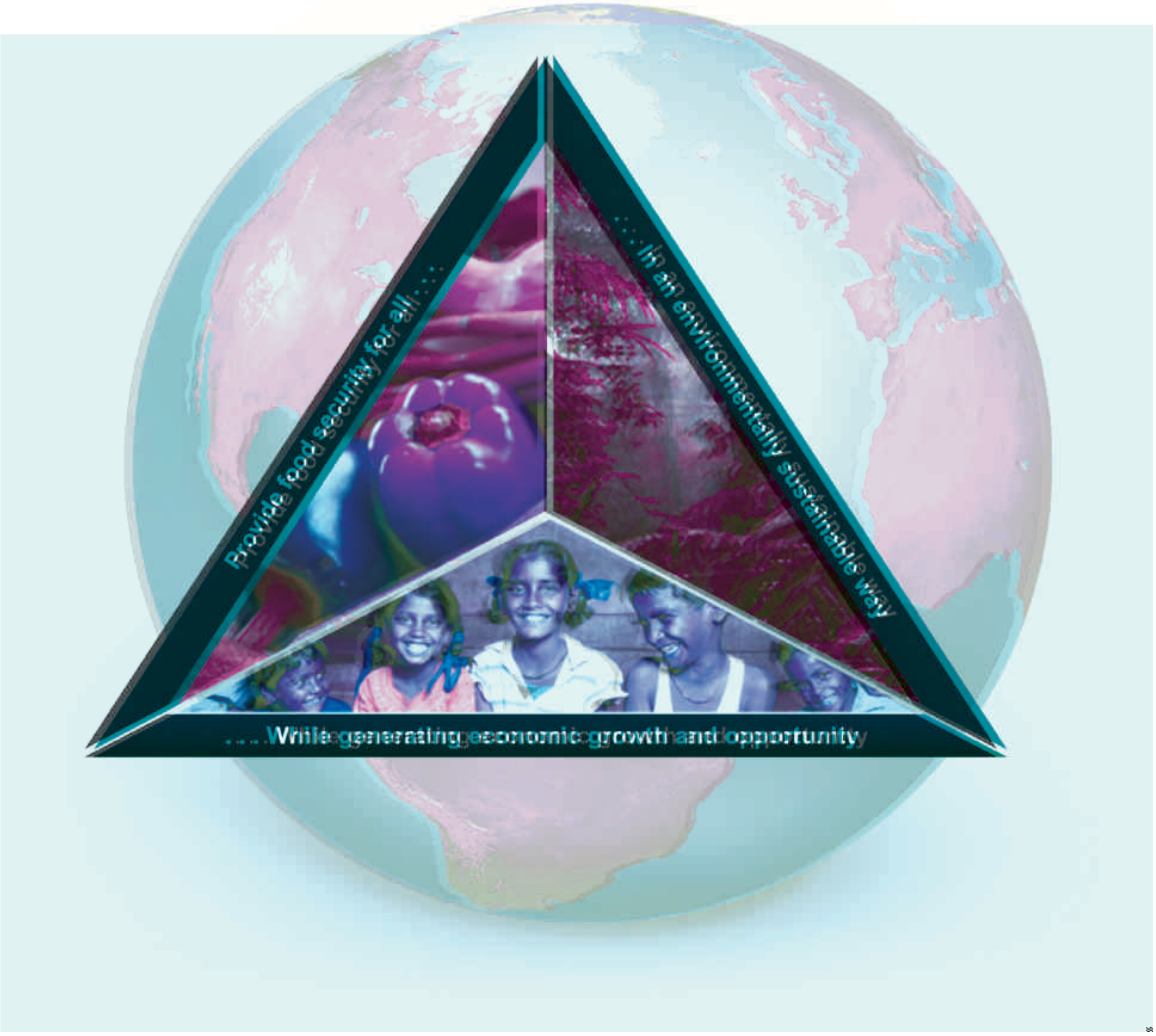
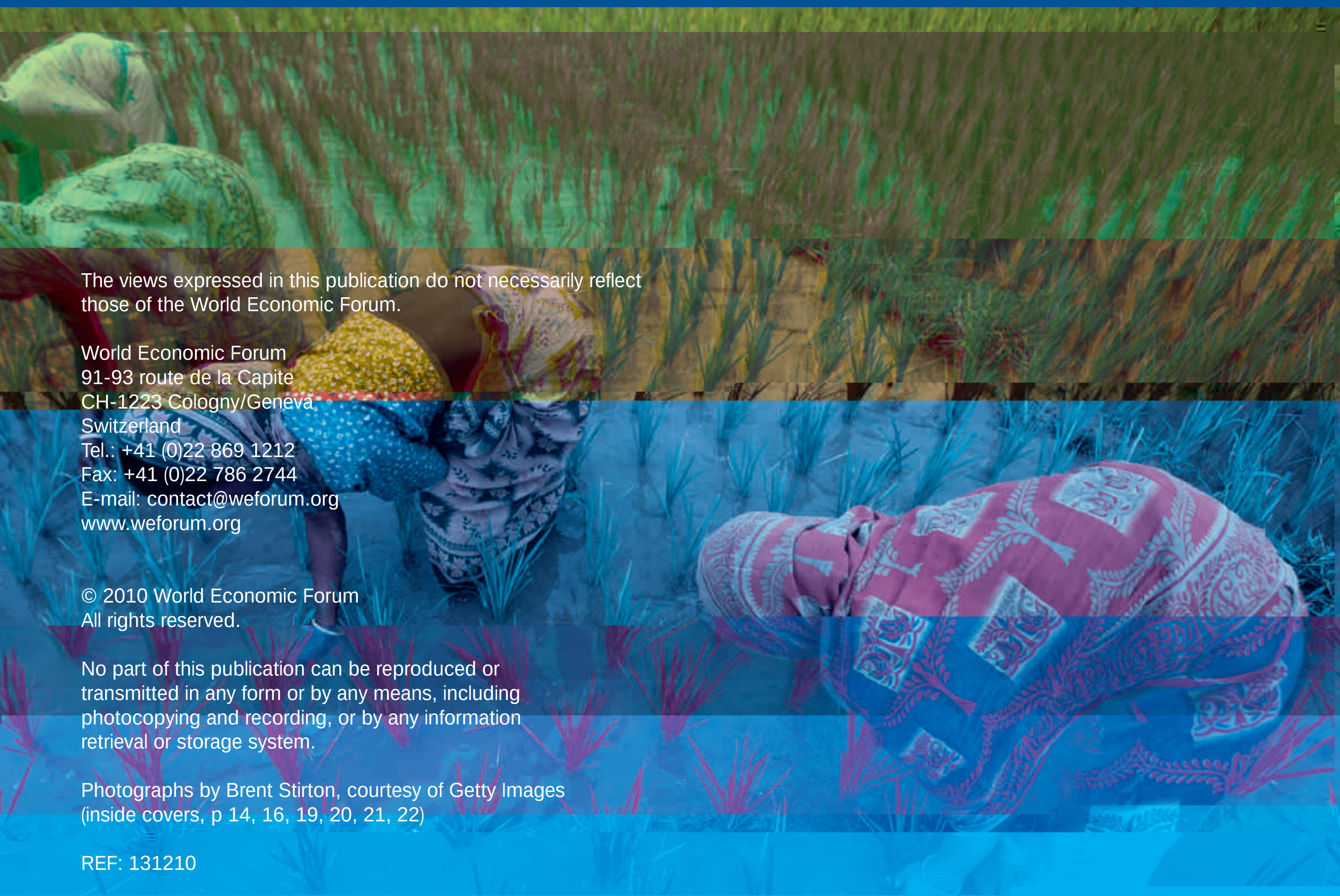
COMMITTED TO
IMPROVING THE STATE
OF THE WORLD

Realizing a New Vision for Agriculture:
A roadmap for stakeholders



Prepared in collaboration with McKinsey & Company



World Economic Forum
91-93 route de la Capite
CH-1223 Cologny/Geneva
Switzerland
Tel.: +41 (0)22 869 1212
Fax: +41 (0)22 786 2744
E-mail: contact@weforum.org
www.weforum.org

Photographs by Brent Stirton, courtesy of Getty Images (inside covers, p 14, 16, 19, 20, 21, 22)

REF: 131210

Š

-Œ§

‹

• ƒ

‹•’§ Ž

ŠŒ§

† • •

ƒ ‹ ƒ “Œ§

¬ ®Ž

“Œ§

†

ƒ

•Œ—ŒŒŒ

¥

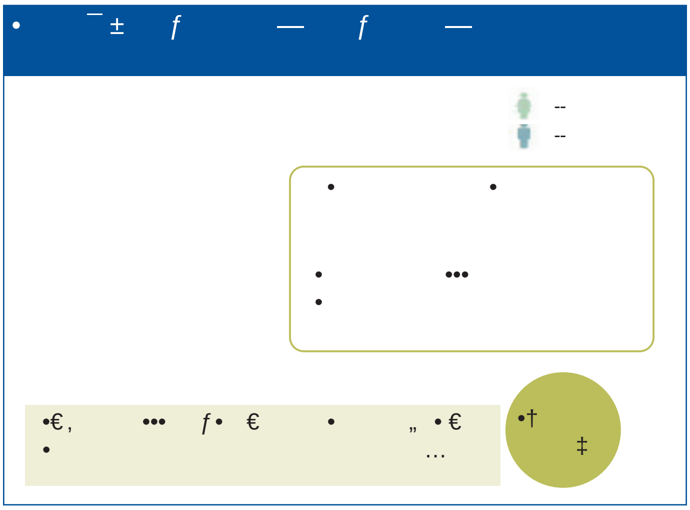
¢Œ

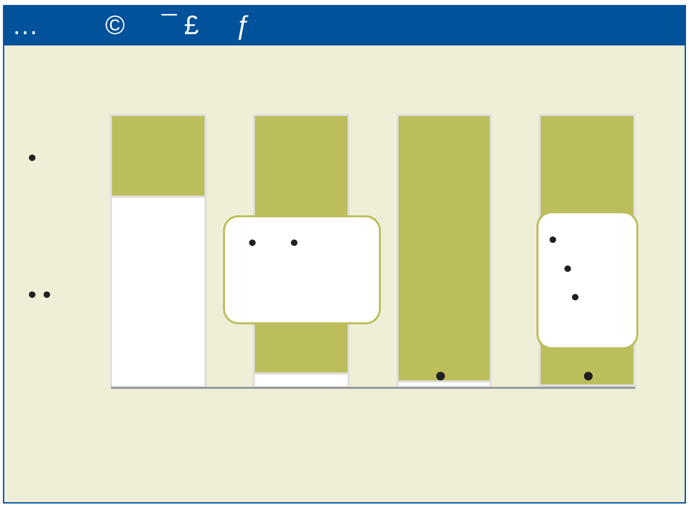
•‚¢—ŒŒŒ—ŒŒŒ

€ ƒ

† ƒ • ™ ŠŒ§ œ
ž • • — ƒ • £
— ƒ • ¢ ƒ —
‚ ƒ ª —
¦ • ƒ •
˜ ƒ ƒ — 2Œ§ 034 5023 36 036 3036]TJ 0 -1.2 TD [(36 1Œ§
7024 4 6r 2033 0020 8(027025)037 Ž 36 r0354 017 ƒ r0323036 2017 5026 5036 036 4 7 6 b
36 65026 7 103365026 r 0365026 0036• 103650f013 0035 0002 4 017 036 2033 2036 0035 8(r0323

0255025302022-1(036)-2(0203)-2(0204)-2(0203)-2(0217



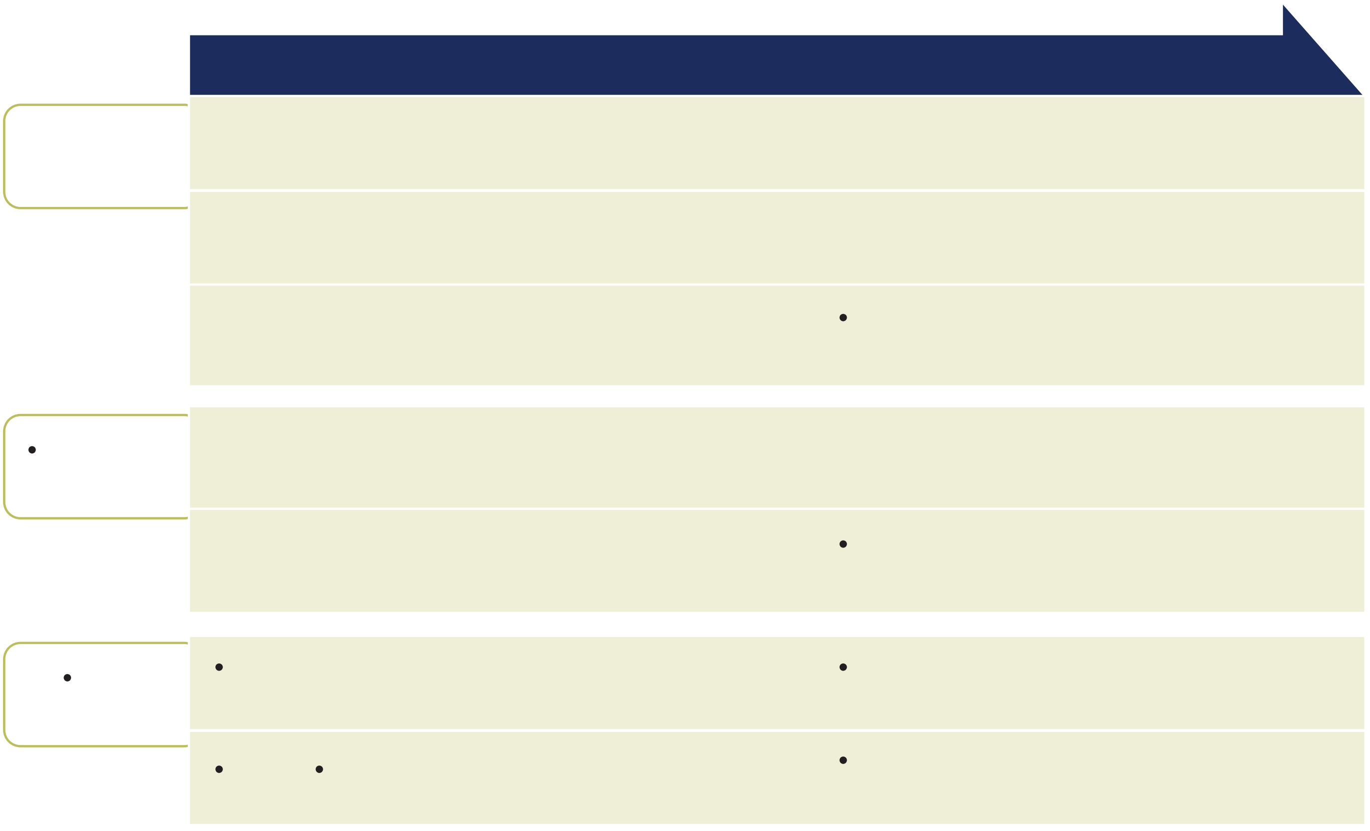


[illegible]

[illegible]

[illegible]

[illegible]



Drive rural and national economic development

Agricultural production need not be a detriment to the planet; in fact, it can be a linchpin of sustainability. It provides vital ecosystem services such as watershed management and carbon sequestration that offset industrial growth.

The New Vision strives for an absolute minimization of the environmental footprint, beginning with reductions in its impact relative to production. This includes limiting greenhouse gas emissions and water consumption while preserving soil health and biodiversity. It necessitates judicious use of technologies, monocultures and cropland expansion.

It will also require technological breakthroughs to help farmers adapt to the consequences of climate change, enable production and mitigate risk under increasingly dif cult conditions.

… while generating economic growth and opportunity.

Drive rural and national economic development around the globe with well-targeted investments

S Decrease the proportion of rural inhabitants living on less than US$ 1.25/day by 20% each decade

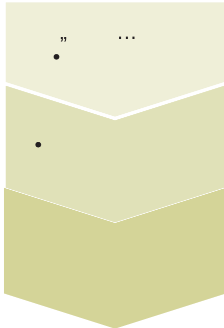
Agriculture is the predominant driver of growth in many low- and middle-income countries, and GDP growth from agriculture has proven to be more effective at reducing poverty than growth originating in other sectors. Investing in the success of rural populations is vital to equitable human development. This involves targeting those below the poverty line and enabling the growth of rural economies with widespread access to transport, energy and information.

Farmers who earn can spend, supporting jobs and incomes for local businesses and service providers. Thriving local communities can invest more in education and healthcare, propelling productivity.

Reaching the central goals of the New Vision will require contributions from every stakeholder of global agriculture: developed and developing countries, exporters and importers, large-scale producers and subsistence growers. Farmers will need to be engaged and empowered in every system. Large commercial players are critical to stabilizing global supply and can apply sustainable practices at scale. Smallholders, who currently lack access to critical inputs and markets, will be vital to meeting local nutritional and economic needs. Pursuing the New Vision's three objectives simultaneously will inevitably require careful societal choices and tradeoffs.

Achieving these goals will require contributions from every aspect of global agriculture and conscientious navigation of dif cult societal tradeoff

		Potential impact		
Changes required	Example tradeoffs	Food security	Economic development	Environmental sustainability
Smallholder green revolution 		Potentially accounts for 40-50% of output increase to 2030 Relies on farmer access to inputs, markets, credit and information	Greatest number of people lifted out of poverty Prospect for rural livelihood diversification Represents 90% of farms worldwide	Increased productivity will reduce pressure on forest land Covering 60% of arable land Opportunity to maintain agrobiodiversity
Robust commercial agriculture 				
Responsible land expansion 				
Reducing food waste				



Farmers at the Forefront

Dinh Xuan Toan, Vietnam

Dinh Xuan Toan is a vegetable farmer in the Lam Dong province of Vietnam. He contracts with Metro Cash & Carry to grow and sell high-quality produce for consumer markets.

As a part of this partnership, he receives extension services that inform him about improved practices like year-round cultivation, crop rotation and balanced fertilizer application.

In return, he must comply with growing standards that ensure crop safety and quality. His income is now not only higher, but also more stable. He is investing his profts in a new bamboo greenhouse, packing house and truck as well as repairs to his tractor and family home.

Source: Metro Cash & Carry

Gurmail Singh, India

Gurmail Singh has been growing rice in Punjab for 30 years. Until recently, he relied on conventional methods of transplanting, which rely on groundwater. The depth of the water table has dropped from 60 feet below ground to 250 feet, requiring Singh to use a pump with more than twice the power.

Contract farming with PepsiCo, Singh was introduced to the direct seeding technique for rice, allowing him to sow seeds directly in the main feld without water at the crop base. He began using this technique on 0.5 hectares and realized water savings of 30-40% in addition to decreased labour and increased yields.

Singh now uses this technique across 15 acres of paddy and has championed its adoption on over 500 acres in his village, increasing environmental sustainability with the powers of partnership and example.

Source: PepsiCo

Generating a Virtuous Cycle

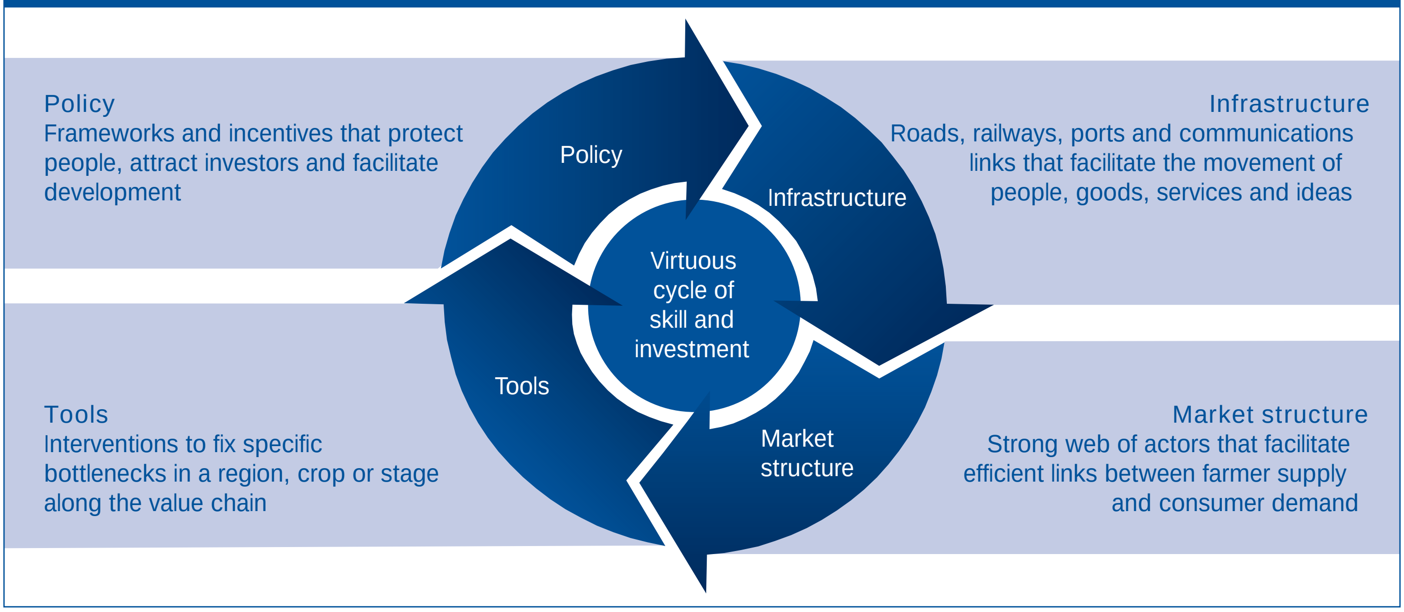
Point interventions are clearly critical, but the impact of each is limited by the weakest link in the value chain. The challenge ahead demands approaches that will fundamentally shift the way the system operates. We need functioning markets in which individual incentives are aligned with the social good prices reflect real costs, and honest work yields a dignified way of life.

> "Open markets offer the only realistic hope of pulling billions of people in developing countries out of abject poverty while sustaining prosperity in the industrialized world."
>
> **Kof Annan**
> General, United Nations (1997-2006)

Agricultural development can be environmentally, socially and economically viable if approached as a market investment rather than short-term aid. Investors, beginning with farmers, should expect to turn a profit. Only then will they have the incentive to innovate, resilience to endure risk and capital to advance.

When farms succeed as businesses, other enterprises can develop in rural areas: not only selling inputs and buying output, but also processing crops, retailing goods, providing services and sparking trade across villages, borders and oceans. To make this happen, a cycle of skill and investment in agriculture must be sparked.

Innovative tools only work if they are supported by the right policy, infrastucture and market structure



Government policy is critical for investment in agriculture. A framework of regulations should be consistent, transparent and evidence-based and include strict standards of governance, property administration and quality regulation. The policy environment must provide incentives for players to invest in agriculture while protecting the welfare of citizens and the environment. This entails increasing market access while ensuring sufficient public goods (such as research, education and gender equity).

Adapting and adjusting government policy can transform production – as demonstrated in China and Vietnam over the last two decades. In Vietnam, the Doi Moi reforms dismantled collective farms, assigned land rights to farmers and liberalized trade; these policy changes drove GDP growth to 7.6% annually in the 1990s and yielded sharp declines in rural poverty, hunger and malnutrition.

Robust infrastructure is another base requirement for agricultural development and is critical to a self-sustaining cycle. This includes roads, electricity, rail, ports, aqueducts, storage and telecommunications to connect interdependent components of the economy. Insufficient infrastructure creates logistical inefficiencies at every stage of production and makes investing – and even interacting – costly.

Strategic infrastructure investments can trigger and support diverse rural economic growth. For instance, the construction of the Erie Canal and proximate railways in the US ignited regional trade: industry boomed in the Northeast, the Midwest became a national breadbasket and productivity rose nationally.

Village-based Models of Holistic Change

A number of civil society actors have demonstrated the importance of an integrated approach to development.

Institutions such as BRAC and Save the Children and initiatives like the Millennium Villages Project leverage community leadership and target investments to simultaneously improve local health, nutrition, education and incomes.

Many such efforts have had substantial impact at the village or district level and offer useful lessons to public- and private-sector actors who can help adapt and scale such approaches.

Ensuring a sustainable cycle requires market structures that allow producers to meet consumer needs efficiently. This entails market links between players along the value chain, financing mechanisms to reduce risk and appropriate scales of supply and demand.

A healthy market structure requires strong actors with the investment capacity to tackle bottlenecks. In some instances, individual players manage this capability, but often it is created through aggregation and cooperation.

For instance, the organization of small coffee producers in Colombia – complete with research, extension and marketing – propelled Colombian coffee to the top of the global market. In India, local dairy farmers formed cooperatives to process and market milk efficiently at scale; the farmer-branded dairy now thrives, mitigating crises of rural poverty and malnutrition.

Mobilizing Business as an Agent of Change

Given these historical successes and today’s need for broad-based action in agriculture, stakeholders are beginning to orchestrate their efforts to spark such virtuous cycles. An initial challenge in developing countries is how to reach and engage millions of smallholders and rural consumers: it is impractical for a single institution to address the varying barriers in every village.

If profit incentives are aligned with the goals of agricultural development and appropriate social safeguards, businesses have the motivation and capability to drive localized change. This applies to family-owned shops as well as multinational corporations.

In many areas today, there are impediments to robust private sector involvement. In addition to ensuring the right policies, infrastructure and market structure, stakeholders may help attract and accelerate private investment. For instance, the government can offer time-bound financial incentives (such as land or tax breaks) to offset start-up costs; foundations can provide seed funding for research and logistics; and NGOs can organize and train producers so they offer a critical mass of talent.

In attracting local businesses, it is critical to consider economic scale and sustainability: forward-looking business models that allow for sufficient ongoing operating profit without long-term dependence on operating subsidies.

Achieving the New Vision requires the private sector to be engaged as an active partner. This includes, but is not limited to, traditional competencies such as technological expertise, financing and sourcing.

It also extends to more proactive roles like private extension, smallholder aggregation (e.g. nucleus farms, warehouses), nutrition education and multistakeholder coordination. In stepping up to lead the transformative process, companies can harness the power of markets to deliver enduring impact.

“›arming at any scale is a business, and smallholders and producers must be treated as entrepreneurs.”

Kanayo Nwanze
President, International Fund for Agricultural Development (IFAD)

Who Is the Private Sector?

The private sector includes any individual or institution that earns income by producing and trading goods and services. In the agriculture sector, this spans the range from smallholder farmers to national and multinational companies.

These diverse enterprises are complementary and interdependent. Farmers rely on local businesses to provide inputs, and purchase and process the harvest.

Small and medium-sized enterprises rely on larger firms for technology, manufacturing and retail of consumer products.

Regional and global companies have the expertise and capacity to help develop markets and deliver impact at scale.

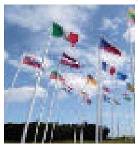
Each has a unique capacity to drive and sustain market-based transformation of the agriculture sector.

Models of Collaboration

We are witnessing the emergence of a new generation of agricultural initiatives, many in an early stage, which can deliver these transformations in even the most challenged geographies. Private, public and civil actors are using a range of exciting approaches to shape robust markets.

Emerging examples of holistic approaches (not exhaustive):

a National sector transformation



Broad policy scheme that renovates market structure to spur private investment towards specific economic and social objectives

b Value-chain intervention

Business investments in the production of a particular crop to improve the value of goods from planting through to consumption

c Infrastructure corridor

Coordinated investment in an infrastructure system to jumpstart and facilitate rural markets and reduce logistical inefficiencies

d Breadbasket

Concentrated investment in an area with high agricultural potential and many smallholder farmers to increase production of staples

a A National-sector Transformation: Green Morocco

Agriculture accounts for almost 20% of GDP in Morocco and over 40% of jobs but, until recently, productivity had remained stagnant for two decades. To revitalize the sector, create sustainable rural employment and meet growing demand for diverse food choices at home and abroad, the government developed a strategy to attract private investors while protecting social interests.

The government stimulates high-value crop production to meet national and international consumer demand through “Le Maroc Vert”. Their strategy is to lease land to private investors in return for implementing advanced production, developing value-add facilities, employing rural Moroccans and aggregating the produce of neighbouring smallholders.

In this system, private players invest their resources and know-how for higher-value agriculture, including cash crops, irrigation efficiency and processing. They also link smaller players with the inputs, expertise and consumers they may otherwise not have the scale to reach. A dedicated government agency manages the contracts to attract investors while monitoring to ensure social equity for local communities.

The programme initially identified 700-900 investment projects across the country. The strategy was then incorporated into regional development plans with the aim of reaching 700,000 farmers out of 1.5 million in the first seven years. Through this proactive approach, Morocco is determined to create a million jobs and double agricultural GDP. So far, between 2008 and 2010, the annual income of participating smallholders has tripled to US$ 3,000, and agricultural GDP has increased by 30%.

b A Value-chain Intervention: Horticulture in Honduras

Holistic value-chain interventions in Central America and around the world tackle obstacles from local production to international trade to improve the efficiency and equity of strategic crops.

In Honduras, an NGO (TechnoServe) and a farmer organization (Asociación de Productores de Hortalizas y Frutales de Intibucá) are leading a partnership with donors and private companies to improve the productivity of horticulture. The country is relatively poor, with high population density and a per capita GDP below US$ 4,000 year.

This value-chain intervention focused on the impoverished region of Intibucá, where smallholders formed a strong organization and diversified their crop production but needed a jump-start from external investors to access higher-value domestic and foreign markets. Together, the partners invested in enhancing resource productivity, building organizational capacity and targeting consumers.

The farmer organization now contracts with sophisticated regional buyers such as Grupo Comidas Especializadas. In just two years, participating farmers boosted yields by 50% and realized prices by 30%. The capital inflow has not only funded sector upgrades and additional employment through such enterprises as new processing facilities, but also improved living standards, including higher rates of school participation and access to potable water.

c A Proposed Infrastructure Corridor: Beira Agricultural Growth Corridor

Businesses allied with the government and international donors to build infrastructure in central Mozambique, where over 10 million hectares of high-potential land remain commercially underdeveloped. The Beira Agricultural Growth Corridor is intended to reduce early-mover risk and create economies of scale for investors by coordinating projects in advance – literally laying the groundwork for an active rural economy.

Inspired by the success of the Cerrado, which has a similar ecosystem, investors hope to make this region a global source of maize, sugar, horticulture and soy. Improved infrastructure, such as a freight network and high-capacity port, will catalyse production and link it with global markets. Construction is anchored to major mining programmes, commercial farms, smallholder aggregation and enhancements of railways that connect to the port in Beira.

Proponents hope to use the technological, financial and managerial capabilities of global investors along with the regional expertise of domestic players to bolster local business. By facilitating commercial opportunities for sophisticated private players, the corridor will upgrade the supply chain and attract resources for smallholders, such as financing, improved seed, agri-dealers, storage facilities and links to deeper demand. A goal is to ensure equitable growth through models that benefit smallholders and protect their communities. To this end, commercial farms are designed to serve as hubs for outgrowers and provide services such as irrigation to smaller farmers.

The partnership comprises a broad array of stakeholders, including governments, donors and businesses, organized around a detailed investment plan. Together, they hope to raise farming revenues by US$ 1 billion and tax receipts by US$ 50 million annually, create 350,000 new jobs and improve market access for 200,000 smallholders.

d A Breadbasket: The Ghana Northern Region

Concentrating resources in areas with the most agricultural promise can maximize efficiency, improve food security and create economic surplus for off-farm development. To this end, the breadbasket approach upgrades all elements of the value chain in a region that has the potential to produce a large share of a country's staple food requirements.

The Government of Ghana and the Alliance for a Green Revolution in Africa (AGRA) are leading a coalition to apply this strategy. Stakeholders identified four breadbaskets to support the country's economic goals, staple self-sufficiency and smallholder income. They tackled the northern region first, both for its high stakes and high potential: it is the poorest region but has great agricultural capacity with large areas of uncultivated land, good water supply and lagging yields.

The strategy involves smallholder aggregation, socially inclusive commercial farms on undeveloped land to stabilize supply and generate employment, and interventions to boost access to inputs and credit. While the focus is on achieving self-sufficiency in cereals, the strategy facilitates the market links necessary for high-value crop cultivation and supports boosting production of local fruits and vegetables.

The plan mobilizes the local private sector as change agents: about 250 entrepreneurs, such as SME owners and small warehouse operators, support smallholders and interface initiatives of the government, donors, input/off-take companies and commercial banks. National players with deep regional knowledge find investment opportunities in supplying domestic food markets and global agri-business companies can use sophisticated technology and large-scale production mastery to secure export markets.

In the northern region alone, the plan should double the incomes of 250,000 poor farmers to about US$ 750 a year, increase national rice self-sufficiency to 70% and boost agricultural GDP by US$ 500 million.

Operating principles of the New Vision for Agriculture

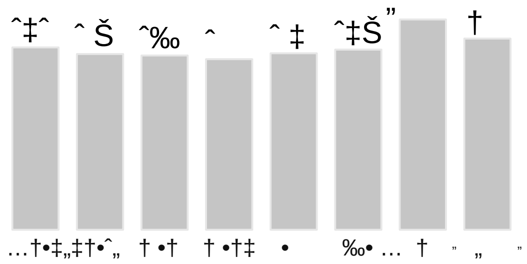
Mobilize the private sector
to unleash agriculture as core driver of future growth and stability

Employ market-based solutions
to activate public and private investments

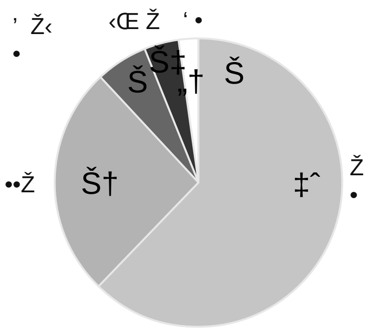
Empower farmers and entrepreneurs
to reach their full potential

Integrate interventions
to achieve momentum and scale

Collaborate
with diverse stakeholders to build on strengths and distribute risk



ƒƒƒ• •

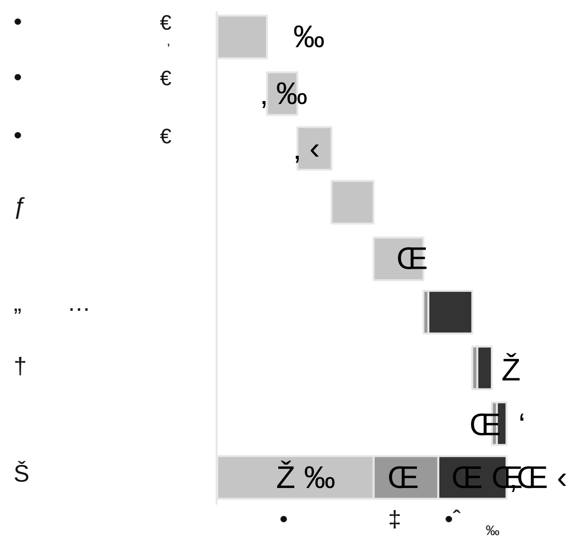


	„	Š
†		
“ ‹” Š	„„ƒ	„†ƒ
•	†	†
‰ †		
‹”€	Šƒ„†	ƒ‰

• • •
•
•
•
•
- €
,

„ Œ
“ – • • ˆ - •

Š •
‰ - ‹ Œ• • ˜Ž,
— ˜Ž,

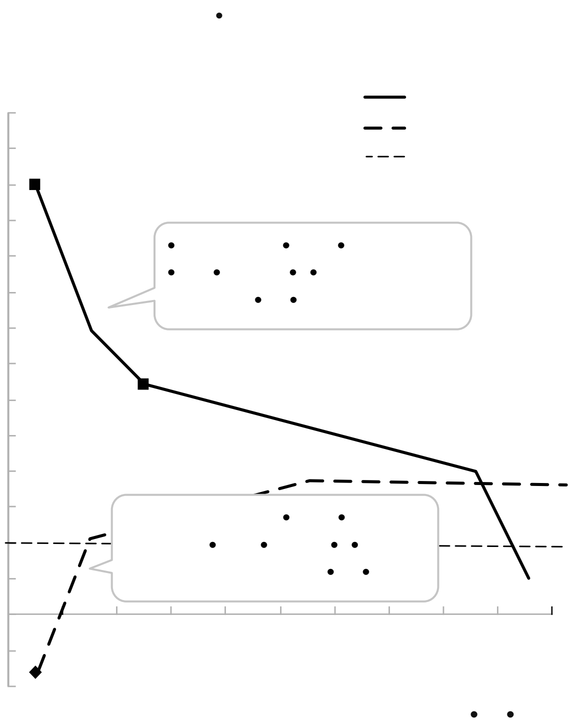


	‘	Œ
• •		
-	, Œ	Ž‘
•		
’ Œ- Œ	‹	, ‘

• • •
• •
•
•

’ ” •
Œ Š • ” ” ” …,•• Ž• , • €
“ …

• • • • • • • • ••• • • -€, ƒ „ • … †



• • - •
ƒ • • -
• Œ Ž Š Š ‰ •

•
‰ Œ Ž Š ‰ ‰

‰ Œ Ž Š ‰ ‘‰

• • •
- € ,ƒ „
…ƒ† ‡ ˆ
‰ • • Š‡ ‡ •
‹• • Š‡ • • € Š • „
•
† •

’ • • • “ ”

Appendix B: Implementing the New Vision

Successful Transformations Require Investors and Partners to Work in Concert to Overcome Critical Obstacles

Steps towards Enacting the New Vision

1. Understand institutional capabilities
   - Determine your organization's core role in the agricultural value chain, evaluating internal strengths, competencies and passions
   - Consider geographic priorities (e.g. concentrations of supply/demand, breadbasket regions)

2. Ally with strategic partners
   - Establish aspirations for a speci c region or value chain
   - Balance stakeholder strengths and leverage existing partnerships, regional dialogues and frameworks

3. Assess the agriculture system holistically
   - Understand critical obstacles to a functioning market, and analyse the economic costs of barriers across the value

‹ ¢ ™

‹ ¢ ‚ Š •

‚ — € ˜ £ — † ƒ ™
Œ • ‚ — £ — ™ ˜ š — ƒ
† ‚ — … £ — † ƒ —
• — † — ¥ ™
• — › — … ˜ £ — ¥ ™
• ˆ • — ƒ ƒ £ — … … — ˜ ƒ
ˆ — › — … š — £
ˆ — — † • £ £ — † ˜
ˆ £ — € ƒ — – ¤
ˆ £ Š — › — š ƒ • š ¹†€•
† ” ƒ — † £ — † — • †
Š ƒ Š • — ƒ — ™ … š —
£ – • — † › — … † š ƒ — ˜ †•
Š ‹ — › — … • — ¡
£ — • › — † — ¨
‚ — † ƒ — • † —
£ — › — ˜ š ƒ — € ˜ ™
— € — † £ — † ˜
‹ ˜ • — † › — — •
˜ ƒ — › — † — •

ƒ Š •

— € ˜ ™ ƒ — † ƒ
Œ — › — † ƒ —
‹ Œ ‡ — † • — £
† — £ — ™ ƒ — •
• £ ™ — £ — … • — ¡
£ • ™ •• — € š £— ¥ ™
™ — £ — … — ˜ ƒ
” — £ — ™ ˜ š — •

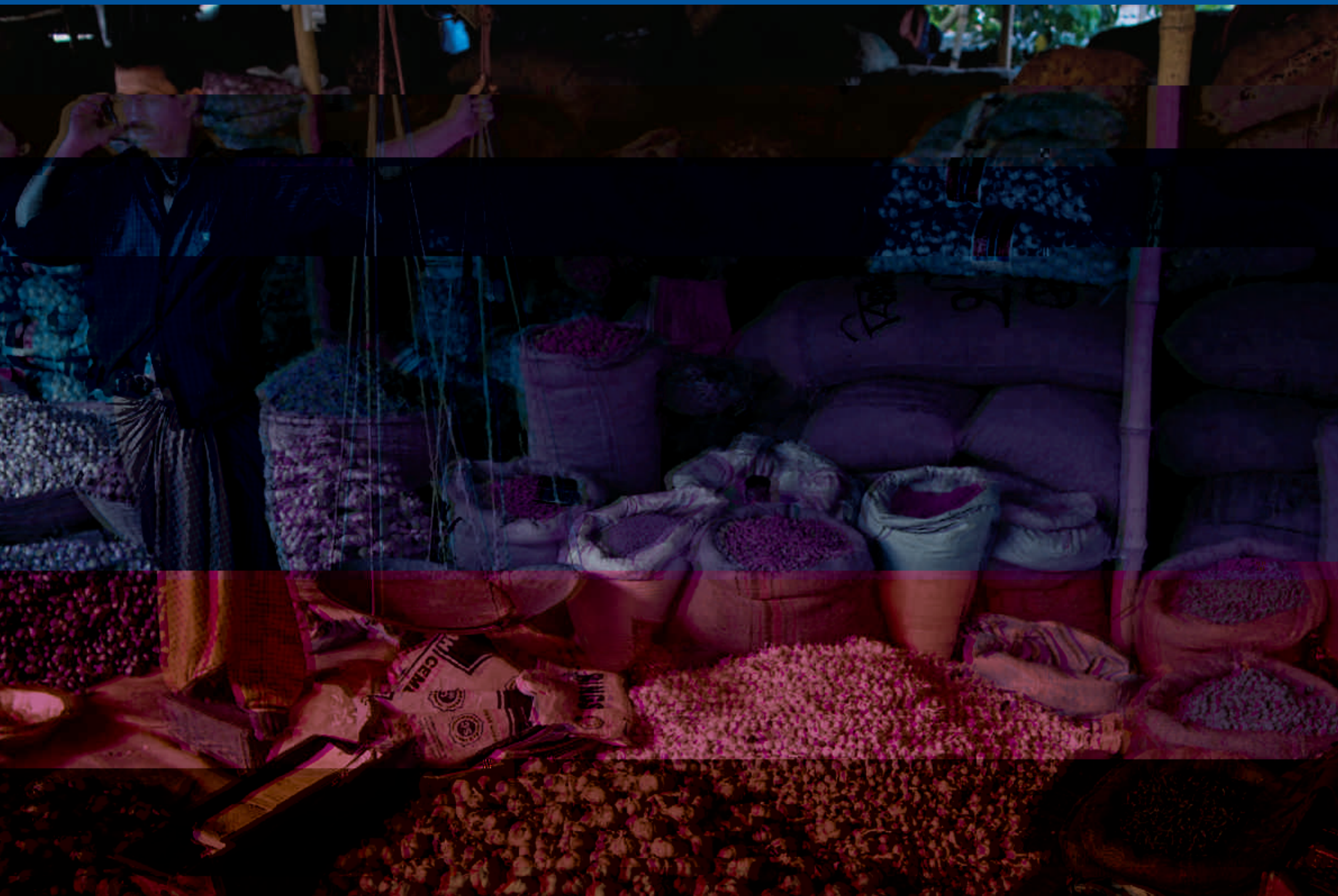
‹ ¢ Š ” Ÿ • •

‹ Š — — ± ƒ • † ™
— £ — … ± • £ €
‘ ‹ — — ± ƒ • † ™

” ‹ • — ‹ • ¤•—‹ •¥

” • — † š •
ƒ — £
¢ ‹ … ™ — € ‚Œ‚Œ ™ †
— — £ …
Œ • — š •

† • — •
£ ‚ — £ — – › ƒ — … ± •
£ ‚ — ž ƒ — – › ƒ — †
™ Œ — £ — • † £ ™ €
ˆ ™ — £ — € ƒ — • ˜ ƒ
— † £ — € ™
— ž — – › ƒ



COMMITTED TO
IMPROVING THE STATE
OF THE