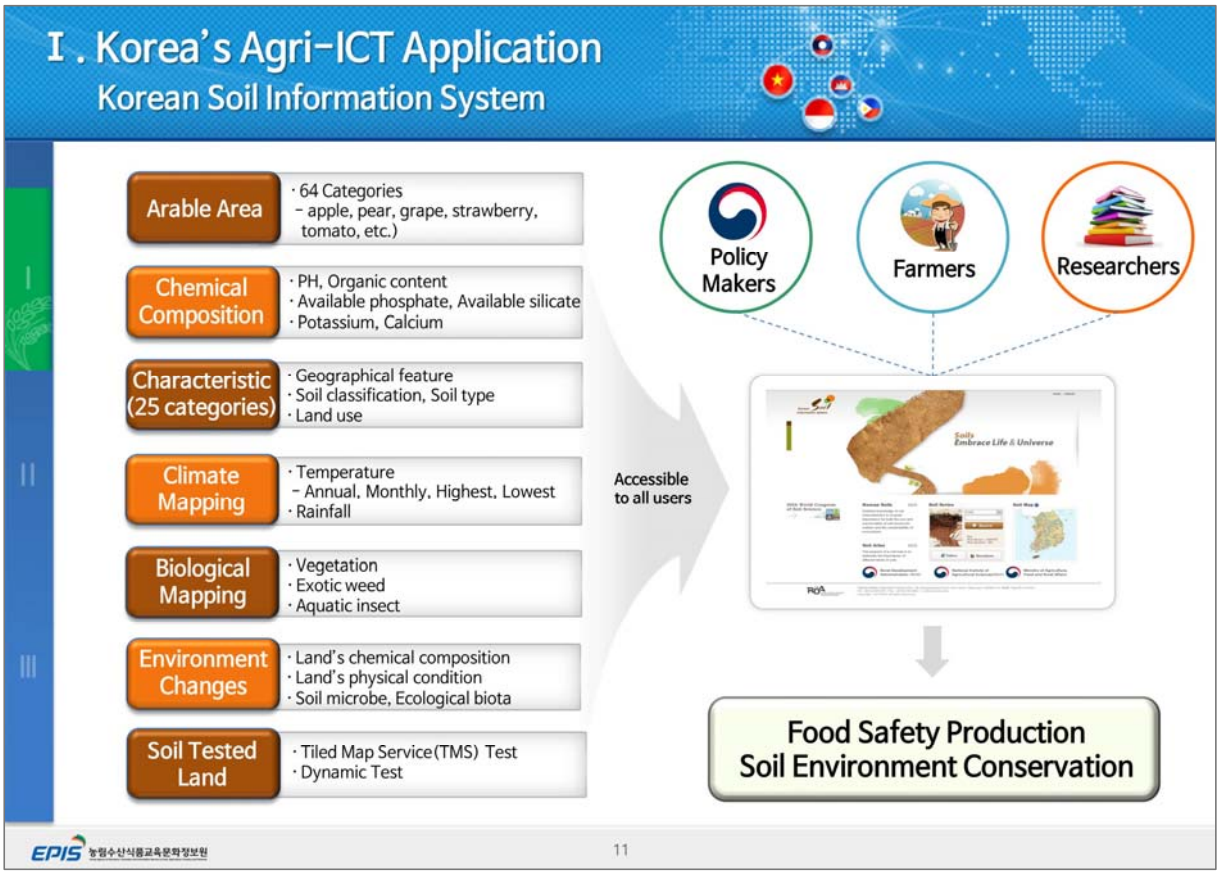
Category	Smart Farm			Smart Farm Average(A)	General Farm Average(B)	Productivity (A/B)
	Single	Interlock	Glasshouse			
Tomato	13,878	18,214	38,695	17,732	7,072	251%
Paprika	-	14,103	19,663	15,294	10,763	142%
Strawberry	2,901	3,655	-	4,805	3,061	157%
Watermelon	6,806	-	-	6,680	4,199	159%
Oriental melon	4,117	-	-	4,222	2,900	146%

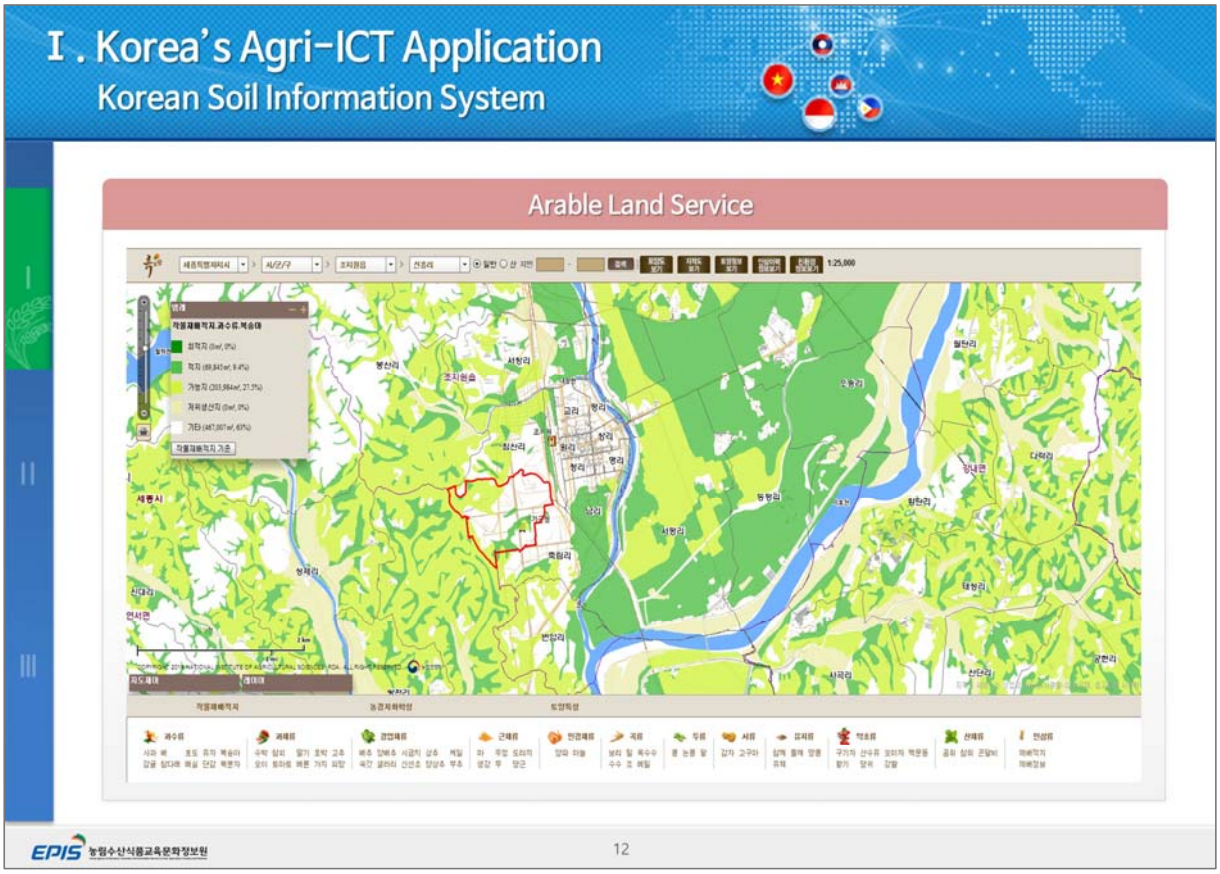
Gross margin per 10a by category (KRW1,000)

Category	Smart Farm			Smart Farm Average(A)	General Farm Average(B)	Productivity (A/B)
	Single	Interlock	Glasshouse			
Tomato	29,130	35,849	50,137	34,251	25,673	133%
Paprika	-	44,539	63,769	48,659	42,430	115%
Strawberry	25,560	19,663	-	24,717	22,123	112%
Watermelon	5,553	-	-	5,384	5,059	106%
Oriental melon	10,480	-	-	11,642	9,735	120%


I . Korea's Agri-ICT Application
AGRIX: Integrated agricultural projects information system
Online service for farmers and subsidies management
· Farmer registration
· Subsidies application
· Search for relevant agricultural information and government support
· Farm financing management
Farmers
EPIS 농림수산식품교육문화정보원
Agrix
One-Stop Agricultural Financing Service
MAFRA
· Evaluation(Agri-land, farmers qualification, Farm facilities, etc)
· Subsidies approval, duplication check
· Statistics analysis & Monitoring
Relevant Authorities
(MOI, MOLIT, NTS, etc)
· Access to the information
· Condition check for subsidies provision
· Statistics & Monitoring
EPIS 농림수산식품교육문화정보원
9


I . Korea's Agri-ICT Application
AGRIX: Integrated agricultural projects information system
Searching service for relevant agricultural information and government support
AGRIX 농림사업정보시스템
농림사업도우미
농림축산식품 관련정보
AgriX 소개
이용안내
분야별 검색
1588-6830
1644-8778
EPIS 농림수산식품교육문화정보원
10


I . Korea's Agri-ICT Application
Korean Soil Information System
Arable Area
· 64 Categories
– apple, pear, grape, strawberry, tomato, etc.)
Chemical Composition
· PH, Organic content
· Available phosphate, Available silicate
· Potassium, Calcium
Characteristic (25 categories)
· Geographical feature
· Soil classification, Soil type
· Land use
Climate Mapping
· Temperature
– Annual, Monthly, Highest, Lowest
· Rainfall
Biological Mapping
· Vegetation
· Exotic weed
· Aquatic insect
Environment Changes
· Land's chemical composition
· Land's physical condition
· Soil microbe, Ecological biota
Soil Tested Land
· Tiled Map Service(TMS) Test
· Dynamic Test
Accessible to all users
Policy Makers
Farmers
Researchers
Food Safety Production
Soil Environment Conservation
EPIS 농림수산식품교육문화정보원
11


I . Korea's Agri-ICT Application
Korean Soil Information System
Arable Land Service
EPIS 농림수산식품교육문화정보원
12

Ⅰ. Korea's Agri-ICT Application
Okdab Agricultural Information System

Online publication service for agricultural information

Production

- **Agricultural Weather** → · Temperature, rainfall, humidity, wind · Regional real-time climate service
- **Farming Calendar** → · For 5 main vegetables (Spring onion, Chinese cabbage, Radish, Spinach, Chives) · Related publications service

Distribution

- **Real-time Auction Price**
  - · Bidding information
  - · Bidding price
  - · Bidding price analysis for each wholesale market
- **Market Price Survey**
  - · Wholesale price
  - · Retail price
  - · Imported price(Others)
  - · Imported price(China)
- **Agricultural Outlook**
  - · Intention to cultivate
  - · Sow/crop condition
  - · Harvest estimated

EPIS 농림수산식품교육문화정보원 Okdab

Publication

- · Accessible to all users
- · Data backup and monitoring
- · System maintenance
- · Daily data period

EPIS 농림수산식품교육문화정보원 13

Ⅰ. Korea's Agri-ICT Application
Okdab Agricultural Information System

Weather Service for Agriculture

EPIS 농림수산식품교육문화정보원 14

Ⅰ. Korea's Agri-ICT Application
Okdab Agricultural Information System

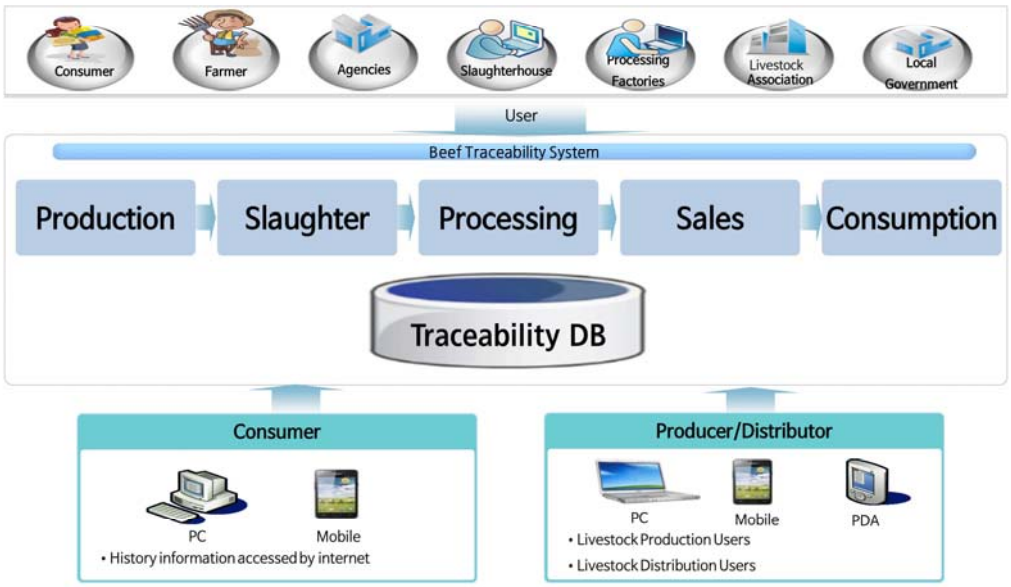
Distribution Service for Agriculture

Real-time Auction Price

Okdab Mobile

Ⅰ. Korea's Agri-ICT Application
Beef Traceability System

Historical tracking of information from farm-to-table



Ⅰ. Korea's Agri-ICT Application
Beef Traceability System

Historical Tracking Service with Cattle ID No.

Ⅰ. Korea's Agri-ICT Application
Beef Traceability System

Historical Tracking Service with Cattle ID No.

①Traceability System(Mobile) ②Data Entry (Cattle ID No.) ③Historical Data Extraction

Ⅱ. Agricultural ODA of Korea

19

Ⅱ. Agricultural ODA of Korea

Future Considerations

- ◆ Agricultural ODA budget in 2017 is 23.2 million dollars
- ◆ Korea is enhancing the ODA planning and budgeting process to increase its volume
  - It aims to keep increase on ODA/GNI ratio to 0.2% by 2020, and 0.3% by 2030
- ◆ Implementation of professional and competitive projects:
  - Private-public partnership and KAPEX

ODA budget in 2017

	2016			2017(e)		
	bilateral	multi	sum	bilateral	Multi	sum
Korea Total	1693.8	427.4	2121.2	1961.4	411.2	2372.6
Agricultural ODA (MAFRA)	14.3	5.3	19.6	15.6	7.6	23.2

Source: ODA implementation plan 2017
unit : million dollar

EPIS 농림수산식품교육문화정보원

20

Ⅱ. Agricultural ODA of Korea

Agricultural ODA takes 10.2% (199.7 million dollars) in total Korean ODA (2017)

◆ **Proportion of Agricultural ODA in total Korean ODA**

	2014	2015	2016	2017
Proportion	6.7%	5.0%	8.1%	10.2%

◆ **Agricultural part in Korean ODA takes third largest in 2017**

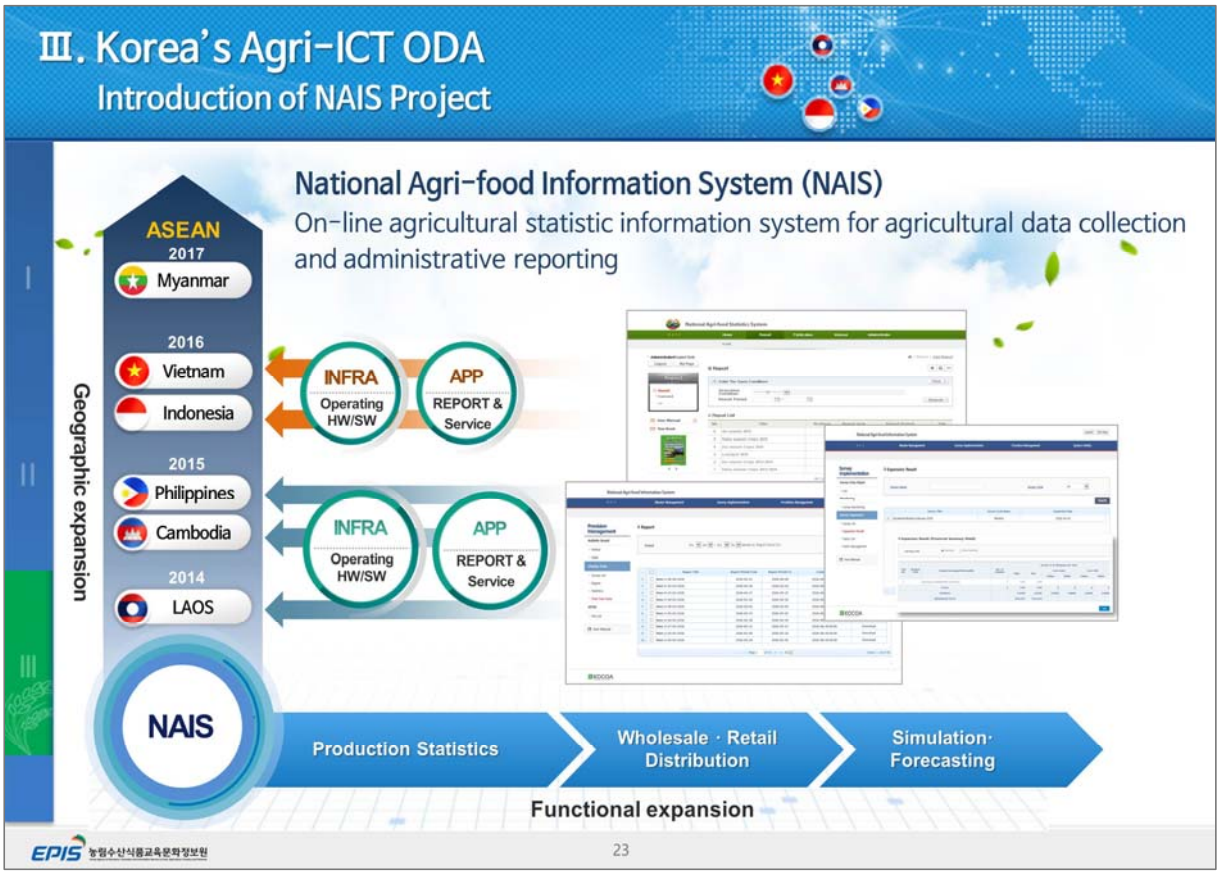
	Health	Transportation	Agriculture	Education	Water Resource
Proportion	11.0%	11.0%	10.2%	9.5%	9.5%
USD (in million)	215.7	215.7	199.7	186.3	185.5

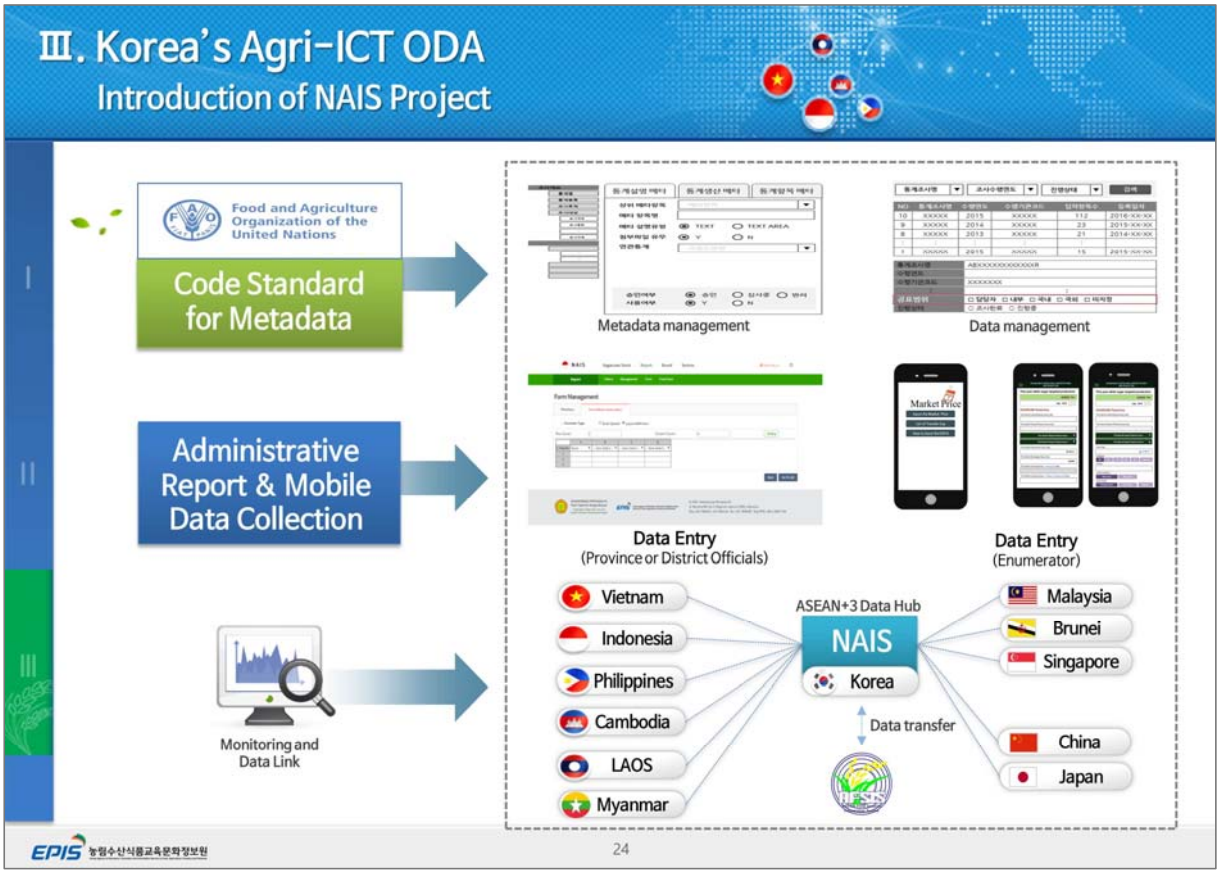
EPIS 농림수산식품교육문화정보원

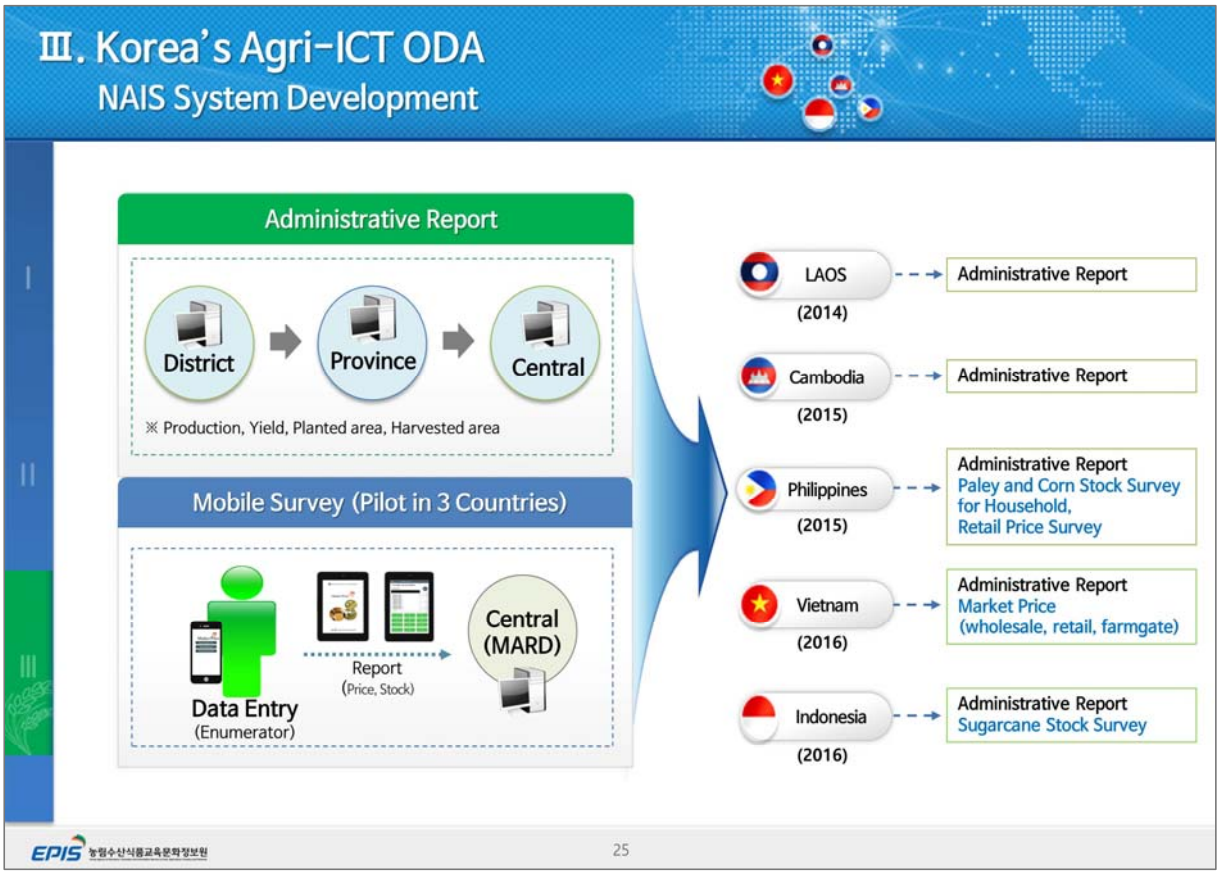
21

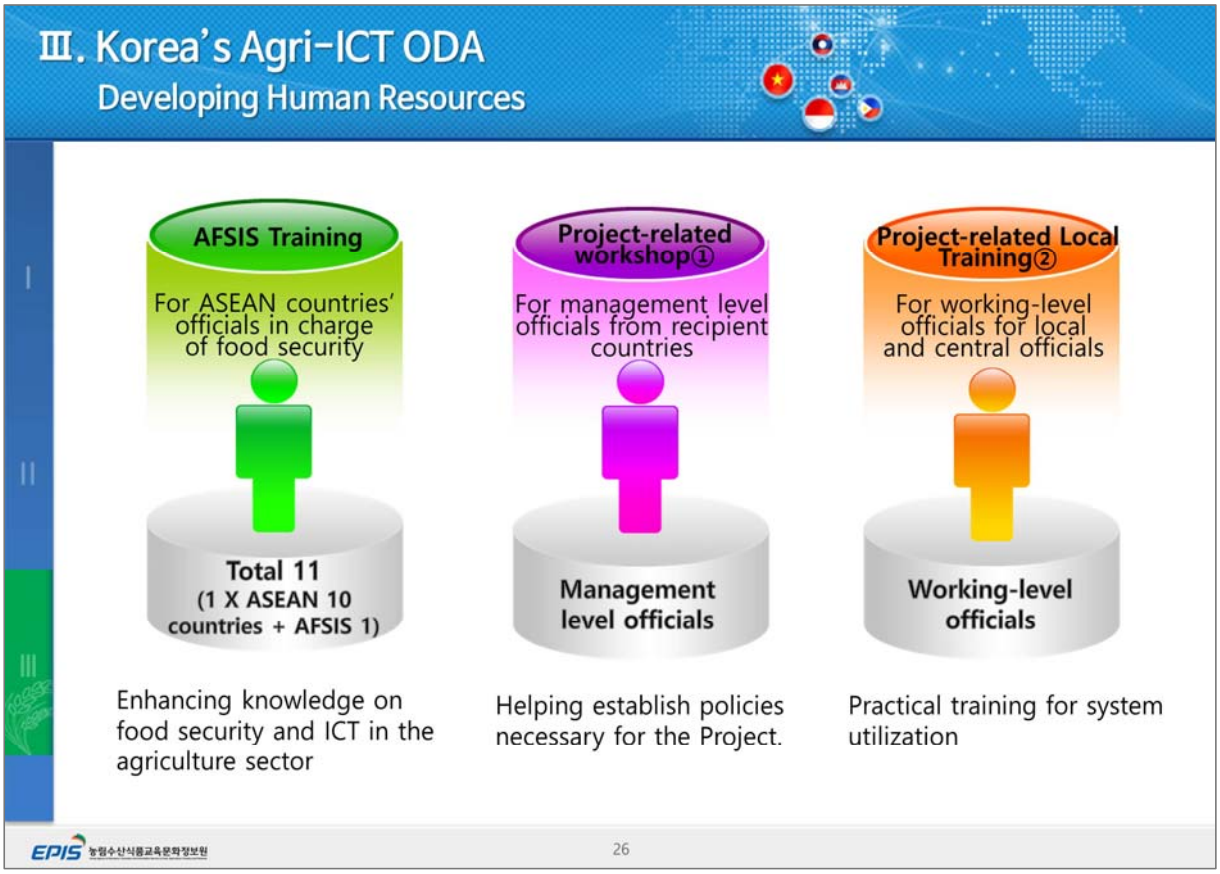
Ⅲ. Korea's Agri-ICT ODA

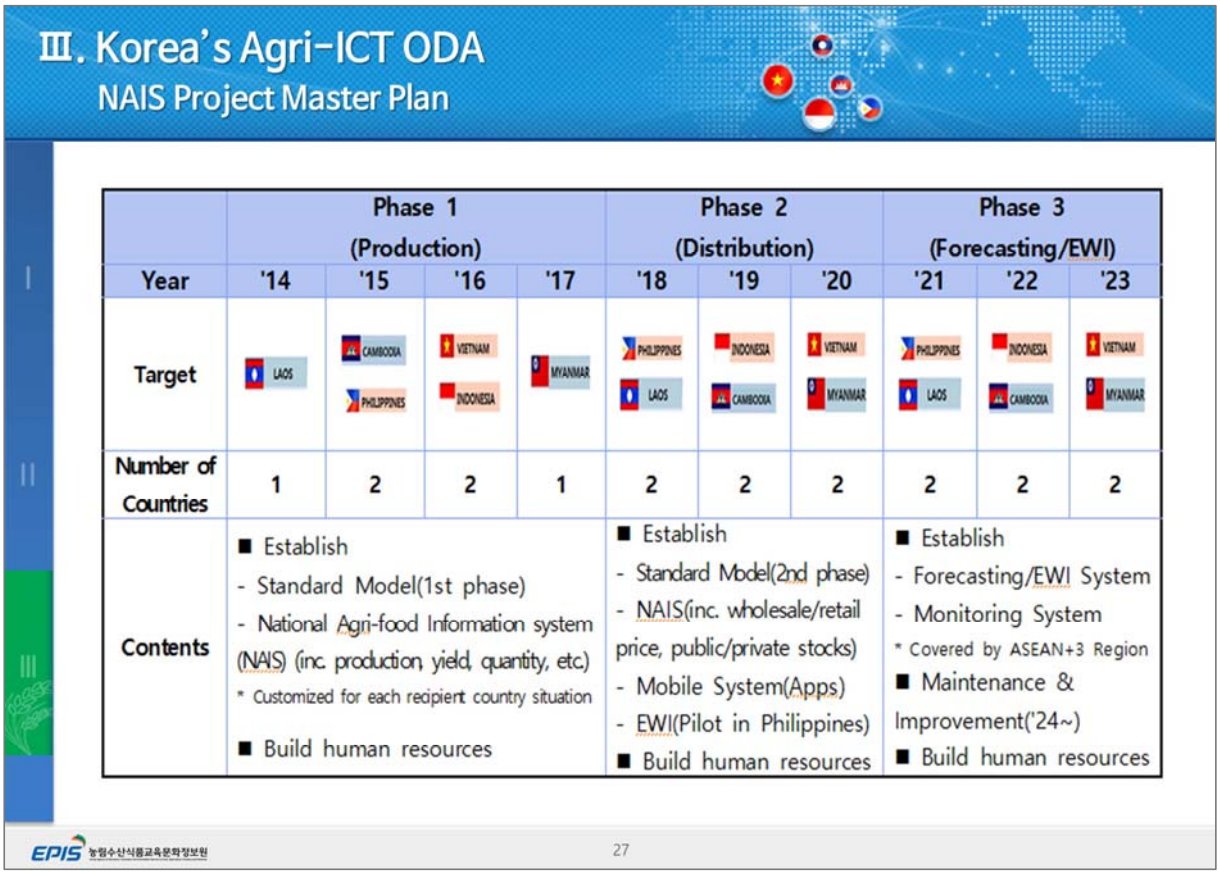
22

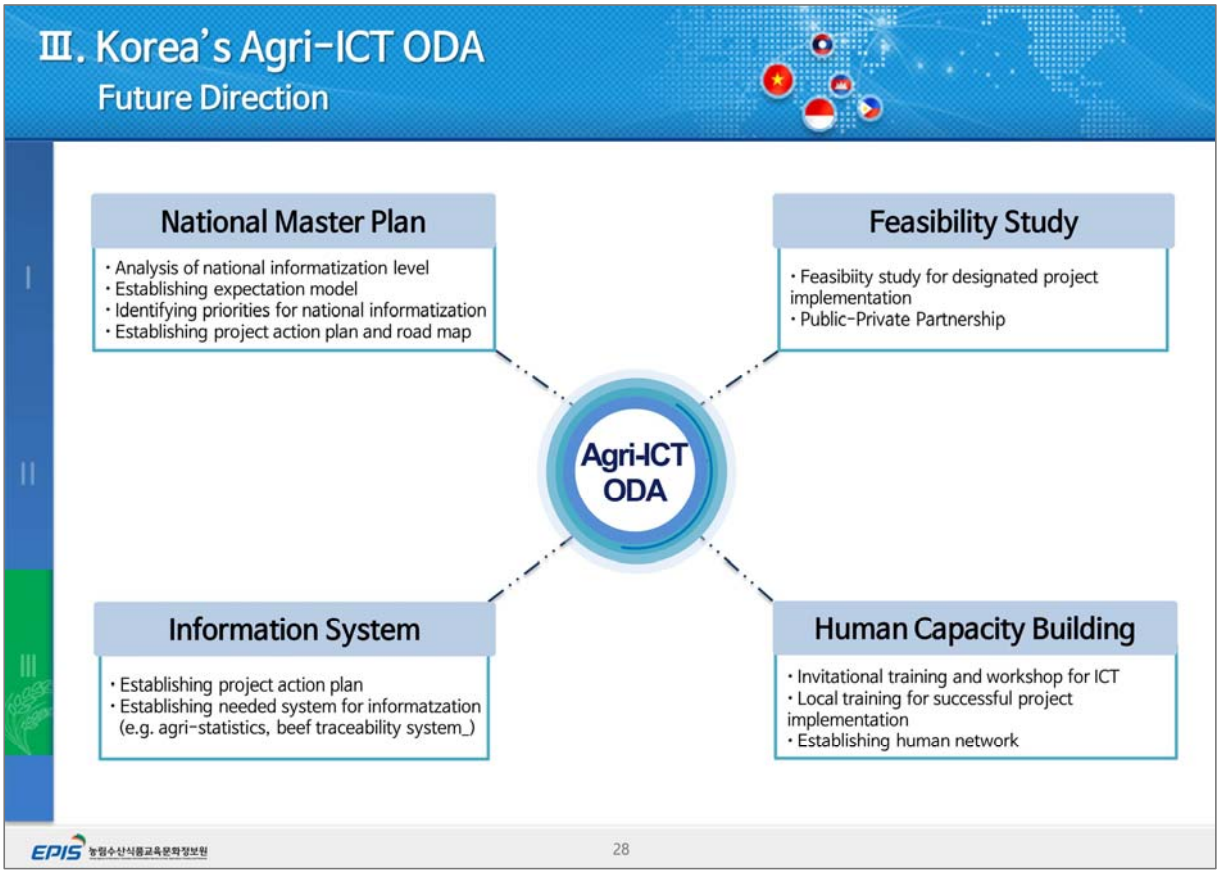

Ⅲ. Korea's Agri-ICT ODA
Introduction of NAIS Project
National Agri-food Information System (NAIS)
On-line agricultural statistic information system for agricultural data collection and administrative reporting
ASEAN
2017
Myanmar
2016
Vietnam
Indonesia
2015
Philippines
Cambodia
2014
LAOS
Geographic expansion
INFRA
Operating HW/SW
APP
REPORT & Service
INFRA
Operating HW/SW
APP
REPORT & Service
NAIS
Production Statistics
Wholesale · Retail Distribution
Simulation· Forecasting
Functional expansion
EPIS 농림수산식품교육문화정보원
23


Ⅲ. Korea's Agri-ICT ODA
Introduction of NAIS Project
Food and Agriculture Organization of the United Nations
Code Standard for Metadata
Administrative Report & Mobile Data Collection
Monitoring and Data Link
Metadata management
Data management
Data Entry
(Province or District Officials)
Data Entry
(Enumerator)
Market Price
ASEAN+3 Data Hub
NAIS
Korea
Data transfer
Vietnam
Indonesia
Philippines
Cambodia
LAOS
Myanmar
Malaysia
Brunei
Singapore
China
Japan
EPIS 농림수산식품교육문화정보원
24


Ⅲ. Korea's Agri-ICT ODA
NAIS System Development
Administrative Report
District
Province
Central
※ Production, Yield, Planted area, Harvested area
Mobile Survey (Pilot in 3 Countries)
Data Entry
(Enumerator)
Report
(Price, Stock)
Central
(MARD)
LAOS
(2014)
Administrative Report
Cambodia
(2015)
Administrative Report
Philippines
(2015)
Administrative Report
Paley and Corn Stock Survey
for Household,
Retail Price Survey
Vietnam
(2016)
Administrative Report
Market Price
(wholesale, retail, farmgate)
Indonesia
(2016)
Administrative Report
Sugarcane Stock Survey
EPIS 농림수산식품교육문화정보원
25


Ⅲ. Korea's Agri-ICT ODA
Developing Human Resources
AFSIS Training
For ASEAN countries' officials in charge of food security
Total 11
(1 X ASEAN 10 countries + AFSIS 1)
Enhancing knowledge on food security and ICT in the agriculture sector
Project-related workshop①
For management level officials from recipient countries
Management level officials
Helping establish policies necessary for the Project.
Project-related Local Training②
For working-level officials for local and central officials
Working-level officials
Practical training for system utilization
EPIS 농림수산식품교육문화정보원
26


Ⅲ. Korea's Agri-ICT ODA
NAIS Project Master Plan
Phase 1 (Production)
Phase 2 (Distribution)
Phase 3 (Forecasting/EWI)
Year
'14 '15 '16 '17 '18 '19 '20 '21 '22 '23
Target
LAOS
CAMBODIA
PHILIPPINES
VIETNAM
INDONESIA
MYANMAR
Number of Countries
1 2 2 1 2 2 2 2 2 2
Contents
■ Establish
- Standard Model(1st phase)
- National Agri-food Information system (NAIS) (inc. production, yield, quantity, etc.)
* Customized for each recipient country situation
■ Build human resources
■ Establish
- Standard Model(2nd phase)
- NAIS(inc. wholesale/retail price, public/private stocks)
- Mobile System(Apps)
- EWI(Pilot in Philippines)
■ Build human resources
■ Establish
- Forecasting/EWI System
- Monitoring System
* Covered by ASEAN+3 Region
■ Maintenance & Improvement('24~)
■ Build human resources
EPIS 농림수산식품교육문화정보원
27


Ⅲ. Korea's Agri-ICT ODA
Future Direction
National Master Plan
· Analysis of national informatization level
· Establishing expectation model
· Identifying priorities for national informatization
· Establishing project action plan and road map
Feasibility Study
· Feasibiity study for designated project implementation
· Public-Private Partnership
Agri-ICT ODA
Information System
· Establishing project action plan
· Establishing needed system for informatzation (e.g. agri-statistics, beef traceability system_)
Human Capacity Building
· Invitational training and workshop for ICT
· Local training for successful project implementation
· Establishing human network
EPIS 농림수산식품교육문화정보원
28

Thank you

EPIS 농림수산식품교육문화정보원

M·E·M·O

M·E·M·O

M·E·M·O

M·E·M·O