World Academy of Science, Engineering and Technology
International Journal of Civil and Environmental Engineering
Vol:9, No:12, 2015

Principles of Sustainable and Affordable Housing Policy for Afghan Refugees Returning to Afghanistan

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***Abstract*—**The overall goal of this paper is to examine the suitability and potential of the policies addressing the sustainability and affordability of housing for returnees, and to determine the impact of this policy on housing delivery for Afghan refugees. Housing is a central component of the settlement experience of refugees. A positive housing situation can facilitate many aspects of integration. Unaffordable, and unsafe housing, however, can cause disruptions in the entire settlement process. This paper aims to identify a suite of built forms for housing that is both affordable and environmentally sustainable for Afghan refugees. The result was the development of a framework that enables the assessment of the overall performance of various types of housing development in all zones of the country. There is very little evidence that the present approach of housing provision to the vagaries of market forces has provided affordable housing, especially for Afghan refugees. There is a need to incorporate social housing into the policy to assist people who cannot afford to have their own houses.

***Keywords*—**Afghan refugees, housing policy, affordability, social housing, housing provision, environmental sustainability principles, resettlement.

I. Introduction

HOUSING is a basic need for every human being. Housing policy may be defined as government action to achieve housing goals. These goals can improve the quality of housing stock for the home or can deal with homelessness. The other definition of housing policy can be government intervention in the housing field. Housing as a determining factor in social cohesion, is regarded a condition for access to employment and realization of fundamental human and social rights. Cheap and sustainable housing is an important part of today's life for returnees, but considering Afghanistan a country which does not have a national housing policy yet, is really annoying.

After 2001 a great number of refugees have returned to Afghanistan where their major problems are: lack of access to land and adequate housing. Access to sustainable, affordable and decent housing plays a critical role in the successful resettlement of refugees in Afghanistan. But the land allocation method and legal system (formal and informal) of Afghan government is not capable to timely supply to the sudden huge demand of housing and land for returnees. Besides, all the existing national and international programs are not able to provide proper shelters and affordable and sustainable housing for all Afghan returnees (Fig. 1). Afghanistan has the largest refugee population in the world. But the return of 5.8 million refugees since 2002 is a challenge that Afghanistan is facing for the first time. Still 3 million Afghan refugees are living in Iran, Pakistan and other countries [1], [8], [9].

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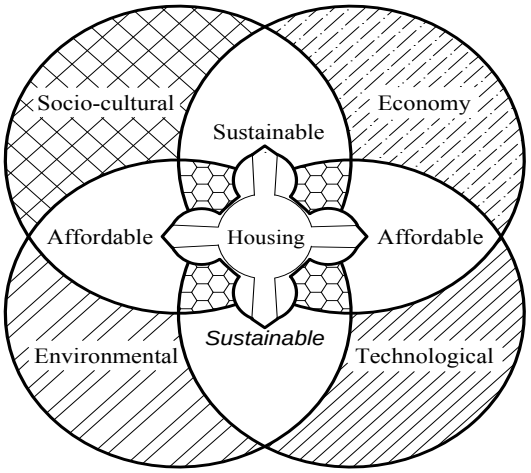


Fig. 1 Basic concept for sustainable-affordable housing

II. Objects and Method

This research is qualitatively conducted in the form of policy introduction and adaptation as a process of analyzing a fundamental social economical problem in order to provide policy makers with recommendations to alleviate the problem. This paper was developed in association with the Global Housing policy initiated by the Housing policy for Afghan refugees who return to their homeland. Affordable housing policy for Afghan returnees and immigrants are interrelated. Therefore, the aim of this study is particularly to come up with some policy recommendation on the provision of sustainable and affordable housing for Afghan refuges who return to their homeland In particular, this research aims to examine the existing relationship between housing integration policies in Afghanistan, focusing only on refugees' settlement in urban areas, which is not effectively applicable and usable.

1. How to make Collaboration work between National Sectors and International Partners (UN and NGOs) to have a unique Housing administration model for Afghan Refugees?
2. What could be the best method of returnee's resettlement both in urban and rural areas?
3. Which Architectural model should be selected to provide all returnees sustainable and affordable shelters?

Afghan Government has the vision to provide balanced and

harmonious community living through the production of affordable and quality housing for those who will return to country. This strategy is mutually supporting working relationship between Afghan government and International community, through which the shelter program for Afghan returnees can develop and progress in local community [2].

III. Discussions and Result

Most returnees are not willing to return to their provinces and villages. This concerns managing the rapidly growing urban areas, access to livelihood opportunities for newcomers, and the ability to provide durable housing solutions for displaced people. Most retunes have settled in Kabul in search of better life condition and facilities. Both affordable housing and sustainable development are major challenges globally. Housing affordability has once again emerged on the policy agenda of Afghan government and International and National partners. House prices have risen in response to booming demand and constraints on the supply of dwellings. Shortage of housing dwellings is especially due to a shortage of planned land in capital Kabul and other big cities. Many low-income households and returnees are unable to gain access to home ownership and are not able to afford private rental housing. To finalize our discussion and get our result that is based on the introduction of PSAHPA, (Fig. 2) which has the following principles:

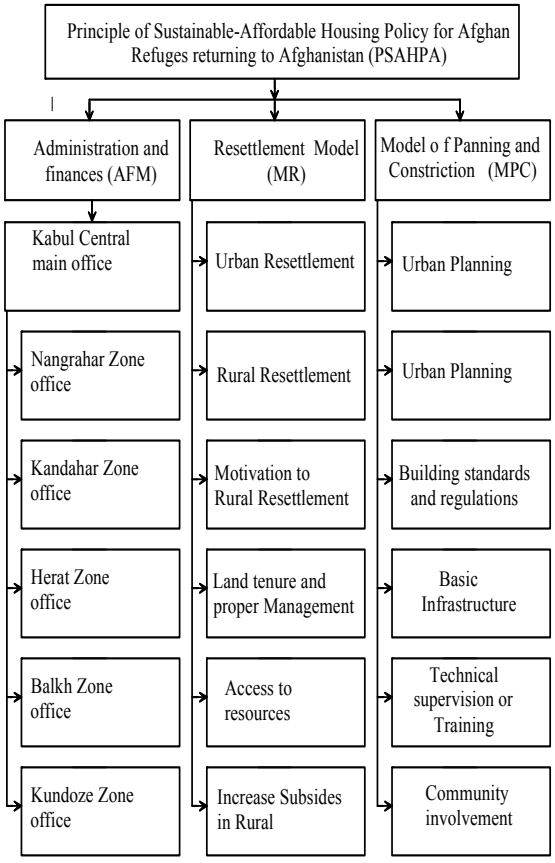


Fig. 2 Principles of Sustainable-Affordable Housing policy for Afghan Refugees returning to Afghanistan

A. Administrative and Financial Model

Sticking to the previously mentioned facts related to the return of 5.7 million (UNHCR report 2013 and [1]) returnees to Afghanistan, lead us to the first aid reintegration, UNHCR, follows a model called Shelter Construction Program, which supports the beneficiaries to make their accommodations. The program was designed for the widest geographic coverage focused on rural areas, which are the back up, while the extra effort made to target areas for future possible returnees [1]. Our model for the United Nations Office and all other partners, relevant government agencies and national and international NGOs is to work in an office for administrative and financial sector to regulate and control all other sectors from one source. That means a central office (Kabul Central office) and 5 zonal offices and in every province in the Department of Refugees there will be a survey team. To prevent corruption, administrative procedures should be adjusted and beneficiaries and representatives of the people should be involved in the process [3], [7].

B. Resettlement Model

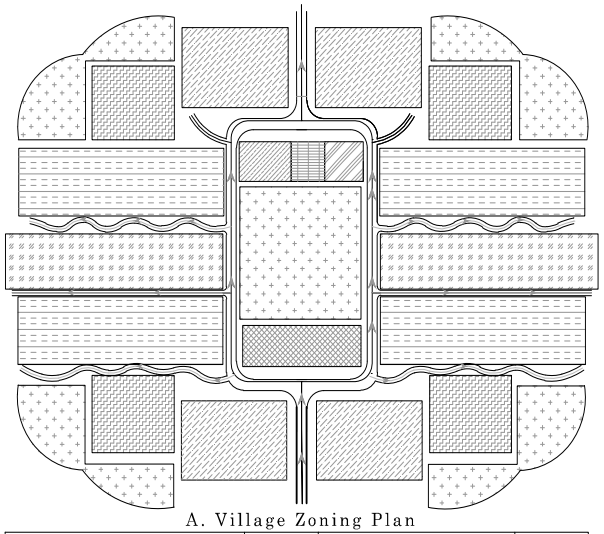
UNCHCR regulation for the resettlement of Afghan returnees that can be defined as follows: resettlement of Afghan refugees to their respective provinces is based on the condition to meet the most basic humanitarian needs, including food, shelter, protection, water and sanitation, health, and basic education [1]. Moreover, to reach a certain field of work and employment as measured and later become self-sufficient in the field of shelter and its location and their daily job. The model will be adoptable globally and it will be applicable both on urban and rural resettlement, it is illustrated shortly in Urban and Rural Resettlement.

1. Urban Resettlement

Based on my survey more than 70 % returnees want to settle in urban areas. The reasons respondents stated for staying in cities are mainly the job opportunities and educational/health facilities available in urban areas. International organizations have undertaken some initiatives to provide shelter for returnees, but did not pay full attention to the reason refugees consider for staying in the city thus having very low efficiency. As an instance a project of $8 million, being far from city center for residents to commute to work and find jobs has turned into ruins [4].

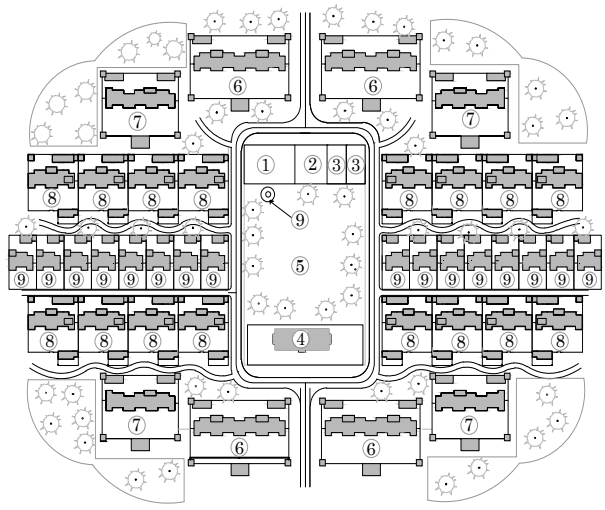
2. Rural Resettlement

In Afghanistan, more than 75 percent of the population is settled in rural areas and their living conditions are more self-sufficient [2]. It is believed that returnees should be encouraged to resettle in their original villages, which will solve the issue of land supply. The government can subsidize rural areas higher than urban areas to encourage returnees resettle in their original villages [5]. In addition, the organization should focus on restoring basic needs of each village, such as employment, health and education improvements, in coordination with the Ministry of Rural Rehabilitation and Development.



A. Village Zoning Plan

Residential Single Family		Health	
Residential 2 Families		Commercial	
Residential 3 Families		Educational	
Residential 4 Families		Recreational	
Religious		Tree Pattern of Path	



B. Legend of Village site plan

① -Mosque	⑥ -Four families Kalah house
② -Clinic	⑦ -Three families Kalah house
③ -Shops	⑧ -Two families Kalah house
④ -Village School (Kaliwal Showanzai)	⑨ -Single family Kalah house
⑤ -Multi Activities Village center yard	⑩ -Water well and hand pump

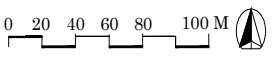


Fig. 3 Village Zoning and Site Plan

C. *Model of Sustainable Development and Affordable Housing Design and Construction Process*

Design and Construction process of Sustainable and affordable housing is an essential part of this Research. Sustainable development and affordable housing is a broad planning concept. World Commission on Environment and Development in states the sustainable development as: (Sustainable development means meeting "the needs of the present without compromising the ability of future generations to meet their own needs") [5].

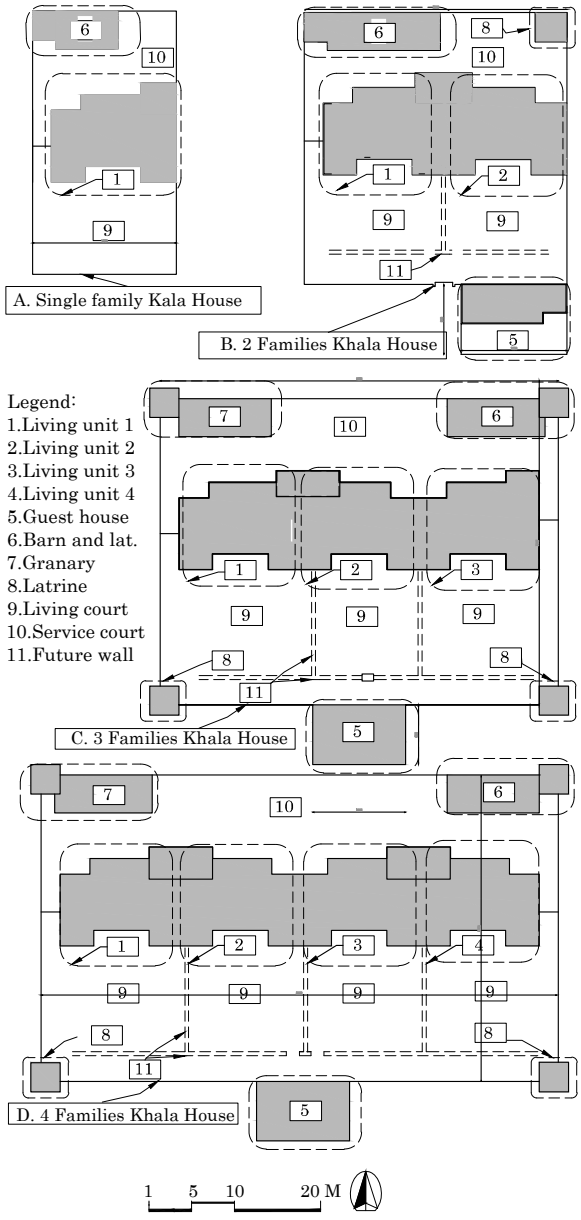


Fig. 4 Multi Families Khala Haouse

Sustainable housing as housing "that contribute to community building, social and economic justice at the local level"[6].

One of the biggest problems today's low-income families face is to find affordable and appropriate housing. Affordable housing refers to housing that could be affordable for low and middle-income families. This includes owner-occupied housing and rental housing owned by the government, nonprofit organizations, companies, or individuals [5]. To conclude the above discussion, shelters for returnees should be planned in a manner that should provide basic needs of current

and future generation in cities and countryside we summarized our result as following:

1. The design team must design cities, villages (Fig. 3) and residential units (Fig. 4) for each zone, with respect to all matters, including local Architecture, building materials, local, cultural issues, transportation and access to employment.
2. The existing refugees Towns (Fig. 6) should be studied. A capacity development program is important for skilled workers in construction field; each zone should have capacity development programs for their construction unit that is responsible for quality control of work and building materials. At the end of every capacity, development program participants should be awarded working license permits.
3. The work should be phased, and payment should be done

When every phase is completed shelter units can be provided to returnees on short and long-term loans.

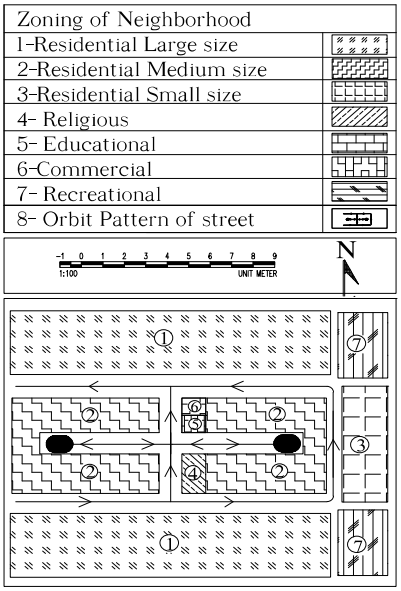


Fig. 5 Neighborhood Zoning Pattern and Legend

D. Sustainable Refuges Serene Neighborhood and Village Conceptual Design and General Passive Design Strategies

The Afghan, village's shape is generally central and with nuclear organization pattern of self-sufficient subsistence. The nuclear pattern, in which villages cluster like a town and several village-towns cluster surrounding a city, is the most common in Afghanistan [10]-[15].

We follow the concept of the shape (Fig. 3) of village also the Kala houses for one family to four families. In an urban dictionary neighborhood is defined as: an area walk able by any person, and is tied together by some common thread. It could be architectural, historical, cultural, functional... a hill, lake, pond, ditch, creek, school, shopping district, tower or other landmark the neighborhood is centered around, or a neighborhood association. Neighborhood design and street layout are also important for Afghan community. The relationships between buildings, streets and open spaces form the urban fabric that helps to give a neighborhood its physical identity. Neighborhood design refers to the scale, form and function of buildings and open spaces. Street layout refers to the pattern of local streets, for example as loop plus cul-de-sacs forms. Both can have impact on generated serene patterns. Sustainability focuses on decreasing transport planning inside the residence and community area and increasing pathway and bicycle connection routes as 'places' as well.

The traditional Afghan Courtyard House presents numerous energy efficient cooling/heating methodologies, which could be adapted into the contemporary houses with slight changes and improvement.

1. Typology/Shape

The shape of Afghan contemporary courtyard houses consists mainly of a rectangular, detached house without any party walls shared with adjacent buildings. Energy demand in a building is highly affected by the shape and typology of the building. In fact, building typology and shape is a significant component in absorption, storage and release of heat during the day and night, and thus is a key factor for heating and cooling demands in the building. Moreover, building typologies can be ranked by a parameter called "compactness," which is defined as the ratio of the building volume to its exterior wall area. The higher compactness contributes to lower heating and cooling energy demands and consequently higher energy efficiency.

2. Orientation

For all Afghan shelters, especially in cold climate areas such as Kabul, the glazing areas should be maximized in order to reduces required energy for heating in winter. On the other hand, in hot climate areas such as Kandahar and Nangrahar, the glazed areas should be equipped with proper shading devices in order to block solar gain and prevent overheating during summer.

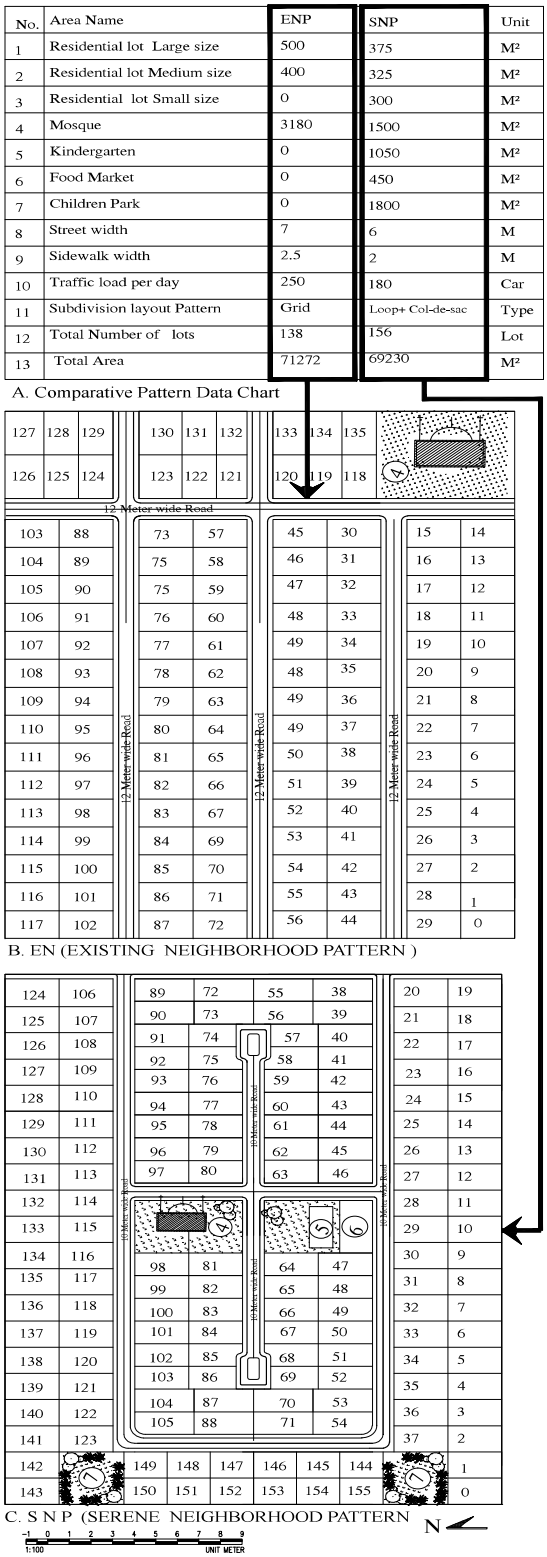
3. Shading

Solar shading devices such as overhangs, awnings and blinds should be designed in an effective way in order to allow solar radiation to reach the building in winter and block it in summer. A variety of movable and permanent shadings can be utilized. The different solar radiation angles during summer and winter make up a critical factor in designing permanent solar devices such as overhangs. This leads to energy saving by reducing cooling demand in summer as well as heating demand in winter.

4. Thermal Mass

Thermal mass is a term to explain a material with high thermal capacitance, which absorbs and stores thermal energy. Afghan Masonry walls are examples of thermal mass in buildings. Indeed, thermal mass acts as a thermal battery; in winter, it stores the heat absorbed from the sun or heaters in daytime and releases it at night. During summer, thermal mass can be cooled through nighttime ventilation and used for lowering cooling demand the following day. The cooling effect of thermal mass in combination with night ventilation is appropriate for climates with considerable fluctuations in

ambient temperatures during day and night. Thermal mass in the village returnees housing is not a big issue, but most examples of urban housing lack this feature which needs attention [10]-[15].



No.	Area Name	ENP	SNP	Unit
1	Residential lot Large size	500	375	M²
2	Residential lot Medium size	400	325	M²
3	Residential lot Small size	0	300	M²
4	Mosque	3180	1500	M²
5	Kindergarten	0	1050	M²
6	Food Market	0	450	M²
7	Children Park	0	1800	M²
8	Street width	7	6	M
9	Sidewalk width	2.5	2	M
10	Traffic load per day	250	180	Car
11	Subdivision layout Pattern	Grid	Loop+ Col-de-sac	Type
12	Total Number of lots	138	156	Lot
13	Total Area	71272	69230	M²

Fig. 6 Comparative Investigation of Existing Neighborhood with Neighborhood

5. Natural Ventilation

The main function of the ventilation system is to provide exceptional indoor air quality. During summer, a ventilation system can be used as a part of cooling system by venting the indoor warm air to the outside. The selection between different types of ventilation systems depends on the climate, building air tightness, the value of heat recovery and inhabitants' preferences. The most common methods are: Single-sided ventilation, Stack ventilation and Cross-flow ventilation.

6. Night Ventilation

In summer, when nighttime temperatures drop, cool air can be used to pre-cool the internal fabric of the house for the following day.

The airflow paths together with appropriate thermal mass provide adequate cooling. Automatic vent openings can also be applied to regulate both the airflow rate and the temperature inside the building.

7. Evaporative Cooling

The cooling capacity of evaporating water has been utilized to cool hot air in the southern province of Kandahar, west Herat and southern Nangarhar Provinces. Indeed, flowing in contact with water and transferring its heat to water, which makes the water evaporate, cools hot air. The rate of evaporation and the airflow through ventilation openings should be controlled to avoid over-humidification and achieve a desirable performance [10]-[15].

8. Wall Insulation and Materials

The average heat flow through the wall construction can be reduced by wall insulation, which consequently reduces both heating and cooling energy demands in buildings. Proper insulation of walls decreases heat losses in winter and contributes to energy saving and thermal comfort. During summer, thermal insulation reduces the heat transfer from the outside to the inside and thus decreases the cooling demand in the building [10]-[15].

9. Roof, Floor Insulation and Materials

During summer, roofs are generally more exposed to solar radiation than walls due to different angles of solar beams in winter and summer. Inadequate roof insulation results in heat transfer from the roof into the building, and consequently undesirable hot indoor air during summer. In traditional Roba Khana was used on the ground floor, but now most modern have basements. Roofs account for 40% of heat loss, so they are the first part of a building to insulate. Insulation is also recommended for summer comfort, as it prevents overheating (high solar gains in Afghanistan).

10. Natural Lighting

Good lighting was a very important design decision for us. We wanted to use as much diffuse daylight as possible. To facilitate this we propose that both floors be wrapped with windows towards the ceiling. This would provide diffuse light, but also opens up the thermal envelope but is expensive; an alternative is Polycarbonate, while providing a slightly lower

light transmission than glass provides much greater insulation and is also less expensive. What does this mean for the component of lighting in architectural design? Lighting, if at all treated, is in most cases reduced to the very last stages. For artificial lighting this can seem completely justified. However, natural lighting includes a wide range of aspects that can affect design.

IV. Conclusion

This study could be used as a prototype model, which could support the beneficiaries to build their own facilities. The focus of the proposed model covers both urban and rural areas. The model attempts to resettle the returnees in their former villages. A practical concept design of sustainable and affordable housing in urban and rural areas is a good option. Many studies established affordable housing goals closely based on sustainability goals, such as proximity of housing to public transport and provision of social and community facilities, compact design, taking into account the weather and solar orientation. However, some of the goals are quite opposite to each other like an eco-efficient home is expensive, and it is difficult to achieve price without financial support from the government. Even if the proposed housing is stable, but the price of housing is unaffordable and it is necessary to prioritize the price for returnees. And returnees will not be able to afford sustainable housing proposed based on sustainability criteria Affordable housing and social stability can easily provide better design which could also be environmentally and economically sustainable. While there has been excellent research accounting for the barriers and challenges that Afghan returnees face in securing housing, there is a gap in the documentation of what strategies, policies and projects are effective in assisting refugees to overcome these many challenges. This study will be the first step and The next phase in research will be to capture the effective practical design and construction approaches to addressing and approach sustainable and affordable housing with a clear procedure and order to understand what factors led to success and how these approaches could be replicated or developed further in government policy and in practice in all Afghanistan.

Acknowledgment

The authors would like to thank to Mr. Mohammad Kamil Halimee from the Department of Scientific Engineering Simulation, Nagoya Institute of Technology, Japan for supporting this study.

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