

# Rural Technology Park – A New Inclusive Rural Development Concept for the Reduction of Poverty in Rural Afghanistan

Sayed Nasrat\*  
S Fakhrudin Sadat\*\*  
Hidayatullah Sapi\*\*\*

## Summary

This paper explores the Rural Technology Park (RTP) as a new inclusive rural development concept for the reduction of poverty in rural Afghanistan. The analysis of this paper is based on literature review, interviews, focus group discussions and field observations. The primary data were collected between 2010 and mid-2017 from 9 out of 34 provinces in Afghanistan. Despite the efforts of the donor community and the Government of Afghanistan, rural poverty is on the rise in the country. Afghanistan is an agrarian country and most rural people have access to varying resources in their locality. However, they do not have adequate knowledge, skills, appropriate and affordable rural technologies, access to finance and markets to better use the available resources. Therefore, in 2009 the concept of the RTP was launched by the Ministry

of Rural Rehabilitation and Development (MRRD) to contribute to poverty reduction. The RTP works in the sectors of Small and Medium Enterprises (SMEs) development, renewable energy, water supply and sanitation, and rural housing. Yet rigorous, substantial and timely support has not been given to the RTP by the MRRD and its key stakeholders. This paper finds that the RTP as a multi-functional concept is crucial in contributing to poverty reduction in rural Afghanistan. It equips poor rural people to come out of poverty and have endogenous development, social capital, and Community-Based Enterprise (CBE) development elements as its key features.

**Keywords:** RTP, Afghanistan, Rural poverty, Endogenous development, Social capital, CBE

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## 1. Introduction

Figures show that global extreme poverty rates have been much reduced over the last two decades. However, poverty reduction has remained the greatest global challenge (United Nations, 2017a). Globally, poverty is mainly a rural phenomenon because the opportunities of access to basic services are generally limited in rural areas (Sassen, 2009, p.151). Poverty has many faces and affects people in different ways across countries and regions. For example, South Asia has the largest rural

\* Nasrat is a former researcher and project supervisor of the RTP/MRRD. Nasrat holds MS Degree in International Cooperation Policy (Development Economics division) from Ritsumeikan Asia Pacific University, Japan.

\*\* Sadat is working with the RTP/MRRD since 2009; currently he is working as a coordinator of the RTP. Sadat holds MSc Degree in Environmental engineering from Lodz Technical University, Poland.

\*\*\* Sapi is a former researcher and project supervisor of the RTP/MRRD. Sapi holds MSc Degree from University of Agriculture Faisalabad, Pakistan.

population (500 million) living in extreme poverty compared to any other region across the world. Four-fifths of all extremely poor people in South Asia live in rural areas (International Fund for Agricultural Development, 2011). Recently, Annette Dixon, the World Bank South Asia Region Vice President said: "While there has been impressive progress made towards reducing poverty due to strong growth and resilience in South Asian countries, the region is still home to a very large number of the poor" (World Bank, 2015).

Within and outside of South Asia, in Afghanistan there are approximately 39 percent of Afghans living below the national poverty line (Central Statistics Organization [CSO], 2016). This has ranked Afghanistan among the poorest countries in the world. Figures show that between 70 and 80 percent of Afghans live in the rural areas, which has made rural poverty higher than urban poverty. According to Poverty Status Update report<sup>1</sup> "four out of every five poor Afghans live in rural areas" (Ministry of Economy Islamic Republic of Afghanistan, 2015, p. 15). Since Afghanistan is an agrarian country, the income of rural people is mainly dependent on agriculture and livestock.

Despite the interest of the international community and the Government of Afghanistan (GoA) to poverty reduction, the latest figures<sup>2</sup> show that rural poverty is about 43 percent in Afghanistan (see Wieser, Rahimi & Redaelli, 2017). This is a 14 percent increase in rural poverty compared to earlier years. Noticeably, there are several

inter-linked factors contributing to (rural) poverty in Afghanistan (see Section 3).

Considering its rural poverty status, we can argue that Afghanistan's national development is impossible without necessary improvement in the livelihoods of the people in the rural areas. There are various national rural development programs operating in Afghanistan with the aim of eradicating poverty, especially under the mandate of the MRRD (see Section 3.1). However, the problem with these programs is that they do not specifically focus on identification, selection, transfer facilitation and demonstration of appropriate, cost-effective and locally made rural technologies to the rural poor. Hence, to cover this gap, the concept of the RTP was initiated in 2009 under the mandate of the MRRD.

Interestingly, the RTP will contribute to improving sustainable rural development through identifying and facilitating the transfer of appropriate and cost-effective rural technologies to farm and non-farm sectors. The significant elements of the RTP include improving rural innovation, enhancing knowledge and skills, local community's collective actions, networking and promoting entrepreneurial activities for the rural poor, and helping landless farmers and women to better use the available local resources in their locality. Also, these elements can be associated with the theories of endogenous development, social capital and Community-Based Enterprise (CBS).

The concept of the RTP has not received the rigorous, substantial and timely support it needs by the GoA, especially by the MRRD and its key stakeholders. The main reasons are the attributes of the concept itself, it is very technical and new in the context of Afghanistan. These two characteristics have made it difficult for many people within and outside the premises of the MRRD to know the significance of the RTP in rural poverty reduction. Even some officials within

<sup>1</sup> This Poverty Status Update report is based on the analysis of the National Risk and Vulnerability Assessment (NRVA) 2007/08 and 2011/2012 together by the Afghan Ministry of Economy and the World Bank..

<sup>2</sup> This poverty status update report is based on the Afghanistan Living Conditions Survey 2013-14, 2011-12, and on the Risk and Vulnerability Assessment 2007-08. At the time of writing this paper (in 2017) the cited figures were the latest in Afghanistan.

the ministry perceive the RTP a parallel concept to the Afghanistan Rural Enterprise Development Program (AREDP), which is not true. Therefore, the purpose of this research article is to explore the RTP as a new inclusive rural development concept for the reduction of poverty in rural Afghanistan. To do so, it addresses the question of *“How important is RTP as a new inclusive rural development concept for the reduction of poverty in rural Afghanistan?”*

## 2. The Concept of the RTP

Technology is as much as a factor of production as land, labor, capital and entrepreneurship. Today, many appropriate and cost-effective rural technologies are available but have not reached the people. We need appropriate and affordable technologies, blending the traditional with modern so that the possibilities of their dissemination could be explored, but there is no mechanism to collect and study such interventions or use in practice. Therefore, there is an urgent need to develop a mechanism to pool the available technologies and offer options to different users. Moreover, it is also necessary to enable interaction between developers and users of technologies. This could help us find, transfer appropriate and affordable technologies on the local level to make economic growth processes more inclusive to improve sustainable livelihoods, employment and increase income of rural people. To do so, the RTP is a suitable concept (MRRD, 2009).

The RTP was established for the first time in the late 1990s in Hyderabad city of India by the National Institute of Rural Development and Panchayat Raj – NIRDPR (NIRDPR, 2013/014). The RTP is a bottom-up approach, aiming to uplift rural people in all aspects of life, including capacity building, employment and income generation, social networking, enterprise development

through the dissemination of appropriate and cost-effective technologies.<sup>3</sup> According to the Indian Institute of Technology, rural technologies can help to dramatically cut the incidence and severity of many developmental problems. “It can help to improve the life of the poor and disadvantaged people, by permitting more and better services, transforming economic activities and reducing inequalities” (Jhunjhunwala & Ramachander, 2006, p. 36).

The RTP of India works in different sectors including capacity building to enable poor people to take control over their development process, entrepreneurship, renewable energy, rural housing and sanitation. For each sector, RTP houses one or more small-scale enterprise units such as vermicomposting, natural dye, handmade paper, bio-pesticides, solar energy, wind energy, food processing, fashion technology, ready-made garments, home based products, showcasing different housing technologies, among others (National Institute of Rural Development [NIRD], 2011/012).

### 2.1. How the rural technologies are selected, demonstrated and disseminated

The RTP selects rural technologies on the basis of cost-effectiveness/capital saving, energy efficiency/energy saving, labour-intensive/employment generating, equity orientation, scale neutrality, eco-friendly and less polluting. These micro and macro level considerations for the selection of technology take into account livelihoods, food/nutritional and social security with access to basic rural facilities. The facilities include housing, drinking water & sanitation, education, lighting, health, roads/transport, connectivity, marketing and irrigation. All rural technologies in RTP shortlisted by Science & Technology Cell, and those technologies recommended by Action Research groups

<sup>3</sup> Authors visit and meetings with the RTP/NIRD officials, India, 2010.

on their relevancy/appropriateness and suitability after field demonstration in a rural area.<sup>4</sup>

RTP uses different approaches for the demonstration and dissemination of rural technologies to the rural population. According to the RTP/NIRD officials, some key approaches are as follows:

- Carry on abreast with the innovations and make available a platform for periodic exchange of ideas between research institution, scientific organizations, inventors, marketing agencies and financial institutions.
- Carry out actual technology transfer to the selected villages through action research projects, pilot projects and through adopting villages.
- Document practical aspects of transfer of technology covering aspects like project costs, accessibility, acceptability, maintenance, profitability and marketing etc.
- Develop a conglomerate of technology developers and support environment/delivery systems for accelerating the transfer of technology, process through a careful, regular monitoring/stock taking mechanism for the appraisal of various technologies.
- The RTP establishes units for the transfer of all successful field tested technological options suited to various diverse social groups and suitable to all the geophysical conditions across rural India.

Additionally, the RTP/NIRD officials explained that the RTP has selected, demonstrated and disseminated hundreds of rural technologies in different sectors, which has played a significant role in rural employment, income generation activities and up-skilling for the rural poor. Significantly, the Government of India (GoI) is to set up

<sup>4</sup> Authors visit and meetings with the RTP/NIRD officials, India, 2010.

such parks in five African countries: South Sudan, Malawi, Ivory Coast, Congo and Zimbabwe (Ifthekhar, 2014), where rural poverty is a major national problem.

### 3. Brief Overview of (Rural) Poverty in Afghanistan

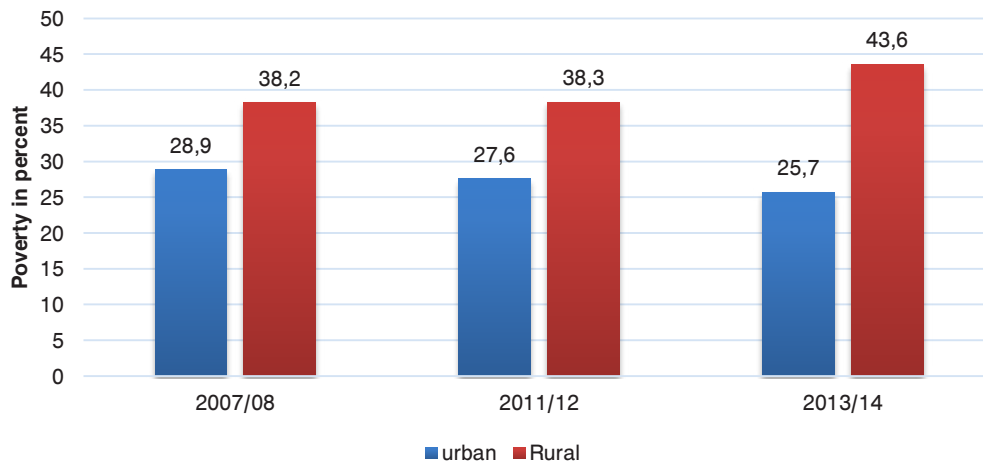
Poverty is a multi-dimensional phenomenon, and a number of factors contribute to its endemic nature in various developing countries. These factors include income, hunger, social exclusion, poor health, discrimination, and lack of access to basic services (United Nations, 2017b), exploitation, and illiteracy, and war/conflict (Ajisafe, 2016). One of the main reasons for poverty in Afghanistan is about four decades of long-term and ongoing conflict, which has made a resource-rich country one of the poorest countries in the world. In general, poverty/unemployment and conflict are likely related to each other: if one decreases, the other also decreases, and vice versa. According to a study by Oxfam, 70 percent of Afghans see poverty and unemployment as the major driving factor of the conflict in Afghanistan (Jackson, 2009). And poverty kills more Afghans than armed-conflict (United Nations Office of the High Commissioner for Human Rights [UNOHCHR], 2010).

Undoubtedly, billions of development aid in Afghanistan from the international community has created jobs in the public service sectors (e.g., health, education, etc.) but did not elevate productivity in the agriculture sector, which employs the majority of poor Afghans. According to the CSO, almost 40 percent of Afghans are not gainfully employed, which include 27 percent of youth. On the other hand, about 39 percent are living below the national poverty line or unable to satisfy their basic food and non-food requirements. This shows about a four percent increase in the national poverty rate (CSO, 2016).<sup>5</sup>

<sup>5</sup> At the time of writing this paper (in 2017), the data by the CSO were the latest in Afghanistan.

Poverty is prevalent across rural and urban areas in Afghanistan. The Figure below, shows that rural communities across

the country are getting poorer and the incidence of poverty (43.6 percent) is severe in the rural areas compared to urban areas.



**Figure 1:** Rural vs Urban Poverty (in percent) in Afghanistan

Source: Wieser et al (2017)

There are different inter-linked factors contributing to (rural) poverty in Afghanistan, many of which are beyond the control of rural people. These factors include long-term and ongoing conflict, endemic corruption, natural disasters, lack of viable poverty reduction strategy, lack of skills, knowledge/literacy, access to finance, markets and appropriate and affordable rural technologies by the rural people to better use the available local resources to escape from poverty.

Notably, about 75 percent of poor people are illiterate in Afghanistan and they face higher unemployment (8 percent) and underemployment (41 percent). They are more likely to work in agriculture (43.6 percent) or in the informal sector (84.3 percent). Furthermore, in Afghanistan poor people are less likely to have access to electricity (63.8 percent), potable water (40.3 percent), and sanitation (2.8 percent) (see Ministry of Economy Islamic Republic of Afghanistan, 2015).

Poverty increases progressively with the increase in household size- more children and youth, households with an illiterate and unemployed head, head of households employed in the informal sector, especially in agriculture and construction sectors (CSO, 2016). Additionally, poverty increases progressively with the death of breadwinner of a household, increase in the number of disabled people, the Internal Displaced Persons (IDPs), and forcible return of refugees to Afghanistan.

### 3.1. Fighting rural poverty

In order to eradicate all forms of poverty, the GoIRA with the donor community has formulated several national programs and strategies over the last decade. Among others, in 2006, the Afghanistan National Development Strategy (ANDS) formulated. This five-year (2008-2013) strategy was a Millennium Development Goals-based plan that also serves as the country's Poverty Reduction Strategy Paper (PRSP). Recently the Afghanistan National Peace



and Development Framework (ANPDF) developed. The ANPDF<sup>6</sup> is also a five-year (2017-2021) strategic plan to end poverty and make sure security and stability across Afghanistan.

In Afghanistan different line/sectoral ministries (e.g., the Ministry of Public Health, Ministry of Education, Ministry of Women's Affairs, Ministry of Agriculture, Irrigation and Livestock - MAIL, etc.) and the MRRD are in charge of poverty reduction. These ministries have the support of various bilateral and multilateral donor agencies.

Among all organisations, the MRRD has a very crucial role in poverty reduction and rural development across the country. It has formulated some national programs to contribute to reducing poverty and/or promoting socioeconomic development in Afghanistan (see Table 1). The MRRD has the presence in all of the 34 provinces, delivers its main programs in line with national strategies/programs, including the National Priority Programs (NPPs), the ANDS/PRSP and the ANPDF.

**Table 1: The MRRD's National Programs**

Program	Main Objective (s)
<b>Citizen Charter Afghanistan Program - CCAP</b>	- To strengthen, expand and support Community Development Councils (CDCs) as effective entities for economic and social development as well as good governance in Afghanistan.
<b>Afghanistan Sustainable Energy for Rural Development - ASERD</b>	- To increase the access to thermal energy and electricity through a technology neutral approach to rural communities in Afghanistan.
<b>National Rural Access Program - NRAP</b>	- To establish a quality rural road network that connects all villages to basic rural infrastructures and services (e.g. markets, health care and schools). - To provide employment opportunities through using labour-intensive methods and a private sector-led approach for all works. - To enhance the capacity of communities and the private sector to manage, deliver and maintain public transportation facilities through on-the-job capacity development.
<b>Rural Water Supply, Sanitation, and Irrigation Program - Ru-WatSIP</b>	- To improve access of the rural population and improve potable quality of drinking water (WHO standards). - To make all villages/rural communities in the country, 100 percent free and fully sanitized. - To provide hygiene education with proper follow-up activities in schools, households and communities for sustained behaviour change and adoption of safe hygiene practices
<b>Comprehensive Agriculture and Rural Development Facility - CARD-F</b>	- To increase licit rural employment and income. - To stimulate private sector investment in agriculture sector in Afghanistan. - To transform agriculture from subsistence to commercial. - To strengthen selected agriculture Value Chains in Afghanistan.
<b>Afghanistan Rural Enterprise Development Program - AREDP</b>	- To improve sustainable employment opportunities and income of rural men and women through supporting rural enterprises (e.g. business development services, access to finance, and improving market linkages and value chains.)

Source: Compiled by the authors from various MRRD documents

<sup>6</sup> For more details about the ANPDF see <http://extwprlegs1.fao.org/docs/pdf/afg148215.pdf>

Among the current national programs' of the MRRD, the Citizen Charter Afghanistan Program and the Afghanistan Sustainable Energy for Rural Development are the newest - launched in 2016. The Citizen Charter Afghanistan Program is a substitute for the National Solidarity Program (NSP). The NSP was the largest national program in the country. President Ashraf Ghani's advisor, Guggenheim said:

We had to close the NSP to open up the door for a new idea. But for that next step in community development to happen, the government would need to change some of the overarching systems that it was used for planning, budgeting, and performance assessment (Collaboration for Development, 2017).

According to the World Bank, the Citizen Charter Program will support the first phase of Afghan Government's ten-year Citizens' Charter based on National Priority Programs (NPPs). The first four-year budget for this program is only USD 628.00 million. Of these sums, USD 500 million is provided as a grant by the donors and the remaining budget is expected as co-financing from the Afghan government's own resources. The program aims to give access to potable water, improve service delivery in education, health, electrification and rural roads to 3.4 million people. Additionally, it aims to increase citizen satisfaction and trust in government, a 35 percent return on investment for infrastructure projects, better integration of the IDPs, disable and poor people including women (World Bank, 2016).

The Afghanistan Sustainable Energy for Rural Development program of the MRRD is also a National Priority Program, supported by the United Nations Development Program (UNDP). This program launched after the closure of the National Area Based

Development Program (NABDP) of the MRRD as of its final phase of implementation. The program is for about four years, during this period, it will bring sustainable energy to over 50,000 households. To do so, a total of USD 50.00 million is allocated for its implementation (UNDP, 2017).

The AREDP, established in 2010, is a multi-million and multi-donor funded program. This program has two components: (1) community-based enterprise development and SME development; and (2) management (e.g., program management, research support etc.). As of March 2017, the program is operating in five out of thirty-four provinces throughout the country (AREDP, 2017a). Since 2010, the program has established 5066 Saving Groups, 1290 Enterprise Groups and supported more than 500 SMEs. Moreover, with the support of AREDP, 514 Village Savings and Loan Associations (VSLA) established, thousands of jobs were created and more than one thousand people with disabilities supported (AREDP, 2017b).

Despite the joined efforts of the donors, the MRRD and the line ministries, the increase in rural poverty rate (see Figure 1) shows that the MRRD's national programs' contributions with regard to poverty reduction is not quite effective. Generally speaking, this could be associated with several factors, including the project-based activities of the MRRD, where most of the local people are temporarily employed (e.g., the construction of rural roads, protection walls, irrigation projects, etc.). Some projects in different ministries, including the MRRD are supported by donors are donor driven despite placing poverty reduction as a central goal (Waldman, 2008; Emmott & Jawhary, 2014). On the other hand, some projects are even not promptly or accurately implemented due to many reasons, including high levels of insecurity and endemic corruption in Afghanistan.

#### 4. RTP in Afghanistan

Rural Afghanistan is largely dependent on agriculture and the landless people, herders, small-scale farmers and households with women as their heads bear the largest burden of poverty (Denning, 2017). Therefore, raising productivity in the agriculture sector will help in the reduction of rural poverty.

In order to speed up the development process in Afghanistan, including rural development, the former Afghan President Hamid Karzai visited India in 2006. Notably, India has a rich experience in rural development, which has also helped the country in national poverty reduction (World Bank, 2007). In India, Karzai visited RTP/ National Institute of Rural Development (NIRD) and showed interest in different models of rural technologies including solar energy and affordable rural housing. At the RTP, Karzai said, “we request India to help us to get acquainted in the way you work with your rural areas so that we can copy the same” (India Review, 2006, p. 3).

In 2008, the implementation of the New Delhi Declaration was signed by the MRRD/ GoA at the Centre on Integrated Rural Development for South Asia and the Pacific (CIRDAP) ministerial retreat meeting in India. During the meeting, the Indian experience and lessons learned for making the economic process more inclusive through bringing rural technologies to the doorstep of rural households and strengthening decentralized government were presented (MRRD, 2009). After the meeting, the debate on the RTP establishment was initiated by the Afghan-Indo delegates. Consequently, a Memorandum of Understanding (MoU) was signed between the Afghanistan Institute for Rural Development (AIRD) department of the MRRD and the NIRD of India.

In 2009, based on the MoU the concept of the RTP was officially initiated in

Afghanistan under the auspices of the AIRD. With the total budget of more than USD 1 million, the RTP project was initially fully funded by the Spanish aid agency - AECID. Due to the unavailability of suitable land, the construction of the RTP was delayed until mid-2012. Later, the MAIL allocated (about 12 acres of) land for the construction of the RTP in Dehsabz district of Kabul.

The objectives of the RTP are to set up the current situation of traditional existing and new rural technologies and test their applicability and suitability to local conditions of Afghanistan; undertake pilot projects of proven technology, which has not yet been used in Afghanistan; check the status of such technology and assess its employment potential; and identify appropriate technologies and facilitate their transfer to rural areas.

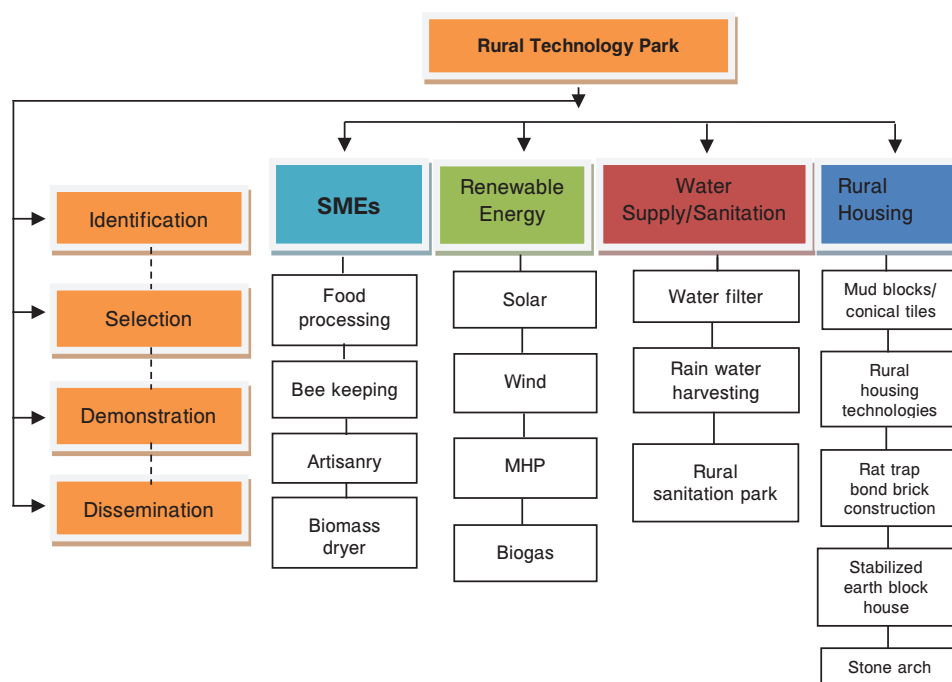
Like all other MRRD programs mentioned earlier, the approach of the RTP is different, but in general it is in line with the main goal of the MRRD - to improve human security and fair growth, and reduce poverty in rural Afghanistan (MRRD, 2010). Importantly, at the top-level, the concept of the RTP fits within the ANDS pillar for rural development and on the local level the concept of the RTP is relevant to the needs of farmers, landless and poor rural people including women.

The majority of rural Afghans have some traditional skills and knowledge of employment and income generating activities or SME development. Hence, there is a great need for appropriate and affordable technologies, blending the traditional skills and knowledge with modern ones to use the available resources in an effective and sustainable way. For example, Afghanistan has renewable energy resources such as wind, solar, biomass but still rural communities lack access to electricity (see Section 3).



Moreover, most of the farmers do not have access to cold storage, solar dryers, solar heaters, solar water pumps, and other necessary technologies for raising agriculture productivity. Certainly, the lack of these kinds of technologies increases incidence of rural poverty. Therefore, RTP is a suitable model to contribute in solving such type of problems in rural Afghanistan.

To this effect, the Figure below, shows that the RTP Afghanistan focuses on four important sectors: SMEs, renewable energy, water supply and sanitation, and rural housing. These sectors selected based on MRRD national programs, the needs of poor people in rural Afghanistan and the overall importance of these sectors in contributing poverty reduction.



**Figure 2:** Main sectors/units, sub-sectors and functions of the RTP<sup>7</sup>

Source: Developed by the authors

#### 4.1. Identification, Selection, Demonstration and Transfer/Dissemination of RTs

In 2010, the RTP team started identification and documentation of existing traditional rural technologies in different provinces through a survey called "Documentation of Rural Technologies." Consequently, as of mid-2017, about 1500 rural traditional technologies from

21 provinces out of total 34 provinces were identified and documented, and the remaining 13 provinces will be surveyed in the coming years.

Of total identified and documented technologies, the most appropriate, affordable, employment and income generating ones are compiled as Directory of Rural Technologies (DRTs - 1st volume). The DRT was prepared for the first time in Afghanistan, which is an important and informative document for entrepreneurs,

<sup>7</sup> The sub-sectors may change based on the needs of the rural people and the budget availability.

rural people, NGOs and donors to know about RTs in Afghanistan. The information in the DRT is about the cost, description, machinery/tools, source/provider, training opportunities, and any other specification of rural technologies in Afghanistan. Additionally, through the survey the RTP team shared the concept and significance of the RTP about poverty reduction with the provincial directorates of the MRRD, the social workers, Saving Groups, Enterprise Groups, among others.

At the time of writing this paper, about 38 technologies from three out of four sectors were selected for live demonstrations in the RTP compound in Kabul. Most of these technologies belong to the renewable energy sector, such as the solar dryer, stove, pump, and heater, among others. The selection of appropriate technology models is important for ensuring sustainable rural livelihoods. Therefore, the RTP is selecting technologies on the basis of cost-effectiveness/capital saving, energy efficiency/energy-saving, labour-intensive/employment generating, eco-friendly & less polluting. Technologies are first demonstrated at RTP then they will transfer to rural communities based on the need and demand of rural people. In order to facilitate the transfer and dissemination of rural technologies, RTP uses several different approaches including;

- *Demonstration of the technologies and free training:* The RTP demonstrates various technology models and offer free training to interested rural poor or entrepreneurs. Rural people can freely visit the park, select, and buy any available technologies of their choice. They can buy technologies in different ways i.e. as a group, individually, from village saving or loan associations and so forth. Also, the RTP helps rural people or entrepreneurs with the procurement procedure of technologies, maintenance,

training on how to run/start an enterprise, access to market, among others.

- *Collaboration and networking:* Through collaboration and networking with various stakeholders, including NGOs, donors, government organizations, private sector, and community councils, the RTP also facilitates the transfer of appropriate and affordable needs based technologies to the rural communities. For example, most recently a MoU was signed between RTP and ASERD. The ASERD provides renewable energy to the rural households in Afghanistan.
- *Establishing of model villages:* This approach includes action research to select some villages in a few provinces and then turn them into model villages. So far about six villages have been almost identified in Nangarhar and Parwan provinces, but due to security, administration, and financial reasons they have not been converted into model villages.

For the model villages, we need to select site specific technologies, train Self Help Groups in skills to take up enterprise, and transfer necessary technologies with the support of the MRRD programs. This will help to bring required attitudinal and behavioral changes in the villagers' mindset through community mobilization. Moreover, field visits to a model village by villagers from neighboring areas would motivate villagers to buy rural technologies to carry out the similar approach.

Broadly speaking, technology transfer can equip the poor rural communities by empowering them with skills for employment and income generation. This strategy helps in poverty alleviation by transmitting skills and knowledge to the unskilled and uneducated poor for productive and sustainable employment and income.

## 4.2. Key Challenges of the RTP

The RTP as a new and technical concept in the context of Afghanistan has been facing a number of challenges that have slowed down its progress. First, insecurity is an impediment for the RTP team to easily find and visit local innovators, artisans, rural technology developers and users. Second, the RTP lacks rigorous, substantial and on time (financial) support to meet its objectives. Third, a lack of information on the concept of the RTP within the MRRD, line ministries and donors, has caused a dearth of collaboration and networking. Undoubtedly, these challenges have negative effects on the overall progress of the RTP. Therefore, understanding the immense significance of the RTP concept by all stakeholders could largely help the project to meet its objectives.

## 5. Method

We used a qualitative research method to explore how important is RTP as a new inclusive rural development concept for the reduction of poverty in rural Afghanistan. To gain a better understanding of the RTP's role in rural poverty reduction, we used methodological triangulation. The triangulation method is used in "researching the less explored or unexplored research problems" (Hussein, 2009, p. 8). According to Golafshani (2003), the triangulation method maximizes the validity and reliability of a qualitative study.

The data were gathered from primary and secondary sources. The primary data were collected through semi-structured interviews, field observations and focus group discussions in nine of all 34 provinces between 2010 and mid-2017.<sup>6</sup> Also, the primary data included authors' visits and

<sup>6</sup> The primary data were collected during the survey of documentation of rural technologies in the cited provinces and during the identification of the model villages.

meetings with RTP/NIRD officials in India in 2010. We interviewed 117 people and conducted five focus group discussions in the province of Kandahar, Nangarhar, Herat, Maidan Wardak, Parwan, Panjshir, Paktia, Ghazni and Logar. The research interviews and group discussions conducted with farmers, artisans, entrepreneurs, saving groups, Self-Help Groups, local innovators, and a number of DDAs, CDCs, and NGOs.

The secondary data were gathered through reviewing existing literature, strategy/policy papers, reports, governmental documents and websites. The key limitations of data collection were lack of earlier research studies on the topic and volatile security situation, which made it impossible to observe some villages and interview some artisans, local technology innovators, and users.

## 6. Findings and Discussion

### 6.1. Endogenous Development

The overall aim of the RTP is to improve sustainable rural livelihoods through capacity building, networking, research, and facilitation of transfer of appropriate and affordable technologies to farmers, landless and poor rural people including women. In this vein, the RTP is employing local available resources, knowledge and skills based on local needs of rural people. Therefore, the RTP could be viewed as having an endogenous instead of exogenous element in its key features. The concept of the endogenous development model emerged in the late 1970s. This model developed as a result of disappointment with conventional exogenous models based on neoclassical or Keynesian theories. Contrary to the exogenous model, the endogenous model views the rational and sustainable use of local resources to decisive importance (de Noronha, Morgan & Nijkamp, 2006).

The endogenous development is the ability to innovate on the local level. Given

that it based on the use of local resources, it comprises the capacity to innovate, the ability to check the accumulation process locally and the existence of productive interdependencies on the local level (Camarero Izquierdo, Carrión & Gutiérrez, 2008). The endogenous development theorists take the view that local economic development is not determined by the capacity of a country to attract foreign firms, but a country to generate the conditions of transformation of its own productive structure (Dinis, 2006). According to Ray, endogenous refers to the term “bottom-up”, “grass roots”, he writes that endogenous development “subscribes to a belief in the innate capacity of people in a locality to discover within them and their locality for the improvement of their socioeconomic well-being” (Ray, 2000, p. 447).

Based on our interviews with some local innovators and experts in different provinces, we found that they have the innate capacity to innovate in their own right. However, they have not yet received necessary needs-based support to improve their capacity. For example, Sediq Mokhtari - a local innovator, said, “I have developed several cost-effective technologies, including solar heaters and solar pumps, but neither the GoA nor any NGO has supported me to expand and transfer my skills and knowledge to other local people.” Moreover, Usman Safi, an expert on home-based Ketchup and Tomato Paste Making, Sail potato chips production, and Riaz Packaging - for agriculture products pointed out similar concerns. Additionally, we found that most of rural innovators, experts and entrepreneurs are in urgent need of capacity building/training, access to finance and market, knowledge and skills up-grading, and renewable energy to use available local resources efficiently.

MRRD has provided most of the mentioned services to the rural poor, but their problems have not yet been solved.

For example, the NABDP was providing renewable energy, but it had largely ignored the cooking and heating needs of local households. This gap was covered by the ASERD but it does not offer capacity building/training opportunities for the rural people on renewable technologies (see Section 3.1).

On the other hand, the AREDP is supporting rural SMEs through its saving groups, loan association, and capacity building/training activities, among others. However, it does not transfer and disseminate rural technologies to the rural poor. Therefore, under the concept of the RTP, the MRRD can overcome these gaps.

Interestingly, the RTP enables rural local innovations through various services, including free electricity and free space for local experts and innovators to produce their products within the RTP compound in Kabul. In return, these experts will offer free training to other interested villagers. Undoubtedly, this will enable small-scale farmers, landless, local innovators and rural poor to take part productively in the local economic development. The local experts will select from the DRTs considering their experience and knowledge relevant to any of RTP sectors/units. Hence, it is worth mentioning that RTP is a rural innovation, networking, research and capacity building center for contributing to rural poverty reduction/rural development in Afghanistan.

Generally speaking, capacity building/up-skilling of the local population could encourage local investment, local initiatives, determined, led, and controlled by local people and communities, to improve and ease the life in rural Afghanistan. Local investment in any of the RTP units can be made individually or as a group. In either way, access to finance is among the essential parts. More broadly, finance is the lifeblood of any firm and greater access to finance allows entrepreneurs to expand production

level, buy new technologies or upgrade equipment, and hire more employees. Unfortunately, in Afghanistan, access to finance is one of the key constraints to rural enterprise development. The Asian Development Bank (ADB) found that the present rural finance penetration by financial institutions approximated at 0.3 percent of the Gross Domestic Product in Afghanistan (ADB, 2011). Therefore, the RTP can help anyone who has the skills and knowledge but needs access to finance to buy an appropriate technology to start a new or expand his/her existing business.

Notably, most of the interviewees preferred Islamic financing activity to avoid interest. Therefore, RTP makes collaboration with the MFIs and banks that offer services of Islamic finance - sharing risk between financial institutions and the people that use them. There are some banks that already have Islamic windows in Afghanistan such as Aziz Bank, Afghan United Bank, Ghazanfar Bank, New Kabul Bank, Afghanistan International Bank, Maiwand bank, among others. But "Afghanistan could have a new banking law approved by parliament in a few months, including provisions for Islamic products" (Sayegh & Vizcaino, 2015). This could further attract depositors and increase access to finance for many people, including (rural) entrepreneurs.

In Afghanistan markets are largely dominated by Chinese, Pakistani, and Iranian products. When interviewed, the owners of local and home-based enterprises pointed out the competition from the cited countries is among their main challenges. The interviewees suggested access to appropriate and cost-effective rural technologies, access to finance, linkage to markets, increase of tax on imported products and tight control on the borders to prevent the illegal import of products (especially from Pakistan and Iran) to improve the demand for locally

made products. Moreover, local producers complained that there is a lack of trust over domestic products in Afghanistan. Although some people consider locally made products as low quality, they are fresh and organic compared to most of imported products, said local producers.

To fill this gap, the concept of RTP includes annual Rural Technology and Crafts Mela (fair or festival). The Mela is an opportunity for rural people, including local producers, entrepreneurs, artisans, and rural SMEs to display their products and technology models. Furthermore, for the Mela, the RTP aims to invite people from different institutions/organizations, including government, private sector, NGOs/Civil Society Organizations and international organizations. Among others, this approach informs people about locally made products and build their trust over Afghan made products. Therefore, we argue that the RTP does not only take into account just the demonstration and facilitation of the transfer of appropriate and cost-effective rural technologies, but it also takes into account the social capital and community based enterprise development.

## 6.2. Social Capital and Community-Based Enterprise

The concept of social capital is defined by different scholars and institutions, so for the purpose of this paper we use the definition by Putnam. He defined social capital as "features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam, 1993, p.167). Studies have found that the effect of social capital is higher on well-being than other types of capital (see Grootaert, 2001; Narayan & Pritchett, 1997). Grootaert (2001) found that social capital is a real factor to reduce poverty, which has a positive impact on economic growth.



A survey conducted in 2,400 households in rural India, found a positive relationship between social capital and the level of villages' development (Krishna & Uphoff, 2002).

Notably, "social capital is one of the core concepts of endogenous development. It acts as the glue to hold the local community together for collective action" (Kanak & Liguni, 2005, p. 183). Collective actions, trust and networks are some vital factors for endogenous development, which can definitely contribute to poverty reduction.

In Afghanistan the concept of social capital in the context of rural development is new. Some good examples to cite are the CDCs, the District Development Assemblies (DDAs), the Saving Groups, the Village Saving and Loan Associations (VSLA) and the Enterprise Groups developed by the MRRD. The Saving Groups make up the VSLA. In interviews with a number of Saving Groups in Parwan and Nangarhar provinces, we found that they consisted of about 10 members. The members of the Saving Groups collect the weekly savings of a specific amount of Afghani (e.g., about USD 0.30 or 0.40). This makes them eligible to take out a loan and invest them in their household or community's socioeconomic development.

However, during the interview the majority of the Saving Group members reported the lack of availability of appropriate local technologies and easy access to market among their main challenges to start their own (home-based) enterprises and sell their products. The interviewees stated that purchasing of modern technologies is not only expensive, but also need high levels of expenses for electricity and maintenance. Therefore, the RTP could be an appropriate concept to meet the demand of rural entrepreneurs, including the Saving Groups. Notably, demonstration and facilitation of transfer of appropriate and cost-effective

rural technologies are beyond the aim of the AREDP. This shows one of the key differences between the RTP and the AREDP.

RTP can considerably create new or further expand the existing trust and networking among the Saving Groups. Moreover, it can encourage them to convert their social capital into economic capital at a grass-roots level. Various studies have found that social capital plays a significant role in poverty reduction (e.g., see Abdul-Hakim, Ismail & Abdul-Razak, 2010; Tenzin, Otsuka & Natsuda, 2015). Interestingly, the RTP can support both the Saving Group members and non-members to invest in income and employment generating activities in their locality. Hence, we can say that endogenous development and social capital have joint relationship. Also, together they can encourage and develop Community-Based Enterprises (CBEs), which in turn can contribute to rural poverty reduction.

Through bridging social capital, people from different groups such as Saving Groups, the CDCs, and the DDAs within a community move beyond their diverse self-interest toward mutually beneficial collective actions. This move is crucial for the endogenous development and the development of CBEs. According to Torri (2009), CBE forms as a result of a local community's entrepreneurial activity, by using their social resources, structures and networks.

Peredo and Chrisman argue that CBE provides a possible strategy for sustainable local development. CBE acts to the community as endogenous to the enterprise and the entrepreneurial method (Peredo & Chrisman, 2006). In general, CBEs are collective business ventures created and developed by local communities and aim to contribute to both local economic and social development, which are also among the key features of RTP.

## 7. Conclusions and Recommendations

This paper explored the RTP as a new inclusive rural development concept for the reduction of poverty in rural Afghanistan. We showed that the RTP is a multi-functional and important concept for the reduction of rural poverty. The RTP equips poor rural people with knowledge and skills, and facilitates the transfer/dissemination of appropriate and cost-effective rural technologies. Rural technologies are transferred based on the local conditions and needs of rural poor to help them to efficiently use the available resources in their locality. In addition, we found that RTP encourages and provides rural people the opportunity for local innovation, capacity building, sustainable income and employment generation activities to take part and contribute to the local economic development process.

Our findings show that RTP contributes to creating and promoting social capital among rural people, especially among the Saving Groups, the Enterprise Groups and the CDCs, which in turn have a positive effect on the development of CBEs. The RTP supports rural poor in different activities, including access to Islamic finance, display and sell their locally made products and technologies, and build business linkages, especially during the Mela. If the concept of RTP is implemented rigorously, it will also contribute to the growth of licit economy and prevent unemployed rural youth and ex-combatants to join with insurgent groups.

More broadly, the concept of the RTP is encapsulated by the saying: "Give a man a fish, you feed him for a day; teach him how to fish, and he will be able to feed himself for the rest of his life."

The RTP needs rigorous, substantial and timely support by the MRRD and all stakeholders. Therefore, this paper comes up with the following recommendations:

- The concept of the RTP should be further shared with all the MRRD programs and other line/sectoral ministries (e.g., the Ministry of Energy and Water, MAIL, Ministry of Commerce and Industries) international organizations/NGOs and the private sector. By doing so the stakeholders will better know the importance of the RTP, and in turn, it will get the necessary support.
- The MRRD should support the RTP in the procurement of necessary rural technologies and in the construction of the RTP compound. The immediate construction of the RTP compound will also help the RTP/MRRD to organize Rural Technology and Craft Mela.
- The RTP and the AREDP should have collaboration and networking. Among others, this could encourage the Saving Groups to set up the Enterprise Groups. Also, the RTP and the ASERD program should beef up their collaboration in providing renewable energy to the rural poor, including the entrepreneurs.
- The RTP should have collaboration with the private sector and the Islamic financial institutions to help the rural people to access interest free loans to start new or expand their existing enterprises.
- In addition to Kabul, similar RTPs should be constructed in the regional provinces such as Nangarhar, Herat, Kandahar and Balkh to help the rural poor across the country.

Among the cited recommendations, the first four of them will be achieved in the short and mid-terms. However, the last one will be achieved in the long term - based on the results of the RTP Kabul. The goal of the RTP is in line with the goal of the MRRD, the ANDS/PRSP and the ANPDF on the top-level and with the needs of rural poor people on the local level. Therefore, we expect the MRRD and its stakeholders to give the RTP

rigorous, substantial and timely support that is required for its success.

## References

- AREDP. (2017a). Quarterly Report, Jan-Mar. Ministry of Rural Rehabilitation and Development, Kabul.
- AREDP. (2017b). AREDP at a Glance. Ministry of Rural Rehabilitation and Development, Kabul.
- Ajisafe, R. A. (2016). Corruption and Poverty in Nigeria: Evidence from Ardl Bound Test and Error Correction Model. *Journal of Emerging Trends in Economics and Management Sciences*, 7(3), 156-163.
- Abdul-Hakim, R., Ismail, R., & Abdul-Razak, N. A. (2010). The relationship between social capital and quality of life among rural households in Terengganu, Malaysia.
- Camarero Izquierdo, C., Carrión, C. H., & Gutiérrez, S. S. M. (2008). Developing relationships within the framework of local economic development in Spain. *Entrepreneurship and Regional Development*, 20(1), 41-65.
- Central Statistics Organization. (2016). *Afghanistan Living Conditions Survey 2013-14. National Risk and Vulnerability Assessment*. Kabul, CSO.
- Collaboration for Development. (2017). What's Next for Community-Driven Development in Afghanistan? The World Bank Group. Retrieved from <https://collaboration.worldbank.org/groups/community-driven-development-global-solutions-group/blog/2017/06/28/what-s-next-for-community-driven-development-in-afghanistan> (Accessed on 8<sup>th</sup> July 2017).
- Dinis, A. (2006). Marketing and innovation: Useful tools for competitiveness in rural and peripheral areas. *European planning studies*, 14(1), 9-22.
- de Noronha Vaz, T., Morgan, E. J., & Nijkamp, P. (Eds.). (2006). *The new European rurality: strategies for small firms*. Ashgate Publishing, Ltd.
- Denning, S. (2017). Why is Afghanistan Poor? The Borgen Project. Retrieved <https://borgenproject.org/why-is-afghanistan-poor/> (Accessed on 30<sup>th</sup> August 2017).
- Emmott, S and Jawhary, M, A. (2014). Evaluation of the National Area-based Development Programme (NABDP) in Afghanistan. UNDP.
- ADB. (2011). Islamic Republic of Afghanistan: Rural Finance Expansion. Manila: Asian Development Bank.
- Grootaert, C. (2001). Does Social Capital Help The Poor? A Synthesis of Findings from the Local Level Institutions Studies in Bolivia, Burkina Faso and Indonesia. Local Level Institutions Working Paper Series, Working Paper No. 10. The World Bank.
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4), 597-606.
- Hussein, A. (2009). The use of triangulation in social sciences research: Can qualitative and quantitative methods be combined?. *Journal of Comparative Social Work*, (1).
- India Review. (2006). Karzai in India. Embassy of India Kabul. Retrieved from <http://eoi.gov.in/kabul/?pdf0280?000> (Accessed on 10<sup>th</sup> July 2017).
- International Fund for Agricultural Development. (2011). Rural Poverty Report. Retrieved from <https://www.ifad.org/documents/10180/c1bbf5fa-bdc3-4ea6-9366-d163b95b1180> (Accessed on 11<sup>th</sup> July 2017).
- Ifthekhar, J.S. (2014). NIRD to set up tech parks in five African countries. The Hindu, <http://www.thehindu.com/todays-paper/tp-national/tp-andhrapradesh/nird-to-set-up-tech-parks-in-five-african-countries/article6579760.ece> (Accessed on 20<sup>th</sup> July 2017).
- Jhunjunwala, A and Ramachander, S. (2006). Rural Technologies. *PITECH*, volume 1, issue 13.
- Jackson, A. (2009). The Cost of War: Afghan experiences of conflict, 1978-2009.
- Krishna, A., & Uphoff, N. (2002). Mapping and measuring social capital through assessment of collective action to conserve and develop watersheds in India. *The role of social capital in development: An empirical assessment*, 85-124.
- Kanak, S., & Iguni, Y. (2005). The role of social capital in endogenous development. *Journal of Rural Problems*, 41(1), 180-184.
- Ministry of Rural Rehabilitation and Development [MRRD]. (2009). Report of National Consultative Workshop on Establishment of Rural Technology Park. MRRD, Kabul.
- MRRD. (2010). Strategic Intent 2010-2014. MRRD, Kabul <http://mrrd.gov.af/Content/files/MRRD%20>

- Strategic%20Intent%201389-1393\_Final.pdf (Accessed on 20<sup>th</sup> July 2017).
- Ministry of Economy Islamic Republic of Afghanistan. 2015. *Afghanistan - Poverty status update: Overview (English)*. Washington, D.C.: World Bank Group
- Central Statistics Organization. (2016). *Afghanistan Living Conditions Survey 2013-14. National Risk and Vulnerability Assessment*. Kabul, CSO.
- Narayan-Parker, D., & Pritchett, L. (1997). *Cents and sociability: household income and social capital in rural Tanzania* (Vol. 1796). World Bank Publications.
- National Institute of Rural Development [NIRD]. (2011/012). Annual Report. NIRD. Ministry of Rural Development, Government of India.
- National Institute of Rural Development and Panchayat Raj [NIRDPR]. (2013/014). Annual Report. NIRDPR. Ministry of Rural Development, Government of India.
- Putnam, R. D. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton university press
- Peredo, A. M., & Chrisman, J. J. (2006). Toward a theory of community-based enterprise. *Academy of management Review*, 31(2), 309-328.
- Ray, C. (2000). Endogenous socio-economic development in the European Union—issues of evaluation. *Journal of Rural Studies*, 16(4), 447-458.
- Sassen, S. (Ed.). (2009). *Human Settlement Development-Volume IV*. EOLSS Publications.
- Sayegh, A, H and Vizcaino, B. (2015). New Afghanistan banking law may jump-start Islamic finance. Reuters. Retrieved from <https://www.reuters.com/article/islam-financing-afghanistan/new-afghanistan-banking-law-may-jump-start-islamic-finance-idUSL6N0WR05Q20150327> (Accessed on 5<sup>th</sup> September 2017).
- Tenzin, G., Otsuka, K., & Natsuda, K. (2015). Can Social Capital Reduce Poverty? A Study of Rural Households in Eastern Bhutan. *Asian Economic Journal*, 29(3), 243-264.
- Torri, M. C. (2009). Community entrepreneurship among lower castes in India: A grassroots contribution towards poverty alleviation and rural development under conditions of adversity and environmental uncertainty. *Journal of Developmental Entrepreneurship (JDE)*, 14(04), 413-432.
- United Nations Office of the High Commissioner for Human Rights [UNOHCHR]. (2010). Human Rights Dimension of Poverty in Afghanistan. UNOHCHR.
- United Nations Development Program [UNDP]. (2017). ASERD Factsheet. UNDP. Retrieved from <http://www.af.undp.org/content/afghanistan/en/home/library/ProjectFactSheets/ASERD/> (Accessed on 9<sup>th</sup> September 2017).
- United Nations. (2017a). Task of eradicating poverty must be met 'with a sense of urgency', says deputy UN chief. UN. Retrieved from <http://www.worldbank.org/en/news/press-release/2015/10/15/south-asia-extreme-poverty-falls-but-challenges-remain>. (Accessed on 5<sup>th</sup> September 2017).
- United Nations. (2017b). Sustainable Development Goals. UN.
- World Bank. (2007). *World development report 2008: Agriculture for development*. World Bank.
- Waldman, M. (2008). Falling Short. *Aid Effectiveness in Afghanistan, March, ACBAR Advocacy Series Kabul: ACBAR*.
- World Bank. (2015). South Asia Extreme Poverty Falls, but Challenges Remain. Retrieved from <http://www.worldbank.org/en/news/press-release/2015/10/15/south-asia-extreme-poverty-falls-but-challenges-remain>. (Accessed on 5<sup>th</sup> September 2017).
- World Bank. (2016). Afghanistan Government Inaugurates Citizens' Charter to Target Reform and Accountability. Retrieved from <http://www.worldbank.org/en/news/feature/2016/10/10/government-inaugurates-citizens-charter-to-target-reform-and-accountability> (Accessed on 5<sup>th</sup> September 2017).
- Wieser, C., Rahimi, I., & Redaelli, S (2017). *Afghanistan poverty status update: progress at risk*. Washington, D.C. : World Bank Group.