

Vitaly G. Kandalintsev

## Investment in developing countries: challenges to the agriculture and energy sectors

**Abstract.** The author suggests the concept of investment ecosystem applied to the analysis of the investment process in agriculture and energy. It is shown that at different stages of the investment process in developing countries there emerge certain problems with their specific solutions. These solutions, however, need more systemic understanding and integrated approach for their integration.

**Key words:** investment ecosystem, stages of the investment process, investment in agriculture and energy.

Solving the food problem and other important socio-economic problems in the developing countries demands significant investment flows. Available investment sources currently do not provide sufficient investment financing in these countries. Bridging the existing gap requires a systematic approach to the entire investment process. The concept of investment ecosystem may become the requisite analytical tool for implementing this approach.

### The concept of investment ecosystem

The notion of ecosystem can be defined as a community of participants in the investment process with stable relationships, emerging at different stages of this process. SIPOC (supplier-input-process-output-customer) format visually represents the ecosystem, and indicates the roles ecosystem participants play at various stages of the investment process (see Table 1).

Table 1

#### Investment ecosystem

Community	Contribution (process inputs)	Investment Process	Benefits (process outputs)	Recipients of benefits
The state	Changing legislation and participation in the projects	1. Creation of a favorable investment climate in the host country	Conditions for strategic projects  Conditions for small and medium businesses	Large investors  Medium and small investors
Initiators of the projects	Ideas and concepts of business	2. Nomination of promising project ideas	Attractive and realistic project ideas	Initiators of the projects Investors

Intermediaries	Contacts	3. Search for investors	Agreement between project initiators and investors Payment for services	Initiators of the projects Investors Intermediaries
Investors	Financial resources Technology and know-how	4. Provision of Finance and technology	Availability of investment	Initiators of the projects Investors
Consultants	Consulting services	5. Project development	Package of project documentation Payment for services	Initiators of the projects Investors Consultants
Project teams	Organization of project activities	6. Projects implementation	Putting the enterprise into operation Payment for services	Investors and initiators of the projects (co-owners) Project teams
Hired managers and employees Enterprise customers	Professional activities Payment for goods and services	7. Production activities	Dividends Capitalization  Goods and services Wages and salaries Taxes	Investors and initiators of the projects (co-owners) Clients  Employees  State

The central part of the table lists the seven stages of the investment process, each having different tasks and participants. Briefly, these stages include:

1. *The creation of a favorable investment climate in the host country.* The state, government agencies and various authorities play crucial role at the initial stage of investment activities. The state can improve the legislation and the administrative procedures in the interests of the investment process, and it can also directly participate in the investment projects. For strategic projects with the participation of large investors the legislative setup and the state intervention in favor of a specific strategic project is frequently very important. For the smaller and more numerous projects the improved business conditions in the host country is usually significant.
2. *Nomination of promising project ideas.* In the complex conditions of developing countries, it is important that the initiators of the projects would be focused on the most promising ideas. Such ideas should take into account the profitability and the risks, employment issues, lengthening of value chains and various other factors that would contribute to the socio-economic development.

3. *Search for investors.* Competition for investments is rather strong among the developing countries. Therefore, at the national level a developed infrastructure facilitating the search for investors is a necessary requirement. It includes the information resources and a network of trusted contacts. It is also important for the intermediaries in developing countries to increase the effectiveness of the search for investors.
4. *Provision of finance and technology.* At this stage, it is important for the developing countries to ensure that investors not only finance projects, but also ensure the transfer of relevant technologies.
5. *The project development.* Consultants involved in project development, should make a more thorough risk assessment, as well as strive for greater project complexity. *Ceteris paribus*, this will increase the likelihood of project success.
6. *Implementation of projects.* For project teams the challenge of keeping high quality, meeting the deadlines and fitting in project budgets is very important. Improvement of team members training, implementation of modern standards of project management can help significantly in this regard.
7. *The company's production activities.* Successful completion of the investment project means the appearance of a permanently run enterprise. The effect of investment will increase if the enterprise strategy will also include social and environmental issues.

## Investment ecosystems in agriculture

*The creation of a favorable investment climate.* Government policy can have an important stimulating effect on agro-investments if it will include the improvement of state regulations in the following areas:

- Agricultural production (control of prices and subsidies).
- Investments (protection of property rights, enforcing contracts).
- Capital repatriation (restrictions on the withdrawal of capital from the country hampers foreign investment).
- Overall policy and regulatory environment (tax incentives for foreign direct investment, investments in infrastructure, limiting the role of speculators) [1, p. 56–57].

Improving the investment climate is also significantly associated with investment in R&D imbedded in the innovation system. In developing countries the state remains the main investor in this area.

According to the available data low- and middle-income countries account for 47% of the world spending on R&D in the field of agriculture. This spending is divided in a fairly uneven way and a considerable part of it accounts for the major countries. Thus, the share of 26 countries in the Asia-Pacific region is 20%, but 9% pertains to China, and 5% to India. A similar situation is found in Latin America and the Caribbean: 25 countries in this region account for 11% of the world spending on agricultural R&D, but 5% pertains to one country — Brazil. The share of

12 countries in West Asia and North Africa makes 6%, and the share of 45 African countries South of the Sahara — 5% [2, p. 2].

These data indicate that a small group of mostly large countries has developed a pretty good system of agricultural research, but in a large group of smaller countries, these systems are only beginning to emerge. In the long term it is important that the research should turn into a system of agricultural innovation capable not only to deliver the desired results, but also to ensure their rapid and widespread implementation in practice.

The main development objectives of the agro-innovation systems of developing countries to a greater or lesser extent will be the following:

- Coordination and collective actions of the participants (farmers, firms, farmers' organizations, researchers, financial institutions and government agencies).
- Development of agricultural education and training.
- Expansion and development of advisory services.
- Development of agricultural research within agricultural innovation system.
- Incentives and resources for innovation, partnerships and business development.
- Creating a favorable environment for agricultural innovation.
- Assessing, prioritizing, monitoring and evaluating agricultural innovation systems [3].

Alongside with this we should take into account certain regional differences in the substance of research and development. In the production of cereals such differences are determined by the location of R&D in two areas of production growth — the expansion of cultivated areas and crop yields (see Table 2).

Considerable potential areas suitable for processing exist in South America and Southeast Asia. For their involvement in the overall economic turnover there is a need for advanced applied research and development related to generalization and adaptation to local conditions of the existing technologies; transfer of technical and organizational knowledge and skills to farmers. Yields increment on both the old and new crop acreage may be secured by the introduction of new high yielding varieties.

More complicated is the situation in Africa, where many areas suitable for cultivation also exist, but their effective use requires introduction of new agricultural technologies and new drought-resistant cereal varieties. TNC can be the source of such technologies and African states' task is to encourage the transfer of new technologies and to combine it wherever possible with their own research. Approximately the same situation exists in China, with the only difference that China's potential related to the import of new technologies as well as their combination with their own R&D is much greater than that of the African countries.

Table 2

**Factors of growth in cereal production and their dependence on new technologies**

	I. Opportunities for expansion of cultivated areas	II. Yield increase
South America	Considerable	New high-yielding varieties
South-East Asia	Considerable	New high-yielding varieties
Africa	Considerable, but dependent on the emergence of new technologies	The need for drought-tolerant varieties of cereals
East Asia: China	Dependent on the emergence of new technologies	The need for drought-tolerant varieties of cereals
Western Europe	Limited	The growth of productivity in complex precision farming
North America	The tendency to reduce the acreage	The growth of productivity in complex precision farming

In Western Europe the possible expansion of cultivated areas is limited, and in North America, it is probable that availability of such space will be even reduced. But high-tech farming technology is able to meet the needs of these regions for many years to come.

*Nomination of new ideas.* Ideas and project concepts should ultimately lead to the creation of efficient agricultural production. Practically this means that already at the stage of nomination of ideas and development of the project concept the orientation of projects must be expressed in its focus on the three strategic themes: increasing revenue, reducing expenses and increasing access to the markets:

1. Revenue increase

- Switch to high value crops.
- Increase agricultural yields through higher quality seeds and crops.
- IT improvements do increase awareness of market prices.
- Agricultural technical assistance.

2. Reduce expenses

- Improve the irrigation systems.
- Increase efficiency by adding new machinery.
- Sustainable agricultural techniques training.
- Water management training.

3. Increase access to markets

- Business & marketing skills training.
- Support to wholesalers, distributors and retailers.
- Market infrastructure improvements
- Support to cooperatives.
- Transportation improvements [4, p. 13].

*Search for investors.* Although the main investors in agricultural production in developing countries are farmers, an important source of investment financing is provided by loans. Financial intermediaries play a very important role in organizing the

cooperation of financial institutions with a large number of medium-size and especially small producers. Increase of their professional training and motivation can have a positive impact on the dynamics of such investments. Financial intermediaries should:

- show interest and experience in agriculture;
- have a strategy to focus on new clients or intend to increase their portfolio in the agricultural sector;
- have a local presence in rural areas;
- be interested in a long-term partnership;
- underwrite objectives and social mission of the financial institution;
- be willing to take more risk each year on the same conditions;
- conduct their own due diligence of the client [1, p. 114].

A major role in the training of mediators can be played by financial institutions themselves; however, the involvement of governmental institutions of developing countries could accelerate the process. For example, by extending staffing recommendations and by local support of the appropriate educational programs and trainings.

*The funding.* It should be noted that the lack of financial resources may be connected with the gap in financing provided by banks, and the amount necessary for the investment of small and medium producers. Banks often rely on funding of over 1 million USD. But in rural areas of developing countries there is a noticeable need for microfinance (up to 10 thousand USD) and the interim financing (from 10 thousand USD to 1 million USD) of agro-investments [1, p. 14].

This problem can be mitigated through cooperation of developing countries with agricultural investment funds, whose number rapidly grows. In 1999, there were 5 such funds, in 2009 — already 31. Of these, 10 funds had a global outreach, 7 funds — were continental or regional, 4 funds — sub regional, 10 funds — focused on one specific country. We can cite two examples of funds, specializing in microfinance and the interim financing:

The Rural Impulse Fund (RIF). Established in late 2007 with the aim of investing in agricultural microfinance institutions. Developing countries account for more than half of the Fund's investments, including: Latin America 27%, Africa 16%, and Asia 8%.

Sustainable Agriculture Guarantee Fund (SAGF). Established in 2008, it is focused on the work in Africa, Asia and Latin America. The official mission of the Foundation is to facilitate access to finance of selected small and medium agricultural producers. For this end the Fund provides credit guarantees to financial intermediaries [1, p. 121–126]

*Project development.* Project development should be guided by the principles for responsible investment in agriculture. These principles had been formulated by the working group of experts from UNCTAD, FAO, IFAD and the World Bank Group:

1. Existing rights to land and associated natural resources are to be recognized and respected.
2. Investments should not jeopardize food security but rather strengthen it.
3. Processes for accessing land and other resources and then making associated investments have to be transparent, monitored, and should ensure accountability

by all stakeholders, operating within proper business, legal, and regulatory environment.

4. All those materially affected are to be consulted, and agreements from consultations should be recorded and enforced.
5. Investors must ensure that projects respect the rule of law, reflect industry best practice, are viable economically, and result in durable shared value.
6. Investments have to generate desirable social and distributional impacts and should not increase vulnerability.
7. Environmental impacts due to project implementation are to be quantified and measures taken to encourage sustainable resource use while minimizing the risk/magnitude of negative impacts and mitigating them [5].

*Implementation of projects.* When direct investments take place (purchase of land and deployment of agribusiness) project teams should pay attention to the complex organization of the processes of project management so that quality control, schedule and budget targets shall be met. If we are talking about funding a large circle of small and medium farmers, the main attention should be given to the creation of a network of effective financial intermediaries.

*The company's production activities.* Stable and successful work of created or extended business in the result of investment in farms and other agricultural businesses shall improve the food situation in the country and the investment climate in agriculture.

However, investments in the field of agriculture are marked by increased risks, including those of climate and natural character; that is why the manufacturers need to pay more attention to risk management.

First of all, attention should be paid to the analysis, forecasting and measures are to be taken to prevent or mitigate the following physical and economic risks:

- Increased weather variability, physical water scarcity and climate change.
- Land degradation.
- Biodiversity loss and collapse of ecosystem services.
- Overfishing and negative impact on marine ecosystems.
- Increased risk of agricultural diseases, viruses and pests.
- Phosphate availability.
- Economic water scarcity.
- The greening of the agricultural value chain.
- Land use regulations.
- Changing biofuel regulations.
- Regulation and diffusion of biotechnology.
- Greenhouse gas regulation in agriculture [6, p.9].

Risk management on the operational stage of a project (i.e. in the mode of production of the company) is especially important in the developing countries because the risk factors there are rather numerous. Early detection of increasing risk and taking of appropriate measures to prevent or reduce losses is essential for quality work of management systems in the newly created and extended enterprises.

## Investment ecosystem in the energy sector

*The creation of a favorable investment climate.* Investment in the energy sector involves a policy that combines investments in traditional (generating capacity of thermal power plants and large hydro) and alternative (solar, wind and others) power sources, as well as investments in energy efficiency. Based on the priorities in these three areas, the state may increase the attractiveness of investment in the energy sector and contribute to the optimization of the energy mix through appropriate incentives.

The most important trend is represented by the shift in power generation to facilities that use renewable energy sources (RES), and by a combination of this shift with efficiency increase. The creation of a favorable investment climate for the implementation of this shift is a challenging task. In the foreseeable future there are no alternatives to fossil fuel power plants. But the exhaustion of fossil fuel reserves, heavy environmental load, and the growing demand for electricity force countries to seek rapid development of the segment of renewable energy. Several countries in Asia and Latin America have good prospects for success in this field, judging by their rankings in renewable energy country attractiveness index — RECAI (see Table 3).

Table 3

### RECAI rankings at June 2014

Country	Rank	Technology-specific indices rankings							
		Onshore wind	Offshore wind	Solar PV	Solar CSP	Bio-mass	Geo-thermal	Hydro	Marine
China	2	1	3	1	5	1	12	1	19
Japan	4	10	9	3	27*	3	3	3	12
India	7	8	21	5	4	15	15	8	11
Brazil	10	7	26	15	10	5	32	4	24
South Korea	11	22	13	11	25	11	28	18	3
Chile	13	27	24	12	2	22	10	15	16
Turkey	20	16	25	26	12	32	4	10	20
Thailand	21	31	39	10	20	17	29	34	28
Taiwan	23	30	16	16	23	28	21	22	25
Mexico	25	24	31	28	19	30	39	28	21
Peru	27	36	28	19	13	26	13	6	31*
Israel	28	39	37	17	8	38	35*	37	26
Morocco	29	28	35	25	7	39	35*	39	31*
Saudi Arabia	34	35	38	22	15	40	30	40	31*
Philippines	35	37	30	31	22	29	8	21	8

\*Joint ranking

Source: [13, p. 14]

China has the unquestionably leading position, with its first place in the four technologies. However, it should be noted that country-specific differences in the attractiveness of specific technologies are quite strong, and even the countries with a lower place in the overall ranking, can have a leading position in some technologies. For example, the Republic of Korea has the 11th place in the overall ranking, but 3rd in marine technology. Or Chile occupies the 13th place in the overall ranking, but in Solar CSP holds it on the 2nd place.

RECAI data suggest that a promising portfolio of renewable energy projects in different countries varies significantly. However, the challenge of encouraging investment in renewable energy projects requires flexible application of the relevant practices by all the countries. Currently in the world there are three most frequently used categories of measures, combining twelve practices that encourage investment in renewable energy:

- A. Regulatory policies: (1) feed-in tariffs; (2) electric utility quota obligation/renewable portfolio standard (RPS); (3) net metering; (4) biofuels obligation/mandate; (5) heat obligation/mandate; (6) tradable renewable energy credits (REC).
- B. Fiscal incentives: (7) capital subsidy, grant and rebate; (8) investment and production tax credits; (9) reductions in sales taxes, energy taxes, CO<sub>2</sub> taxes, VAT and other taxes; (10) energy production payment.
- C. Public financing: (11) public investment, loans and grants; (12) public competitive bidding.

The intensity of application of the mentioned practices greatly varies in different countries. So, India uses 9 of the 12 practices, China — 8, Argentina — 8, South Korea — 7, Peru — 6, Brazil — 4, Mexico — 3, Turkey — 1 [7]. In general, higher intensity in the use of practices usually means a more precise adjustment of the incentive package. Therefore the task of the developing countries in improving the investment climate in renewable energy lies in the development of the appropriate stimulus package.

Despite the importance of the rapid development of power generation based on renewable energy, it cannot by itself resolve all the problems, for the share of renewable energy capacity in overall power generation in developing countries will increase by 2050 from 1% to 5–6%. It is therefore equally relevant to improve energy efficiency. Energy efficiency includes the efficiency on the supply side (i.e., the efficiency of generation and transmission of electricity) and efficiency on the demand side (efficiency of energy use).

For developing countries the task of reducing power loss during transmission is very urgent. According to some estimates, losses range from 20% to 50%. Lagging efficiency is also quite significant in electricity generation at fossils power plants, which also may account for 20% of the most effective capacities established in developed countries. In the coming decades, countries of Asia, Africa and Latin America are to carry out major investment in traditional energy sector and make the noticeable improvements in energy efficiency of the created assets. To encourage appropriate investments in traditional energy there directions will be most relevant:

- Organization of effective competitive tenders.
- Participation of the state in financing projects.

- Encouragement of the renewal of fixed capital on the basis of more productive and less polluting equipment.
- Development of comprehensive programs for generating capacities and networks.

Finally, it is also necessary to simultaneously implement measures for improving energy efficiency. According to the International Energy Agency, every dollar invested in energy efficiency on the side of energy consumers leads to savings two dollars on the side of energy producers [8, p. 7].

*Nomination of promising project ideas.* With regard to challenges concerning the rapid development of alternative energy, improving the efficiency of traditional energy assets and in the interests of solving other problems of the energy industry, orientation of investment projects should be comprehensive and take into account the following regional characteristics (see Table 4).

Table 4

#### Priorities for Project ideas in World's Regions

Area	Priorities
Africa	<p>Increase access to electricity</p> <p>Increase power capacity and improve power reliability.</p> <p>Reduce power sector unit costs, including via improved functioning of utilities.</p> <p>Increase revenue/energy per unit generated in certain countries.</p> <p>Improve environmental sustainability of biomass fuel use, including via improved technology, and increased access to cleaner cooking fuels.</p> <p>Develop hydropower in an environmentally sustainable fashion.</p> <p>Develop coal resource in certain countries.</p> <p>Achieve greater integration of regional power markets.</p> <p>Improve energy efficiency.</p>
East Asia and the Pacific	<p>Enhance legal and regulatory predictability.</p> <p>Address energy pricing.</p> <p>Develop local energy resources and increase regional energy trade as means of addressing energy security.</p> <p>Scale up renewable energy.</p> <p>Improve energy efficiency and mitigate environmental effects of coal fired power generation.</p> <p>Enhance reliability and security of supply in the power system.</p> <p>Continue rural electrification by (1) increasing access in less developed power systems; (2) completing the electrification and improving quality of service in more developed power systems; and (3) promoting off-grid renewable energy in distant areas and islands.</p>
Latin America and the Caribbean	<p>Strengthen energy supply and distribution, and the ability to finance investments.</p> <p>Increase clean energy investment, including energy efficiency and renewable energy.</p> <p>Diversify energy matrix and reduce oil vulnerability.</p> <p>Establish tariff schemes that cover efficient production costs and promote new investments.</p> <p>Establish rational and transparent subsidy programs that are targeted to poor households, avoiding errors of inclusion, exclusion, or in regressivity.</p>

Middle East and North Africa	<p>Strengthen energy security.          Work toward adequate supply capacity.          Improve energy efficiency.          Work for financial sustainability of utilities and subsidy reduction.          Focus on energy's role in countercyclical fiscal stimulus.          Address public-private risk sharing.          Shift to cleaner energy.          Develop safe nuclear energy.          Work for greater commercialization of natural gas.          Enhance regional integration.          Pace investment in upstream oil optimally.          Manage energy sector structural change.</p>
South Asia	<p>Strengthen energy security (supply reliability, availability, affordability), expand access, and address shortage of supply:</p> <ul style="list-style-type: none"> <li>• Increase generation, transmission, and distribution.</li> <li>• Reduce technical and non-technical losses in the energy sector.</li> <li>• Increase regional trade.</li> <li>• Strengthen energy sector management and regulation.</li> <li>• Improve financial performance of utilities and strengthen pricing and subsidy reform.</li> <li>• Improve energy efficiency.</li> <li>• Increase renewable energy.</li> </ul>

Source: [9, p. 24–25].

*Search for investors.* Compliance of the loan application with the strategy and requirements of the bank is critically important. The task for developing countries is to achieve such compliance when contacting key financial institutions, such as multilateral development banks. Probably in the future these banks are going to clearly formulate their expectations that the borrowing countries should meet:

- Long-term integrated energy planning.
- Policies and regulations encouraging energy efficiency.
- Policies and regulations promoting renewable energy.
- Access to electricity for the poor.
- Pricing structures that encourage efficiency and reduce consumption.
- Reforming subsidies to reveal true costs of fossil fuels and promote the viability of sustainable energy options.
- Capacity of executive agencies on the use of sustainable electricity.
- Regulatory agency capacity to oversee implementation of sustainable electricity policy.
- Utility capacity to promote energy efficiency and renewability
- Transparency of policy, planning and regulatory processes for electricity.
- Stakeholder engagement in policy, planning and regulatory processes [10, p. 17].

*The funding.* Funding is available more quickly and in larger volumes if the existing risks (they are significant in developing countries) are reduced by application of specific set of financial instruments.

In the area of debt financing it is necessary to develop:

- Loan guarantees. Such guarantees make it possible to avoid the risk of insolvency of the borrower that is often a necessary condition for the loan or credit provision.
- Insurance covering the risk of changes in the economic policy. The payback period of investment in energy facilities is generally significant. If during this period unfavorable changes in the economic policy of the recipient state (for example, the revision of tariffs and subsidies) occur, the project can become marginal or even unprofitable. Therefore, it is necessary to have reliable insurance against such risks.
- The mechanism of currency risk management. Upon receipt of the revenues in local currency generated by the project there is a risk that depreciation of the currency will increase the cost of credit payments in foreign currency. You need a reliable solution to currency risks so that they would not exert undue influence on the project.

In the field of direct investment constructive role may be played by capital investment through flexible forms of mutual funds — pledge funds, subordinated equity funds [11, p. 2–3].

*The project development.* In the future demands for the complexity of the design decisions that must take into account environmental and other aspects will increase. For example, when making a decision about the production of energy at the coal-fired plant, you must consider the following conditions and circumstances:

- 1) There is a demonstrated developmental impact of the project including improving overall energy security, reducing power shortage, or increasing access for the poor.
- 2) Assistance is being provided to identify and prepare low-carbon projects.
- 3) Energy sources are to be optimized, looking at the possibility of meeting the country's needs through energy efficiency (both supply and demand) and energy conservation.
- 4) After full consideration of viable alternatives to the least-cost (including environmental externalities) options are to be considered when the additional financing from donors for their incremental cost is not available.
- 5) Coal projects will be designed to use the best appropriate available technology to allow for high efficiency and, therefore, lower GHG emissions intensity [9, p. 22].

*Implementation of projects.* If we consider the implementation of projects from the point of view of the most rapid growth of renewable energy capacity (which does not create a negative impact on the environment), there are certain barriers arising from the peculiarities of the sector. Due to the fact that the renewable energy sector is relatively young, investors don't have exhaustive data about the investment results. This creates a barrier that hinders the implementation of projects.

Renewable energy projects are relatively capital-intensive, but still their barrier scale is considerably smaller than in conventional power sector. Therefore, RE power plants creation requires a large initial investment and significant transaction costs per unit of power (permits, licenses, and so on).

*The company's production activities.* Barriers also act on the operational stage of the project, i.e. after an increase of renewable energy capacity. Financial results decrease as the price of fossil fuels remains relatively low, and their financing, despite the decline in recent decades, remains significant. Therefore, the traditional generation capacity has advantages that are not entirely market-based.

This implies that renewable energy alone is only marginally competitive with traditional energy, and can develop with the strong government support, including subsidies. But it also creates risks of regulation, for example, the risk of cancellation of subsidies or the risk of unexpected changes in industry standards [12, p. 39–42].

In the coming decades, developing countries will meet a difficult task of optimizing the development of their energy sector. Only optimization can lead to the growth of investments in the energy sector in which developing countries are in dire need. The comprehensive optimization should include:

- 1) Development of integrated planning in the energy sector, the development of policies and tools for energy, improvement of network of executive and supervisory bodies.
- 2) Integration of the development of traditional and alternative energy sectors with a wide range of instruments, providing a structural shift in favor of the alternative sector, increasingly referred to as “sustainable energy” (SE):
  - Agreements among governments and businesses to promote/stimulate SE.
  - Information about SE for target groups.
  - Special measures to facilitate SE projects, including emission reduction targets, shorter permitting processes and increased grid capacity/connection.
  - Fixed share of renewable energy in the electricity mix of consumers, suppliers or producers.
  - Direct financial support: Production and investment subsidies,
  - Fiscal incentives: Tax relief, Tax credit, Flexible/accelerated depreciation schemes, Energy and emission taxes:
  - Accessibility of finance: governments provide loans directly to projects or companies producing SE, government investments or participation in SE projects [12, p. 54].
- 3) More active inclusion of questions of improving energy efficiency in the agenda of energy development.

With some reservations, one can say that a promising line of development of the energy sector is the following: the combined development of traditional and alternative energy with priority for the latter and the deployment of energy efficiency at the scale of national economies. However, regional and country differences can impose strong differences in the course and capacity of this process.

## Conclusions

1. The lack of investments needed to solve the food problem and other important socio-economic problems of developing countries, are related not only to the limited sources of financing investment. The barriers at different stages of the investment process and a mismatch in the relationship between the participants of this process can cause additional difficulties. Using the analytical tool “investment ecosystem” we can systematically analyze the barriers and obstacles in order to determine the tasks for optimization of the investment process.
2. In agriculture, the creation of a favorable investment climate is significantly associated with government policies in four areas: production, investment, output, capital and economic regulation. A key role is played by the activity of the state in R&D, through which the developing countries can improve agricultural technology, complementing the import of technology with their own know-how. The commercial success of such projects provides an important precondition for the development of agriculture and is related to the orientation of the projects to three strategic themes: increasing revenue, reducing costs and improving access to markets. Investment financing can be improved, if gaps in the demand and supply of contingent resource volumes, terms and rates will be eliminated. Some progress can be achieved through agricultural investment funds and other specialized financial institutions.
3. In energy sector the most promising trend is represented by the shift to renewable energy sources in combination with increasing energy efficiency. This shift brings together several important advantages: environmental cleanliness and safety of electric power generation, virtually no dependence on fossil fuel, a reduction in the required installed capacity by increasing generation efficiency, reduction of losses in transmission lines and distribution networks, savings of consumer costs through a range of measures that improve energy efficiency.

In some developing countries (particularly in Asia and Latin America) there are all necessary preconditions for the implementation of this promising trend. For this the governments need to develop stimulus packages adapted to the conditions of respective national economies. Another important option requires broadening the sources of investment financing and increase of innovativeness and flexibility in the financing schemes.

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