إقـــرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Comparative study of Donor driven vs. Owner driven approach on the way to "build back better" of Gaza private demolished houses

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وإن هذه الرسالة ككل، أو أي جزء منها لم يقدم من قبل لنيل درجة أو لقب علمي أو بحث لدى أية مؤسسة تعليمية أو بحثية أخرى.

DECLARATION

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

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Comparative study of Donor driven vs. Owner driven approach on the way to "build back better" of Gaza private demolished houses

المفاضلة بين أهم البدائل المستخدمة في إعادة إعمار المنازل الخاصة المتضررة في غزة

"الإعمار من خلال الجهات الممولة أو الإعمار من قبل الشخص المتضرر"

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نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة عمادة الدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحث/ **رامي تيسير محمود مهاني** لنيل درجة الماجستير في **كلية *الهندسة* قسم الهندسة المدنية- إدارة التشييد** وموضوعها:

Comparative study of Donor driven vs. Owner driven approach on the way to "build back better" of Gaza Private demolished houses

وبعد المناقشة العلنية التي تمت اليوم الأحد 28 شعبان 1434هـ، الموافق 2013/07/07م الساعة العاشرة صباحاً بمبنى طيبة، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

د. علاء الدين داوود الجماصي	**مشرفاً ورئيساً**	.....
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د. يوسف صبحي الغريز	**مناقشاً خارجيًا**	.....

وبعد المداولة أوصت اللجنة بمنح الباحث درجة الماجستير في **كلية *الهندسة*/ قسم الهندسة المدنية- إدارة التشييد.**

واللجنة إذ تمنحه هذه الدرجة فإنها توصيه بتقوى الله ولزوم طاعته وأن يسخر علمه في خدمة دينه ووطنه.

والله ولي التوفيق،،،

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Dedication

I lovingly dedicate this thesis to my parents, wife and family, who supported me each step of the way

Rami Mahani

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Alhamdulillah, all praises to Allah for the strengths and His blessing in completing this research.

This thesis would not have been possible without the guidance and the help of several individuals who in one way or another contributed and extended their valuable assistance in the preparation and completion of this study.

First and foremost, my sincere thanks and respect to my supervisor Dr. Alaeddinne Eljmassi for his valuable advices, encouragement, professional support and guidance.

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Abstract

More than four years after the end of the 2008/2009 war on Gaza Strip, much of the destruction wrought upon the Gaza Strip is still not been repaired. Only 1,700 housing units were rebuilt out of 3,481 that were totally demolished during that war.

As selecting the suitable approach in housing reconstruction depends on the household's degree of control over the reconstruction process, this research is aiming to improve the approaches adopted by donors in financing the reconstruction of war-damaged houses in Gaza Strip (Owner-driven and donor-driven approaches).

Both field work and desk study approaches were used in the research for data collection, also, a combination of quantitative and qualitative approaches was used as strategies to data collection. Main tools used for data collection were: semi-structured interviews with Governmental and Non-Governmental institutions, questionnaire survey for beneficiaries, field observations and cases study.

Results clearly emphasis that "owner-driven" approach has proven to be more successful than the "donor-driven" approach in all factors used to measure beneficiary perceptions include: quality and durability, time, cost, accountability and transparency, flexibility to make changes and satisfaction. Also, other advantages are addressed include strengthen the local economy and participation in psycho-social recovery.

The study strongly recommends utilizing owner-driven approach in reconstruction of totally private demolished houses in Gaza Strip instead of donor-driven approach but emphasizes on some important actions in order to build back better of houses.

Pre-reconstruction actions include: prepare detailed guidelines, help owners in solving land related problems, ensure efficient coordination between all stakeholders and conduct orientation workshops / training sessions.

Reconstruction phase actions include: ensure adequate technical assistance, monitor market prices and ensure a transparent and accessible complaint system.

Post reconstruction actions include: Review and assess the overall process as well as call for extra fund for reconstruction of remaining demolished houses.

ملخص البحث

لا زال مشهد وحجم الدمار في قطاع غزة واضحاً حتى بعد مرور أكثر من أربع سنوات على الحرب على القطاع في ديسمبر 2008م بالرغم من جهود الأعمار الحثيثة من قبل العديد من الجهات، فمن أصل 3,481 وحدة سكنية تم تدميرها بالكامل خلال العدوان تم إعادة إعمار 1,700 وحدة أي مانسبته 48.84% من إجمالي ما تم تدميره.

يهدف هذا البحث إلى دراسة وتقييم أهم الأساليب المتبعة في إعادة إعمار المنازل المتضررة كلياً وإبراز ما هي الطريقة الأفضل في إعادة الإعمار للجهات المختلفة نتيجة لتعدد هذه الأساليب واختلافها في العديد من المعايير.

أعتمد الباحث على أساليب البحث العلمي بهدف تحقيق أهداف الدراسة والوسائل المختلفة لجمع البيانات والتي تمثلت في العمل الميداني من خلال اللقاءات الرسمية مع الجهات المنفذة لمشاريع إعادة الإعمار والاستبيانات الموجهة للمستفيدين من هذه المشاريع والملاحظات على الأعمال، بالإضافة إلى العمل المكتبي من خلال تحليل المعلومات والبيانات والاطلاع وتحليل الحالات الدراسية المختلفة.

أظهرت نتائج الدراسة أن إعادة الإعمار من خلال الاعتماد على المتضرر نفسه في إدارة العملية أفضل بكثير من اللجوء إلى الطريقة التي تعتمد على تعيين مكتب هندسي ومقاول لإنجاز هذا العمل، وقد ظهر جلياً تفوق هذه الطريقة من خلال مقارنة بعض العوامل الأساسية بينهما شملت: الجودة، الديمومة، الوقت، التكلفة، المسائلة، الشفافية، إمكانية التغيير المستقبلي، الرضا العام بالإضافة إلى ما ثبت عن مساهمة هذه الطريقة الفعالة في دعم الاقتصاد المحلي والتخفيف من الآثار النفسية للعدوان المستمر.

توصي الدراسة بإعادة إعمار المنازل المتضررة من خلال المتضرر نفسه مع الأخذ بعين الاعتبار بعض التوصيات الهامة خلال مراحل الإعمار المختلفة والتي تشمل: مرحلة ما قبل الإعمار، مرحلة الإعمار، مرحلة ما بعد الإعمار

أهم التوصيات في مرحلة ما قبل الإعمار: العمل على تجهيز دليل يوضح كيفية إعادة الإعمار من خلال المتضرر نفسه، حل إشكاليات ملكية الأراضي والميراث، التنسيق الفعال بين ذوي العلاقة لإنجاح العملية، تنفيذ ورشات عمل تعريفية للمستفيدين من البرنامج حول كيفية آلية العمل والمسؤوليات والمهام المنوطة بهم.

أما أهم التوصيات في مرحلة الإعمار: ضمان الدعم الفني المستمر والفعال للمستفيدين من البرنامج، المتابعة المستمرة لأسعار المواد والأجور بالإضافة إلى توضيح آلية وتسلسل نظام الشكاوي.

وأخيراً فإن أهم توصيات مرحلة ما بعد الإعمار: مراجعة وتقييم إيجابيات وسلبيات كل مرحلة بالإضافة إلى الفرص والتهديدات لضمان انسيابية العمل وأيضاً جلب المزيد من الدعم لصالح إعادة إعمار قطاع غزة وإنهاء معاناة العديد من العائلات التي ما زالت دون مأوى.

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Acronyms and Abbreviations

CBO	Community Based Organization
INGO	International Non-Governmental Organization
NGO	Non-Governmental Organization
PCBS	Palestinian Central Bureau of Statistics
PHC	Palestinian Housing Council
PNA	Palestinian National Authority
PNERRP	Palestinian National Early Recovery and Reconstruction Plan
SPSS	Statistical Package for the Social Sciences
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UN-HABITAT	United Nations Human Settlement Programme
UN-OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East

Chapter I

INTRODUCTION

Chapter I: Introduction

1.1. Background on Gaza Strip

The Gaza Strip is a narrow strip of land on the Mediterranean coast. It borders Israel to the east and north and Egypt to the south. It is approximately 41 kilometers long, and between 6 and 12 kilometers wide, with a total area of 378 square kilometers. (United Nations Environment Programme "UNEP", 2009). Its population, estimated at 1.65 million (Palestinian Central Bureau of Statistics "PCBS", 2012), including more than 1.25 million registered refugees according to the United Nations Relief and Works Agency (UNRWA), which has been charged with the welfare of Palestinian refugees in eight camps since 1949.

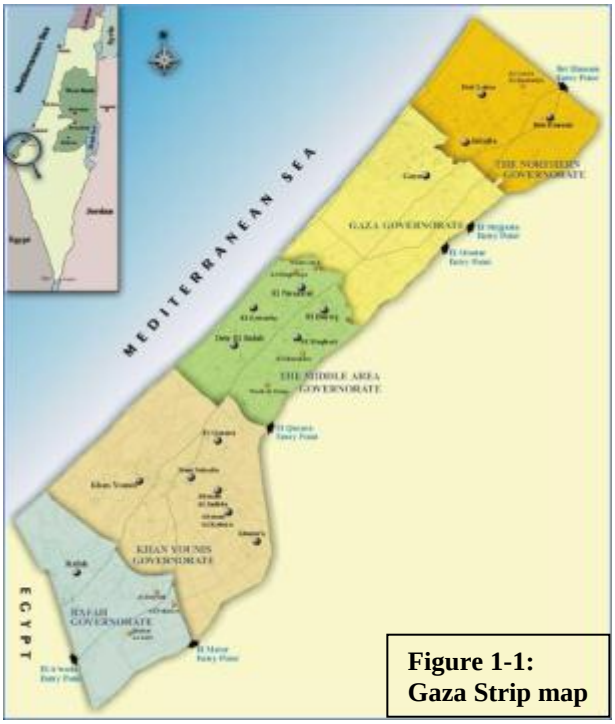


Figure 1-1: Gaza Strip map

Established in the armistice which concluded the 1948 Arab-Israeli war, the Gaza Strip was administered by Egypt until it was re-captured by Israel in 1967. Israel ceased its nearly four-decade occupation, which included several conflicts and political developments too numerous to explore here, with a unilateral withdrawal in 2005. (Barakat, S., et al., 2009)

."Gaza is a prison and Israel seems to have thrown away the key" said the United Nations special rapporteur on Human Rights, John Dugard in Sep. 2006

Population density of the Palestinian Territory is generally high at 713 persons/km^2, particularly in Gaza Strip is 4,505 persons/km^2 compared to lower population density in the West Bank at 468 persons/km^2 at mid-2012. (PCBS, 2012)

1.2. The War on Gaza 2008: Facts and results

The 22-day assault on Gaza Strip, which began on December 27th 2008, killed at least 1,314 Palestinians and wounded four times as many. More than 100,000 people were displaced, and over 50,000 homes have been damaged or destroyed. The leveling of businesses factories and farmlands has contributed to the near-total collapsed of the local economy, and the vast majority of Palestinians living in Gaza have been left unable to meet even their basic needs. (Palestinian National Authority "PNA", 2009)

The table below indicates the damage, level and value, from the 22-Day Conflict

Table 1-1: Damage, level and value, from the 22-day war

Type of Damage	Number	Value (Million US$)
Housing buildings (Destroyed)	4,100	200
Housing buildings (Damaged)	17,000	82
Mosques	20	2.2
Education and health buildings	25	8.4
Security headquarters	31	6.3
Ministry compounds	1	25
Ministry buildings	16	23.5
Bridges	2	3
Municipality and local authority headquarters	5	2.3
Fuel Stations	4	2
Water and wastewater networks	10	2.4
Destroyed ambulances and civil defense vehicles	20	1.5
Electric power distribution facilities	10	0.4
Road (in km)	50	2
Factories, shops and other commercial facilities	1,500	19

Source: Barakat, S., et al., 2009 & the Palestinian Central Bureau of Statistics, Damage Assessment, 19 Jan. 2009

Table below shows the destroyed damaged homes by Governorate in addition to the estimation cost of losses for totally destroyed houses.

Table 1-2: Estimation of losses and costs for totally destroyed houses

Governorate	Estimated reconstruction cost (millions of US $)	Number of units	Total area (m^2)
North Gaza	123,382	2,118	352,520
Gaza	44,555	675	127,300
Middle Area	21,631	435	61,802
Khan Younis	22,572	396	64,491
Rafah	20,853	412	59,580
Grand Total	**232,993**	**4,036**	**665,593**

Source: (PNA, 2009)

1.3. Reconstruction process

More than a year after Israel ceased its military operations against the Gaza Strip, and despite intensive efforts to initiate recovery, three quarters of the damage inflicted on buildings and infrastructure remains unrepaired and unreconstructed. Around USD 527 million are required to just return the Gaza Strip to the state it was in on December 26, 2008, on the eve of the 23-day conflict. This represents a fraction of the total needs required to "build back better", that is to ensure that Gazans achieve a measure of well-being that extends beyond the levels of 2008, through large scale construction to address population growth, maintenance and repair to reverse the degradation of public and private infrastructure which has occurred under the blockade of the Gaza Strip. (United Nations Development Programme "UNDP", 2010)

An international conference to help reconstruct Gaza Strip got underway in Sharm Elsheikh on 2nd March 2009 within a participation of more than 80 states and organizations. Originally, the Palestinian Authority had hoped to raise $2.4 billion in aid, including $1.33 billion to rebuild Gaza Strip. However, the figures have exceeded expectations and the total figure comes to $5.2 billion. The most prominent participants were the United States, Gulf Arab states, the European Commission and the United Kingdom (Pal-Think for strategic studies, 2011).

International mobilization for the reconstruction of Gaza began shortly after the end of operation "Cast Lead". Based on a damage and needs assessment spearheaded by the UN in collaboration with local authority counterparts and national NGOs, the Palestinian National Authority put forward the Palestinian National Early Recovery and Reconstruction Plan for Gaza (PNERRP) at the Sharm El-Sheikh Donor Conference of 2 March 2009. More than USD 1.3 billion was pledged by international donors in support of the plan. More than a year after the Sharm El-Sheikh Conference, few of these pledges have materialized, and Gaza's reconstruction continues to be hampered by Israel's blockade and by internal Palestinian divisions. (UNDP, 2010)

International donor conference to address the question of humanitarian assistance to Gaza underscores the myriad challenges confronting the process. Namely, how should the international community respond to the complex issues surrounding assistance in post-conflict recovery and reconstruction? By any estimation, the Gaza reconstruction process will face several perplexing issues. (Harris, A., 2009)

1.4. Problem statement

Besides human casualties, one of the most visible and striking effects of any major disaster is the destruction of houses. Loss of housing destroys livelihoods, protection and privacy. Effective housing reconstruction is essential to restore affected communities' dignity, society, economy and cultural identity. (Barenstein J., 2006)

Humanitarian agencies engaging in post-disaster housing reconstruction confront a number of key questions. Should they provide temporary, semi-permanent or permanent housing? Should they offer financial, material and/or technical support? Should they bring in ready-made shelters, or should they involve disaster-affected people in construction? What housing technologies should be promoted or adopted? Should new materials and building techniques be introduced, or should projects build upon locally available knowledge and resources? Should agencies support self-help housing reconstruction, recruit local labor, encourage homeowners' participation or engage a professional construction company? (Barenstein J., 2006)

Gaza Strip reconstruction process is still on-going with huge interventions from the Government as well as many agencies and organizations. Last fact sheet released by the Unified Shelter Sector Database (USSD) / Shelter Sector in Gaza in 2013 indicated that out of 3,481 totally demolished houses in Gaza Strip, only 1,700 were rebuilt and 500 under rebuilding.

Government, agencies, international and local NGOs and private sector are financing rebuilding of houses using different approaches in the reconstruction process according to many external or internal factors. The approaches included mainly:

a. ***Donor driven approach***: in this approach the government or an external agency that is funding the project will lead the reconstruction process with the help of consultants and contractors procured for the project.

b. ***Owner driven approach***: in this approach the beneficiaries reconstruct their houses by themselves and the role of the external agencies is limited to the provision of financial and technical assistance.

In this research, comparison and evaluation for the two approaches will be conducted as well as highlighting the best approach for future interventions.

1.5. Research significance

Identification, comparing and improving the reconstruction approaches is very important in the situation of Gaza Strip with frequent destruction and huge need for reconstruction activities. The research will draw the attention of stakeholders to the advantages and disadvantages of the reconstruction approaches that recently used in the reconstruction of Gaza Strip reaching the better building back of totally private demolished houses.

1.6. Research aim and objectives

Research aim

Improving the approaches adopted by donors / implementing agencies in financing the reconstruction of war-damaged houses in Gaza Strip after the war of 2008/2009

Research objectives

The main objectives of the study can be summarized as follows:

- To identify the current approaches adopted by donors/ implementing agencies in financing the reconstruction of war-damaged houses in Gaza Strip.

- To compare and evaluate the financing approaches for reconstruction of war-damaged houses in Gaza Strip in terms of:
  1. Quality of work / durability
  2. Timeline
  3. Cost
  4. Accountability & transparency
  5. Flexibility to make changes in the future
  6. Satisfaction

- To highlight the best practice in financing approaches in the Gaza Strip.

1.7. Research limitations

The research will be limited to the following points:

1. Totally demolished private houses in the Gaza Strip
2. Private demolished houses during the Gaza War 2008/2009

1.8. Research methodology

The methodology includes the following steps:

1. Review literatures by referring journals, research publications, books and reports to create better understanding of the issue and a wider view.
2. Collect data through semi-structured interviews with key persons in agencies and INGOs, questionnaire survey targeted beneficiaries, field observations and cases study.
3. Analysis of data using appropriate statistical techniques.
4. Discuss the results to obtain the correlation between the data and the investigated sample.
5. Highlighting of comments and conclusions based on the obtained and analyzed data and finally writing down the recommendations.

1.9. Thesis organization

The thesis includes five chapters in addition to the references and annexes as follows:

Chapter I: Introduction	Chapter II: Literature review	Chapter III: Methodology	Chapter IV: Results & Analysis	Chapter V: Conclusions & recommendations
Includes: introduction to the research, problem statement, research significance aim, objectives, limitations, methodology and research organization	Includes: literature review of the previous efforts and studies related to the research topic	Includes: research strategy, research design, population, location, data collection, questionnaire design, pilot study, validity, reliability and statistical data analysis	Analyzing data collected through: Semi-structured interviews, Questionnaires, Observations, And cases study	Presents: major finding, conclusions and recommendations
References and Annexes				

Chapter II

LITERATURE REVIEW

Chapter II: Literature Review

2.1. Introduction

The recent increases in frequency and magnitude of natural disasters have raised issues of increasing vulnerability of communities. The impact in terms of human, structural and economic losses has risen in recent years. The reconstruction process has very much depended on the -administrative, political, social, economic and cultural context that coupled with many other unforeseen factors will affect the speed and coverage of the recovery programmes. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

One of the most visible consequences of many disasters is the widespread devastation of houses. This explains why many humanitarian agencies are increasingly focusing their recovery assistance in housing reconstruction. The complexity and cultural sensitivity in housing and the links between the built environment and sustainable development are still not fully appreciated. Most post-disaster housing reconstruction projects are agency-driven and have a narrowly technical approach. (Duyne, J., Pittet, D., 2007)

Relief, recovery, rehabilitation and reconstruction are the main activities in rebuilding an affected region after a disaster where victims, government and non-governmental organizations are the main stakeholders. Moving from immediate relief effort to the reconstruction task is a major challenge in any disaster situation. Governments adopt different reconstruction strategies with varying outcomes. Serious decisions must be made on how risks could be reduced to acceptable levels and these decisions have to be reflected in the reconstruction and recovery strategies that should be adopted. Identifying the most suited and applicable strategy for each situation is of utmost importance in order to provide better assistance to victims and to avoid possible future vulnerabilities and environmental degradation. (Karunasena G., Rameezdeen R., 2010)

One of the major challenges after a disaster is how the redevelopment activities should be undertaken. To rebuild the nation after a disaster, Governments adopt different reconstruction strategies. Different reconstruction strategies give different outcomes. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

As per Ingirige, B., et al., 2008, the degree of resilience of the community affected increases with longer-term orientated solutions. However, the speed of providing the longer-term solution usually reduces due to various problems associated with availability of funding, social problems, economic problems and technological problems.

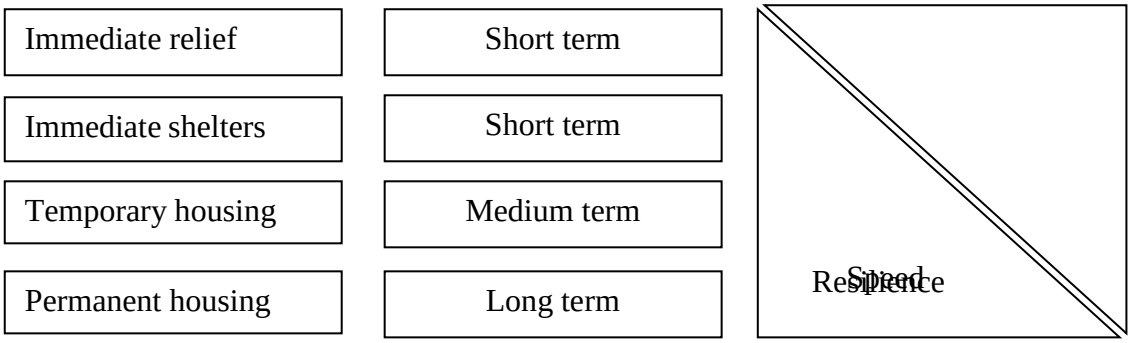


Figure 2-1: The four-stage process of housing reconstruction and its relationship with resilience and speed of reconstruction (Ingirige, B., et al., 2008)

Any reconstruction programme has to meet a range of complex and often conflicting needs of affected people. I-Rec Conference held in 2004 in Coventry/UK, has identified that reconstruction programmes often fail to take into account the desires of disaster affected populations. If proper attention is not given to needs of affected people there is a possibility that the newly constructed facilities become obsolete from the day the construction is complete. Therefore, reconstruction strategies should be implemented after studying the desires of the affected people. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

Post-disaster reconstruction programmes are easy to get wrong. They can lead to a huge waste of resources and can increase vulnerability by causing greater damage to the long-term physical and sociocultural environment than they give benefit in terms of infrastructure and economy in the short term. They can ignore livelihoods, existing capital, resources, human rights and opportunities for long-term disaster reduction. Reconstruction is not a fire-fighting job, and those who ought to be engaged in the process are no longer victims but, rather, equal partners. To these ends, reconstruction must be seen as a developmental process rather than a disaster response. (Sanderson, D., Sharma, A., 2008)

A good housing reconstruction strategy will take in to account the social need together with long-term disaster mitigation and sustainability. Barenstein J, 2006 has studied these strategies following the earthquake that hit Gujarat in India on 26 January 2001. It identified five approaches, namely; owner-driven approach; subsidiary housing approach; participatory housing approach; contractor-driven approach in situ; and contractor-driven approach ex nihilo, that have been used during the reconstruction.

A post-disaster reconstruction program must be a dynamic, flexible process, that reflects people's priorities and aspirations, and it should seek a balance between affordability, technical feasibility, and the quality of life (Vatsa K. S., 2001). In many cases, projects are donor-driven rather than community-driven, activities being decided by donor agencies or governments, rather than the communities themselves. Ownership of such projects therefore belongs to governments or donor agencies. (Shaw, R., et al., 2002)

The type of resourcing approach can be defined in terms of the way and extent to which the stakeholders leverage their influence and value into resourcing activities. Chang, Y., et al., 2010 highlighted four main resourcing approaches widely applied in past disaster reconstruction practice:

- Government-driven resourcing: post-disaster reconstruction resource availability is mainly driven by governmental agencies and other authorities.
- Donor-driven resourcing: donors play a dominant role in resourcing efforts for a post-disaster reconstruction project.
- Market-driven resourcing: the instruments, forces and rules in the construction market have a major influence in resource availability for post-disaster reconstruction.
- Owner-driven resourcing: house owners are responsible for rebuilding their own houses through self-maintenance with limited external financial, technical and material assistance.

There remains a need to address a key strategic aspect in post-disaster housing reconstruction – mechanism for ensuring good quality of construction – together with liability, warranty and accountability for faulty construction and defects, usually linked to the modality of contractual arrangement – donor-driven, owner-driven or any mode in between these two. (Ahmed, I., 2011)

Sanderson, D., Sharma, A., 2008 mentioned that to provide a coordinated response between the large number of groups offering assistance, the government of India put in place a system of village adoption, whereby NGOs and other entities took on responsibility for the reconstruction of the villages. Subsequently, most households were offered one of two choices:

- Owner-driven reconstruction, wherein households receive the grant to rebuild their homes, conditional on passing inspections to check the quality of building. Owner-driven housing for the most part took place on the cleared sites of buildings that had collapsed; or

- Donor-driven reconstruction, wherein an NGO or other entity builds the house. Donor-driven programmes formed the basis of larger shelter reconstruction projects of villages in new locations. Smaller, donor driven projects also took place within rebuilt villages on the sites of collapsed and/or damaged houses.

The Buhj 2001 earthquake, India affected about 1.2 million homes. Over 5000 health units and over 50,000 schoolrooms were also damaged or destroyed. Thus, when a comprehensive reconstruction and rehabilitation program was launched immediately after the earthquake, the initial focus was, expectedly, on reconstruction of housing and other infrastructure. Two models were adopted for housing reconstruction. One was owner driven housing in which the reconstruction was carried out by the home-owners with financial, technical and material assistance provided by the government. The other model was a public private partnership program, wherein 50% of the cost of reconstruction was borne by non-government agencies (NGOs) and 50% by the government. The owner-driven program found more favor with the community and about 82% of the housing reconstruction in the affected regions was owner-driven. (Sheth, A., et al., 2004)

The Government of Sri Lanka (GoSL) adopted a two pronged approach to housing: Cash assistance to home owners to build their houses on their own plots, known as ‘owner driven’, or ´Cash for Reconstruction and Repair` (CfRR); Contractor built houses in relocation sites outside the buffer zone or on the original plots of land, known as ‘donor driven’. (Aysan, Y., et al., 2006)

Housing reconstruction is a complex process which if not approached appropriately can undermine state institutions and entrench forms of economic and social exclusion. In particular, models of owner-driven reconstruction, as employed in southern Lebanon, generate both opportunities and risks. While they permit a recently novel degree of flexibility and recipient control, such approaches may also exacerbate developmental and political problems if the context in which they occur does not include readily available technical assistance and capable, transparent and co-ordinated financing mechanisms. Mixed or hybrid approaches which enable households in post-conflict environments to select contractor-driven or owner driven options, or a combination of the two, may help to ensure that the model of reconstruction pursued is based on local conditions and individual, households' needs rather than the supposedly universal advantages of any one. (Barakat, S., Zyck, S., 2011)

Many humanitarian organizations assume that the quickest and most effective way to rebuild houses after a disaster is to employ professional construction companies. At the same time, however, there is growing awareness of the limitations and risks of the contractor-led approach. Contractor-built reconstruction may lead to housing that does not respond to the cultural or social needs of disaster-affected communities. An emphasis on safety may see the introduction of modern technologies and construction materials that may be inappropriate to the local environment, and may make subsequent repairs and maintenance difficult or impossible. These difficulties are encouraging other, more participatory strategies, whereby agencies retain a leading role in reconstruction, but the community is also involved in the process. In particular, the so-called 'owner-driven' or 'cash based' model is attracting increasing attention. In this approach, people reconstruct their houses themselves; the role of external agencies is limited to the provision of financial and technical assistance. Owner-driven reconstruction has a number of advantages over contractor-led approaches: it is more cost-effective, building may be incremental, allowing occupancy before the house is fully finished, and occupancy rates tend to be significantly higher. (Barenstein J, 2006)

2.2. Donor-driven approach in reconstruction

In the donor-driven approach, housing reconstruction is entirely handled by the donor-agency concerned from inception to handing over of housing units to recipients. (Karunasena G., Rameezdeen R., 2010)

Donor Driven reconstruction program is completely handled by the donor agencies. All affected families were entitled to a house built by a donor agency in accordance with Sri Lankan government standards in a new location. In addition, the donor provides all common infrastructures for the new settlement, while Sri Lankan government provides the services up to the relocation site. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

The contractor-driven approach in situ involves tasking a professional building contractor to design and build the houses. By in situ, we mean that houses are rebuilt on the same sites occupied before the disaster. Typically, designs, materials and expertise are imported from outside the target community. (Barenstein J, 2006)

Donor-driven housing reconstruction requires special attention to be paid to the implications of resource availability & appropriateness of NGOs' resource procurement during the reconstruction period. Donor-driven resource procurement was primarily impeded by (1) NGO-related factors: NGOs competency of resource procurement and competition for resources among aid agencies; (2) external hurdles in NGOs implementing environment: low local transportation and supply capacity, incompetence of contractor, and insufficient government support; (3) community-related factors: local housing culture & lack of community participation. (Chang, Y., et al., 2011)

2.3. Owner-driven approach in reconstruction

The Sri Lankan government provided a cash grant to the affected homeowners for the reconstruction of their houses at the same site. The owner-driven approach enables the affected communities to undertake construction work by themselves with external financial support & technical assistance. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

In community based housing reconstruction program, the level of participation of community should be at the level of collaborate or empower. The community has power to control the reconstruction project as they can act as an owner, a supervisor or even a contractor for their own houses reconstruction. (Ophiyandri, T., et al., 2010)

Under the Owner Driven Housing Construction Programme, the donor provide cash grant, technical guidance, monitor the construction activities and ensure quality of the construction. The beneficiaries determine their housing requirement as they need, plan the housing construction activities and reconstruct their houses based on their requirement and economic capability. (Miranda, AER S., 2010)

Here a more owner-driven approach has been encouraged, with government providing resources (financial compensation and subsidized building materials) but leaving householders to undertake their own rebuilding, with the help of NGOs who give technical support in safe construction practices. (Twigg, J., 2006)

However, the owner-driven approach is a recent phenomenon and very seldom used in housing reconstruction. This methodology is also known as “cash-based approach” or “cash grant approach” and very popular as an alternative to food or commodity aid. (Karunasena G., Rameezdeen R., 2010)

The owner-driven approach enables communities to undertake building work themselves, with external financial, material and technical assistance. Owner-driven reconstruction does not necessarily imply that owners build the house on their own, but that, within given building codes, they retain full control over the housing reconstruction process. (Barenstein J, 2006)

Design and construction in the area is mostly procured by the owners themselves, employing a local skilled artisan to direct operations. The traditional artisans play a pivotal role in the overall construction activity, and the owner relies on them heavily for

all types of advice. The artisans provide overall technical and organizational support even though none of them has formal training. Construction of these buildings is largely dictated by the local availability of construction materials and skills. The owners procure the materials themselves, according to the quantities advised by the mason, and are therefore responsible for material quality selection. (Mumtaz, H., et al., 2008)

Community-driven reconstruction applies the methodology of community-driven development to a post-conflict setting. Local populations and local institutions are the key players in project planning, execution and monitoring. Community-driven reconstruction approaches thereby provide one key foundation for sustainable development in the longer-term. Community-driven reconstruction has two principal objectives: (i) speedy and cost-effective delivery of reconstruction assistance on the ground; and (ii) building a governance structure that stresses local choice and accountability. (Cliffe, S., et al., 2003)

Community-driven reconstruction thus essentially erases the divide between "crisis" and "development". Empowering communities to identify their needs, decide on projects to address these needs, manage resources and contracts, monitor implementation, and evaluate outcomes from the outset is a more robust model for sustainable growth than one that leaves local decision-making for an undefined "later". (Cliffe, S., et al., 2003)

The owner-driven approach provides finance and technical support, but the recipient retains full control over the housing reconstruction process. Thus, the owner-driven approach enables communities to undertake building work themselves, with external financial and technical assistance. (Karunasena G., Rameezdeen R., 2010)

Reconstruction projects implemented in a participatory owner-driven mode need to ensure that beneficiaries have adequate technical support from local community-based builders & construction workers for good quality house construction. (Ahmed, I., 2011)

Owner-driven approaches are those in which 'people are enabled to reconstruct their houses by themselves. However, they may vary from those in which owners participate in housing reconstruction alongside professional contractors and architects to those in which all reconstruction efforts are undertaken by the owner either with or without the benefit of external technical assistance. (Barakat, S., Zyck, S., 2011)

2.4. Donor-driven vs. owner-driven approach

Owner driven housing programme is more successful than donor driven programme concerning dwellers' view. According to Ratnayake, R.M.G.D, Rameezdeen, R., 2008, it has been argued that owner driven programme has been in prominent level in term of: Quality/durability, space availability, flexibility to make changes in the future, agreeing to change the design as required, land size, location, and overall facilities provided (Electricity, Water connection and Sanitary).

Owner-driven housing, instead of the donor-driven contractor-built housing offers many advantages. Households had been given money and new land as compensation for their former land acquired for port development. Houses were being built by the households themselves, and although not technically and design-wise perfect, they appeared to be better that those across the road built by donors. (Ahmed, I., McEvoy, D., 2010)

Results of the Ingirige, B., et al., 2008 study supported the principle of high level abstraction of core principles of housing reconstruction and localizing within the post-disaster context as evidenced by the higher level of satisfaction expressed by the victims of tsunami who were part of the owner-driven strategy. The results indicated that in the case of the owner-driven strategy, the people engaged effectively in generating their needs in terms of parameters such as space, design and flexibility for future expansion.

Community based approach has proven to be a better way on providing housing construction for the survivors. Compare to the contractor based approach it achieve high satisfaction among beneficiaries, delivering high quality project, faster, less problem, more cost effective, and the most important that contractor based approach could not provide is it helps community to gain back their confidence and ease the trauma they suffered. It builds the social capital of the survivor. (Ophiyandri, T., et al., 2010)

The Owner Driven Housing Strategy is the most ideal strategy to implement housing projects for disaster victims to strengthen their capacity and restart their life through training and construction their houses through them. (Miranda, AER S., 2010)

The housing reconstruction after Bam earthquake 2003 in Iran adopted community participation method. Fallahi, A., 2007 states that the key policy is where community active participation in the process of designing, planning and constructing units was

strongly encouraged. Householders were given the ability to choose their own plans and layouts and act as the supervisors of their own projects, thus paving the way to establish a line of cooperation between designers and contractors. This approach also ensured that government loans resulted in the desired houses being built for the people.

In Gujarat India, following 2001 earthquake, Barenstein J., 2006 founds that owner-driven housing reconstruction was the most cost-effective, fastest and the most satisfactory approach according to the beneficiaries. The same studies also found that contractor based approach was infamous, where only 22.8 percent of the beneficiaries were satisfied. A small scale community participation in Duzne, Turkey after 1999 earthquake also shows its advantages compare to the majority of non-community based approach. (Arslan, H, Unlu, A., 2006)

Based on their experience in Aceh, Dercon, B., Kusumawijaya, M., 2007 states that community based housing reconstruction get high achievement because it respond quickly to urgent needs and thus can achieve relief at an early stage, mobilizes solidarity among the members of a community and therefore creates social capital, allows women to be a part of the reconstruction work, strengthens local institutions, achieves good planning which leads to high quality results, limit disaster vulnerability, and it can be done with good monitoring and thus achieve transparent accountability.

There were two methods of funding housing reconstruction after the tsunami. The owner-driven housing reconstruction through the grant-based national programme proved to be much more effective than donor-driven housing reconstruction. By the end of 2006 out of 79,184 required houses 49,531 owner-driven houses and 14,488 donor-driven houses were completed. Quality of housing and access to services was often reported to be worse than before the tsunami. (Maria Roth, A., 2012)

In the aftermath of the 2004 Indian Ocean tsunami, the ‘infusion of aid’ model was preferred and encouraged by the majority of housing reconstruction projects. Under the donor-driven reconstruction approach, many humanitarian organizations pursued contractor-built implementation. In comparison with contractor built reconstruction, the owner self-built approach is empowering and participatory, and thus was popular among NGOs which consider community redevelopment and participation from their main objectives. (Chang, Y., et al., 2011)

A report on reconstruction activities in all sectors touches on some of the discrepancies in achievements and scale between the two programs (centralized ‘‘Donor-assisted” and decentralized ‘‘Owner-driven”), but does not analyze causes. Thus, the analysis of the important differences between the programs is timely. (Lyons, M., 2009)

The findings of Lyons, M., 2009 study clearly demonstrate that the Owner-driven Program performed better than the Donor assisted Program on both quantitative and qualitative criteria. The Owner-driven Program produced more houses, more quickly, of better construction quality, and at less cost. Space standards were generally better, and the designs, layouts, and locations were more acceptable to beneficiaries. Infrastructure, services, and amenities were more readily provided to Owner-driven Program sites.

Beneficiaries from owner-driven and donor-driven programmes were selected and a questionnaire survey was administrated to identify the level of satisfaction of their housing unit on parameters such as: quality, strength, durability, functionality, space availability, aesthetics, flexibility to make changes in the future, possibility of incorporating beneficiary requirements at the design stage, land size, location and overall facilities provided as per table below. (Karunasena G., Rameezdeen R., 2010)

Table 2-1: Comparison of satisfaction score of the beneficiaries in donor-driven and owner-driven approaches

Parameter	Donor driven	Owner driven
Durability of house	1.92	3.44
Aesthetics and appearance	2.93	2.98
Functionality	2.83	2.43
Space availability	2.41	3.40
Incorporation of beneficiary requirements at the design stage	2.04	3.09
Flexibility to make changes in future	2.14	2.93
Location of the house	2.11	3.49
Size of land	1.80	3.28
Overall facilities provided	2.64	3.21
Response time	1.56	2.08

Source: Karunasena G., Rameezdeen R., 2010

According to Karunasena G., Rameezdeen R., 2010, overall responses obtained for owner-driven approach shows a higher satisfaction score compared to donor-driven approach except for one parameter: functionality. Parameters such as functionality and aesthetics have scored comparatively higher ratings for donor-driven approach. This result is not surprising as donor-driven housing projects were generally designed by professional architects. Low ratings have been obtained for parameters such as response time, durability and size of land. Respondents have clearly discriminated the two approaches on all parameters except aesthetics in the following order of significance:

- Durability of the house
- Incorporation of beneficiary requirements at the design stage
- Location of the house
- Flexibility to make changes in future
- Size of land
- Space availability
- Overall facilities provided
- Response time
- Functionality

Capacity limitations of the construction industry also became a major impediment in the reconstruction process. Capacity in terms of professionals, material, labor, etc. was found to be severely restricted for such a mammoth reconstruction task. The survey found that capacity constraints affected the donor-driven programmes more severely than owner-driven programmes. (Karunasena G., Rameezdeen R., 2010)

The comparison of respondents' satisfaction on the two housing strategies shows that the occupants of donor-driven housing were significantly more satisfied than those of owner-driven houses in terms of aesthetics, quality, durability & functionality. Also, the results show that owner-driven house occupants were more satisfied than the donor-driven occupants in terms of availability of space ability to influence design changes and affording flexibility to perform future expansion. (Ingirige, B., et al., 2008)

In comparison to the alternative of donor driven houses the cash project appears to have been much more effective and efficient. On the whole, people built their own houses more quickly and more cost effectively, than contractors built houses and contributed at the same time to the local economic recovery. (Aysan, Y., et al., 2006)

While owner-driven housing reconstruction has its merits, it may not always be possible to apply this approach. House-owners may be pre-occupied with their other livelihood activities and may not be able to participate in the reconstruction activity. Therefore, a combination of owner-driven and contractor driven approach should be adopted. There may be other innovative approaches such as establishment of family cooperatives for owner-driven construction that can be explored. (Kishore, K., et al., 2003)

Lyons, M., Schilderman, T., 2010 stated that owner-driven reconstruction generally is more successful than donor-driven reconstruction, e.g. it is quicker, cheaper and more satisfying to the owners. The key advantages of owner-driven reconstruction over donor-driven reconstruction are summarized as follows:

1. Owner-satisfaction is higher.
2. Construction is quicker.
3. Owner-driven reconstruction is cheaper for agencies, because owners add other resources; thus, agencies are able to help more people within their budgets.
4. There is greater incorporation of livelihood needs, as owners are more involved in key decisions.
5. The Owner-driven reconstruction process strengthens social capital and skills and can empower individuals and communities.
6. Quality can often be better than in donor-driven reconstruction, but that depends on the available skills, information and support.

The question of which model, owner or contractor-driven, is objectively 'best' does not have a clear answer. Are the structural vulnerabilities resulting from technically insufficient owner-driven reconstruction offset by locally-owned, culturally-appropriate structures built and psycho-social benefits of re-building a person's surroundings? The fragmentation, administrative weakness, lack of early-onset technical assistance & contested sources of resources & authority found in nearly every post-conflict environment means that trade-offs will continue to be necessary. So, a mixed approach differentiated on the basis of socio-economic vulnerability & individual preference may help to mitigate the negative effects of such tradeoffs. (Barakat, S., Zyck, S., 2011)

In past rounds of reconstruction in southern Lebanon, actors had engaged in contractor-driven housing reconstruction for, in particular, the poorest and most vulnerable, an approach which should be resuscitated. A mixed approach, with the poorest receiving participatory contractor-driven reconstruction and owner-driven approaches for the

relatively better off may result in the greatest benefits, although households must retain the right to select the model to which they are subject. A third option may also be considered whereby, rather than a mixed approach, a hybrid contractor and- owner-driven model is pursued. Such a model would include the construction of a solid foundation and frame by professional contractors and the provision of grants to enable owners to finalize the home by designing the layout and including culturally relevant aesthetic touches according to their own specifications. (Barakat, S., Zyck, S., 2011)

Timeline

When concern about the views of the victims on the timeliness of the delivery of permanent houses, Ratnayake, R.M.G.D, Rameezdeen, R., 2008 study shows a fairly satisfied response to owner driven housing programme when compared to donor driven houses. In the case of owner driven programme has taken less time to arrange the financial assistance and other aspects but donor driven programme has get more time than owner driven due to acquire lands, design, contractual arrangement and construction in the whole procedure due to large scale of housing projects.

Ophiyandri, T., et al., 2010 stated that the housing delivery using community based approach is also faster than contractor based approach. Few housing projects which involved homeowners in the construction process have been completed more quickly, with far fewer problems, than the majority of projects that took a turnkey approach. Moreover, Dercon, B., Kusumawijaya, M., 2007 also states that in Aceh reconstruction the community based approach has proven to be faster and to deliver results of higher quality and satisfaction than other reconstruction methods.

Quality / Strength / Durability

In the case of donor driven programme, only 5% of the dwellers were very satisfied and 15% were somewhat satisfied while 47% were somewhat dissatisfied and 33% of the dwellers were very dissatisfied. Due to much more reasons are behind that and the dwellers were not satisfied with strength, arrangement of structure, quality of material used, improper land fillings and cuttings and dreadful manner of construction of the houses. Also due to increment of intermediate dealers, in each transactions have end resulted to minimize the amount of money for single housing unit. Finally that has affected to carry out contractors' duty in less cost target, which reflected to select low cost and poor quality materials, offensive method statements, etc. By the way most

observed projects are with small to sever defects and some houses are taken leave off. In most case the dwellers involvement to construction activities was less and that 5% of very satisfied has succeeded due to the dwellers participation. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

Throughout the survey result 55% of the dwellers of the owner driven programmes were very satisfied and 34% were somewhat satisfied. Dwellers in owner driven houses argued that high level of quality standards can be achieved when the inception to completion is done with participation of the resident. Most often the owners have recognized that better design and structural stability with superior quality maintenance of their newly residences is well important to future vulnerability. Financial assistance gained from the state was reinforced by the top up grants provided by the private donors in most of owner driven programme and other than that further money recovered from loans, own money, relations and friends assistance, etc. So comparing the outcomes of the survey it should be noted that in the case of owner driven programme is in high position than donor driven programme in respect to quality, strengthen and durability of their permanent residences. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

Our detailed observations of owner-reconstructed houses indicate that the quality of construction in most cases was good, and that the houses were seismically safe. High-quality construction was achieved thanks to strict building codes and good technical assistance and supervision. The disbursement of financial assistance in tranches also helped to ensure good construction quality and seismic safety. (Barenstein J, 2006)

Functionality

The majority of the donor driven programme (41%), was very satisfied and the majority of owner driven programme (52%), was somewhat dissatisfied. Most of deign in donor driven houses are done by the qualified architect by concerning the Sri Lankan culture with basic amenities. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

Space availability

According to the survey results, it has been recognized that equally fair distribution can see in donor driven programme in the case of space availability, which depend on several aspects such as members in a family, livelihood pattern, living standards, etc. The majority of the owner driven programme (59%), was very satisfied due to most of dwellers have identified their requirements and well established it concerning the number of family members. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

The significant difference between the number of rooms per housing unit by self-help and contractor-driven should mainly be attributed to the difference in the delivery method. It should also be added here that a far larger degree of architectural design in self-help in contrast to the homogeneous housing types in contractor-driven.

Table 2-2: A comparison of the current number of rooms in houses in self-help and contractor-driven

Number of rooms	Self-help		Contractor-driven	
	Number of respondents	%	Number of respondents	%
1	12	15.8	2	2.6
2	3	3.9	70	92.1
3	7	9.2	2	2.6
4	21	27.6	2	2.6
5	13	17.1	0	0.0
6+	20	26.3	0	0.0
Total Average	**76 4.28**	**100.0**	**76 1.97**	**100.0**

Source: Marais, L., et al., 2003

Flexibility to make any changes in the future

The majority, which is 54% of the dwellers of the owner driven programmes, were somewhat satisfied and majority of donor driven programme which amounts to 56%, were somewhat dissatisfied with the case of flexibility to make any necessary changes in the future. It has been noted that most of the dwellers in donor driven programme do not have any intention to change it presently due to that the original deeds were still not handover to them and either allowable land area is not enough to do horizontal alignment or that the design is not concern the vertical alignment to further developments. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

Satisfaction and Accountability

Table 2-3: Satisfaction of the dwellers – donor driven vs. owner driven

Factors	Very satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied
Donor driven				
Quality/ Durability	5%	15%	47%	33%
Functionality	26%	41%	24%	8%
Space availability	20%	26%	29%	25%
Flexibility to make any changes in the future	4%	23%	56%	17%
Owner driven				
Quality/ Durability	55%	34%	11%	0%
Functionality	13%	26%	52%	9%
Space availability	59%	24%	15%	2%
Flexibility to make any changes in the future	22%	54%	19%	5%

Source: Ratnayake, R.M.G.D, Rameezdeen, R., 2008

Table 2-4: Dwellers' total satisfaction regarding their permanent resident

Reconstruction Strategy	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied
Donor Driven	12%	17%	40%	31%
Owner Driven	33%	50%	15%	2%

Source: Ratnayake, R.M.G.D, Rameezdeen, R., 2008

It has been stated before that post disaster housing reconstruction in Aceh has face a lot problems, a delay in project delivery, poor quality, low satisfaction, low accountability, and less community participation. However there are some good practices that can be learned. The community based housing reconstruction has proven to be a better way in reconstruction compare to contractor based approach (Ophiyandri, T., et al., 2010).

Table 2-5: Housing reconstruction index

Organizations	Construction quality (0 to 4)	Satisfaction score (-9 to 9)	Accountability score (0 to 10)
All organizations in 2006	2.58	1.2	6
All community organizations program	2.67	2.1	6.7
All contractor-built program	5.9	0.8	5.9

Source: Dercon, B., Kusumawijaya, M., 2007

Overall the owner driven programme was more transparent and accountable than the donor-assisted' programme. Owner driven programmes reported lower levels of corruption, although there was more cash available in the Owner driven programmes in comparison. There were more reports of corruption in the donor-assisted' programme, targeted at staff of implementing agencies and local officials, as bribes are claimed to have been obtained to provide houses and in contracting construction. (Hidellage, V. and Usoof, A., 2010)

According to Van Leersum, A., Arora, S., 2011, 50% and 30% of surveyed households were very satisfied and somewhat satisfied when answering a question about How satisfied are you with the end-result of your new house?

Marais, L., et al., 2003 indicates that the level of satisfaction of people in the self-help programme regarding the houses people live in, is considerably higher than in the case of contractor-driven one. The fact that a far greater percentage of respondents in self-help programme were satisfied with the number of rooms (49% versus 18%), as well as the type of material used (79% versus 41%), is significant.

The majority of people were happy with their new houses. This is shown in Table 2.6, which indicates that, on average, 94.5% of households were fully satisfied, and a large percentage could find no faults with their new homes. (Barenstein J, 2006)

Table 2-6: Satisfaction with owner-driven reconstruction (%; N=136)

Satisfaction with:	Village 1	Village 2	Village 3	Village 4	Village 5	Average
House location	100%	99%	95%	100%	100%	99%
House size	83%	86%	95%	96%	100%	90%
Quality of materials	100%	92%	95%	96%	100%	94%
Construction quality	100%	94%	95%	96%	100%	95%
Average	**95.75%**	**92.75%**	**95.00**	**97.00**	**100**	**94.50**

Source: Barenstein J, 2006

Utilization of own resources

Although the consolidation subsidy was a mechanism to ensure better shelter by means of a state subsidy, the intention of the housing subsidy is that incremental upgrading of housing units should take place. An important indication of the degree of incremental upgrading would therefore be reflected in the degree to which households have made use of their own resources during the construction. (Marais, L., et al., 2003)

2.5. Global experience in donor-driven

UNDP supported a local organization to implement an owner-driven reconstruction programme, gaining experience over an extended period and building upon that. A key success element of the programme was that relocation was avoided and houses were rebuilt in situ, benefiting from existing services and networks instead having to re-establish them in a new location. (Ahmed, I., 2011)

The second strategy was known as the donor-driven strategy, which was mainly targeted at people living within the buffer zones attached to the coastal area who had to be relocated. Under this strategy, for those within the buffer zone, all affected families are entitled to a house built by a donor agency on land allocated by the state in accordance with Sri Lankan government standards. The donor provides each new settlement with an internal common infrastructure while the Sri Lankan government provides the services up to the relocation site. (Ingirige, B., et al., 2008)

After the tsunami, the government of Sri Lanka introduced a 100 m buffer zone in the west and south and a 200 m buffer zone in the east and north; restricting reconstruction. This led to two types of housing reconstruction programs- namely, donor built reconstruction to relocate the affected people from the buffer zone and a home owner driven housing reconstruction program for damaged and destroyed houses outside the buffer zone. The total number of houses to be built under the donor built program is about 30,000 and under this program all affected families are entitled to a house built by a donor agency satisfying the standards specified by the government. The beneficiary will be the owner of the properties at the resettlement site as well as in the buffer zone. (Ratnasooriya, H., et al., 2007)

In 1970, major earthquakes struck Peru and Turkey, causing much damage and many casualties. In both cases, the government initiated large reconstruction programmes, often involving relocation, and received assistance form external humanitarian agencies on an unprecedented scale. The approaches followed by governments and agencies alike were to build houses for people rather than with them. And they had important flaws: many of the houses built remained unoccupied, and affected people reverted to their old ways of building, remaining vulnerable to future risks. (Lyons, M., Schilderman, T., 2010)

2.6. Global experience in owner-driven

This programme is established to restore the normal life of the war victims by strengthening through motivating and training to reconstruct their houses themselves. To achieve this target, "Owner Driven Housing Construction Strategy" has been established to reconstruct the war damaged houses through the victims themselves. Initially, "Owner Driven Strategy" was tested by assisting to the beneficiaries to construct 860 houses in the year of 2004. Based on the experience, lessons learned from the pilot project, Owner Driven Construction Strategy was modified. (Miranda, AER S., 2010)

Seeing the mammoth task of reconstruction and challenges posed, the Earthquake Reconstruction and Rehabilitation Authority (ERRA) in Pakistan developed a comprehensive policy for reconstruction and rehabilitation. ERRA recognized that the interventions in rural areas would not be those suitable for urban areas because of the diverse socio-economic regimes in rural areas, their restricted accessibility to materials, technology and information, and the state's lack of capability to administer the laws, enforce compliance with building codes, force submission of plans to the relevant local authority. They therefore developed a different strategy for reconstruction. The basic focus was to "build back better" with house-owner driven reconstruction under assisted and inspected construction by government through partnering organizations. Their strategy envisages a community-based approach that shares the responsibility amongst as many qualified partners as possible for reconstruction. (Mumtaz, H., et al., 2008)

In order to assist the reconstruction, implementation of seismic safety in construction, and proper quality control, it requires mobilization of a large number of assistance and inspection teams for house-to-house advice, and subsequent inspection to certify the house as compliant for the Earthquake Reconstruction and Rehabilitation Authority (ERRA) in Pakistan to disburse cash grants in tranches through the banks. (Mumtaz, H., et al., 2008)

The salient features of the reconstruction policy finalized by the Earthquake Reconstruction and Rehabilitation Authority (ERRA) in Pakistan sets a uniform policy for financial grants and technical support, throughout the earthquake-affected areas. It offers a uniform financial assistance package for rebuilding to all those affected. Uniform technical assistance is based on a model of one partner organization operating

in each Union Council. The partner organization has technical and social mobilization staff in multiple mobile teams delivering information, advice and assistance at village level. The teams include artisans, and are supported by engineers. Partner organizations are supported at district level by Housing Reconstruction Centers operated by UNHABITAT. (Mumtaz, H., et al., 2008)

The popularity of owner-driven approach is increasing even among the donor community. For example, the largest donor for tsunami reconstruction in Sri Lanka, International Federation of Red Cross and Red Crescent Societies had used owner-driven approach for nearly 68 per cent of their housing reconstruction (15,120 houses against a total of 22,350). (Karunasena G., Rameezdeen R., 2010)

The government devised two different strategies for permanent house building. The first strategy was known as the home-owner driven strategy, for those outside the buffer zone, all affected households that were able to demonstrate ownership to land were entitled to a grant by the state. Under this strategy, the government provided a cash grant of Rs.250,000 for a fully damaged house (in 4 installments), and Rs.100,000 (in 2 installments) for a partly damaged house. In addition, several NGOs provided additional payments or provided labor, materials and general technical assistance to support families rebuilding their own homes. This strategy was also termed as "assisted self-help". (Ingirige, B., et al., 2008)

Under the home owner driven program, affected houses are classified as either partially or fully damaged and the affected house owners are to be provided with cash grants (US $ 1000 for a partially damaged house and US $ 2500 for a fully damaged house) for the repair or reconstruction of their houses. These grants are to be provided in installments at different stages of the repair/reconstruction process. The home owner driven program is funded by a group of major donors and has shown considerable progress in comparison to the donor driven program. (Ratnasooriya, H., et al., 2007)

The Swiss Consortium supported the ‘owner driven` programme of the Government of Sri Lanka. The programme provided the beneficiaries with 2,500USD in four installments if their house had been completely damaged and 1,000USD in two installments if their house had been partially damaged. Recipients had to prove that they owned a house and land title before the tsunami. The programme did not distinguish

between the economic status of the beneficiaries as the cash grant was expected to be sufficient for a ´core house' to be expanded out of the savings of beneficiaries or the 'top-ups' of agencies. The Swiss Consortium support was unique, in that they provided both funding and direct technical and management support to the Government of Sri Lanka in implementing the project in two districts. (Aysan, Y., et al., 2006)

A move in the right direction has been the emergence at scale of Owner-Driven Reconstruction (ODR), about a decade ago in Asia. The approach itself was not new; it had been supported largely by NGOs on smaller scales for several decades, especially in Latin America. What perhaps influenced the greater interest and scaling up are the changes in housing policies and strategies, from supply-driven to support-driven, over the years. Thus, more agencies recognized the major role played by home owners in the production of houses under normal circumstances, and queried why reconstruction after disasters should happen in such a different way. They therefore gave a much more prominent role to property owners in role for themselves. In this approach, the majority of reconstruction happened on the original plots, enabling owners to make use of the original infrastructure (if that was not damaged) and to make a quicker start. (Lyons, M., Schilderman, T., 2010)

Barakat, S., Zyck, S., 2011 stated that for owner-driven approaches to be successful, a variety of institutional pre-conditions (or facilitating features) should exist:

1. Owner-driven reconstruction requires the sort of powerful & mandatory centralizing or co-ordination structures that were lacking in post-July War southern Lebanon.
2. The second facilitating feature for owner-driven reconstruction directly relates to the provision of technical assistance. In the case of southern Lebanon, even where relatively substantial amounts of assistance were provided in a timely manner, the lack of technical assistance meant that homes were built without regard to technical standards and without due caution to threats posed by earthquakes and renewed conflict.

2.7. Advantages of donor-driven approach

Donor-driven housing was said to be a more sustainable solution compared to owner-driven housing. The supervision of donor-driven housing construction was also very effective, resulting in cost control and timely completion. (Ingirige, B., et al., 2008)

The contractor-driven approach is generally chosen because it is considered the easiest and quickest way of providing housing and reestablishing normality after a disaster. Using construction companies allows for the relatively rapid construction of large numbers of houses with standard specifications, using staff with technical expertise and specialist skills. This approach may be the best solution in contexts where knowledge of construction is limited to professionals, and where there is no tradition of community self-building. (Barenstein J, 2006)

Our research showed that the majority of beneficiaries were satisfied with the housing they received: 74% of households considered that their housing situation was better than before the earthquake, and 71.6% expressed overall satisfaction with their housing situation. Most people were satisfied with the location and size of the house. The flat roof was an innovative feature, and was used by beneficiaries to store or dry items. Several house owners liked the fact that their homes had the potential for upgrading. (Barenstein J, 2006)

2.8. Disadvantages of donor-driven approach

The following common resourcing problems are found in the donor-driven reconstruction in Indonesia according to Chang, Y., et al., 2010:

- Shortage of local materials, qualified construction contractors, and labor;
- Construction market inflation chaos caused by the shortages of main building materials;
- Difficulties in acquiring suitable quality construction timber;
- Logistical and environmental issues with importing timber from outside;
- Lack of collaborative activities in resource procurement among the aid agencies and between the donor community and the local governmental institutions;
- Lack of project management and procurement skills and lack of information systems for resource scheduling and management within NGOs.

Owner-driven approach allowed beneficiary involvement in design & construction, thus fully incorporating beneficiary needs. However, beneficiaries of donor-built houses complained that designs do not confirm to their rural lifestyle. (Karunasena G., Rameezdeen R., 2010)

Many large-scale, donor-driven projects were costly, inappropriate, increased risk, and were mean in design terms. Rebuilt villages designed to suit the demands of mass house building with no consideration of culture. (Sanderson, D., Sharma, A., 2008)

Lyons, M., Schilderman, T., 2010 said that this approach to reconstruction, which had agencies in the driving seat, is often termed donor-driven reconstruction. It has been much studied since 1970, and many of those studies listed important drawbacks:

1. Contractors prefer to build many uniform houses on large sites, but households needs differ.
2. There is a lack of user-participation at all stages; solutions are therefore often inappropriate and residents do not feel ownership.
3. It takes a lot of time to acquire, plan for and service large plots.
4. This manner of building is costly, yet the contribution to the local economy may only be limited.
5. Many projects involve the relocation of residents from their original sites; this may threaten their livelihoods.
6. Information sharing is poor in general.
7. Projects can be exclusive or gender-biased.
8. At times, quality control by agencies or inspectors is inadequate, leading to poor construction and vulnerability to future hazards.

The overall conclusion of all these is that donor-driven reconstruction should not be recommended, except for cases where very little local building capacity remains.

A significant proportion (36%) of house owners were not satisfied with the quality of the materials used, and 31% were unhappy about the quality of construction. These figures compare poorly with the 100% satisfaction rating among people in the same village who had opted for owner-driven reconstruction. (Barenstein J, 2006)

2.9. Advantages of owner-driven approach

Non-financial advantages

Through the owner driven housing reconstruction, the beneficiaries get opportunity to get training in construction technology and self-management to strengthen their ability and confidence for their self-standing life. (Miranda, AER S., 2010)

Since each beneficiary individually constructs their houses under Owner Driven Strategy, entire houses are being constructed simultaneously. As a result, construction progress is very high in this programme. (Miranda, AER S., 2010)

Based on the size of the family and type of employment, the housing need varies from family to family. For example, bigger family may prefer some additional rooms to accommodate all the family members. Similarly different geographical area beneficiaries may prefer different type of house pattern to suit to their type of employment. For example, the farmers may need an air tight store room in their house to store paddy and grains during the harvesting season. The fishermen may need a long verandah to store and maintain their fishing nets. In owner driven housing construction Programme, beneficiaries get opportunity to construct their house considering these requirements. (Miranda, AER S., 2010)

It has been observed when the dwellers have failed to show the progress of the work within the stated requirements, and then the victims have been unable to collect the next installment according to disbursement schedule. So that they had to wait for further money arrangement from top up grants, loans and other assistances from third parties to complete their houses and that has affected a fairly less progress in owner driven housing programme especially in fully damaged houses. (Ratnayake, R.M.G.D, Rameezdeen, R., 2008)

Owner driven housing programmes were faster to get off the ground especially for damaged or destroyed houses situated outside the original buffer zone. (Hidellage, V. and Usoof, A., 2010)

If occupancy rates are to be taken as a proxy indicator for the level of satisfaction, the owner driven programme may be termed as 100 per cent successful in the post tsunami context. None of the houses have been identified as unoccupied by the UNHabitat

coordination project, which also provides the official figures for post tsunami housing. In addition, a study involving a sample of 135 beneficiaries from the Eastern and Southern provinces indicated that the beneficiaries of owner driven housing programmes expressed a high level of satisfaction. Over 70 per cent of beneficiaries were happy or very happy about all the aspects of the houses except energy and infrastructure. (Hidellage, V. and Usoof, A., 2010)

The same survey revealed that 51 per cent of the beneficiaries made monetary contributions towards the construction of the house. This is seen as one aspect which increased the sense of ownership for the houses. The size of the contribution ranged from LKR3,000–600,000 (approx. $25–5,220) depending on the wealth, interest and need of the beneficiary. (Hidellage, V. and Usoof, A., 2010)

According to Karunasena G., Rameezdeen R., 2010, the proponents of cash-based approach highlight following strengths against distribution of food or commodity aid in disasters:

- Speed of delivery.
- Less costly due to reduced transaction costs.
- More empowering local communities with a wide choice.
- Stimulation to local markets and trade.

In owner-driven approach, construction may be incremental and there is a possibility of having extensions to a house in future. Most houses had plenty of land around and the owners can extend their houses. It provided quick re-settlement, as there was possibility of occupancy before a house is fully completed. In addition, it provided quick mobilization of reconstruction work. (Karunasena G., Rameezdeen R., 2010)

Davis, I., 2006: Since each sector has its own attendant professions (engineers for physical recovery, social or health officials for psycho-social recovery etc.) there are major challenges in demolishing professional barriers to facilitate joint working. A rare example of synthesis is cited below that describes how owner driven housing reconstruction has strengthened three of the recovery sectors: psychosocial, economic and physical recovery in Ache:

1. The decision making and building process proved to be valuable psycho-social therapy for the community where residents have lost all or some of their families in the tsunami.

2. The building process has helped strengthen the local economy as the community has shared the profit margin that would normally be paid to a building contractor. But in addition, where community members have built their dwelling or organized sub-contractors to build they have been paid for this work, thus providing a much needed source of income. Many local families have gained new skills in building, community organization and financial management through this experience, thus strengthening their livelihoods. This is another aspect of economic recovery.

3. Through the process each surviving member of the community received a new safe house, a key element in their physical recovery.

4. There is a strong environmental recovery emphasis in the work. For example all surviving trees in the areas being reconstructed have been carefully preserved to provide the residents with some landmarks to give them some continuity with their past in which virtually every building had been destroyed. Since the ground level has dropped by about 1.5 metres special attention has been given to putting pressure on the government to build a protective coastal barrier.

In owner-driven housing, owners have the opportunity of identifying their needs and engage in various community participatory schemes and indicate their preferences in relation to parameters such as space, design changes and flexibility for future expansion. (Ingirige, B., et al., 2008)

This evaluation provides empirical evidence that the growing trend towards financial support to owner-driven post-disaster housing reconstruction is socially, financially and technically viable. It shows that in a context where people are traditionally involved in organizing the building of their own dwellings, given adequate financial and technical support and functioning markets, they have the capacity to construct houses that are more likely to respond to their needs and preferences than houses provided by outside agencies. (Aysan, Y., et al., 2006)

Scholars have highlighted that owner-driven housing reconstruction and rehabilitation tends to be more cost effective and results in higher occupancy rates than contractor-driven approaches. Furthermore, owner-driven models contribute to the development of technical capacities among those physically involved and allow individuals to engage in a productive and personally meaningful endeavor following a destabilizing crisis. Finally, they enable a degree of psycho-social recovery by allowing individuals not only to re-build their home but to also express a cultural identity which may have been targeted during the preceding conflict. (Barakat, S., Zyck, S., 2011)

The most tangible benefits are that the costs may be lower, building may be incremental, allowing occupancy before the house is fully finished, and occupancy rates tend to be higher. There are also a number of intangible benefits. Encouraging the active participation of disaster affected communities in the reconstruction of their homes may be a useful way of restoring a sense of pride and well-being in people who have been through a trauma. Building activities provide structure to the day, and can keep large numbers of community members gainfully occupied. An owner-driven approach allows people to reconstruct their houses according to their own preferences and requirements. With adequate financial and technical assistance, self-built houses are likely to be more sustainable. People, if given an option, tend to choose building materials and techniques that are familiar to them. Finally, an owner-driven approach may contribute to preserving the local architectural heritage and vernacular housing styles, features fundamental to a community's cultural identity. (Barenstein J, 2006)

Financial advantages

Since beneficiaries are allowed to plan and construct their houses themselves, the beneficiaries get opportunity to construct their houses with their physical work contribution. According to the survey, 90 percent of the unskilled works and 20 percent of the skill works have been contributed by the beneficiaries. Further the survey reveals that they could save maximum $3,000 and average $1,500 in their housing construction, due to their skill and unskilled work contribution. (Miranda, AER S., 2010)

Further, the beneficiaries get opportunity to contribute their own money and construct bigger size house than the minimum requirement. According to the survey, 50 percent of the beneficiaries have financially contributed for their housing construction. (Miranda, AER S., 2010)

Most of the beneficiaries are from rural area and they have quality trees and sand etc. in their own land, which can be used for the construction of houses. Further they have the opportunity to collect different kind of indigenous construction materials such as river sand rubble etc., from their village itself with their labor contribution. Since beneficiaries construct their houses, they get opportunity to adopt the locally available materials for their housing construction. (Miranda, AER S., 2010)

Since beneficiaries are constructing on their own, they get opportunity to adopt the portion of the damage houses to their new house, which are in good condition. They get opportunity to reuse the materials from their damage houses. (Miranda, AER S., 2010)

2.10. Disadvantages of owner-driven approach

It was observed that many agencies, companies and institutions try to promote their products in the name of safe, fast construction – even though these might not stand the test. The regulatory system should be aware of this, and should able to regulate the market. (Mumtaz, H., et al., 2008)

Yet the design and planning of owner driven housing programmes that promoted people-centered implementation processes were not participatory. No local consultations with local officials and stakeholders were carried out during the centralized project design stage. Centralized project design and planning may have helped to get the programme off the ground very quickly, but failed to take into account local social dynamics, such as the collapse of social support systems, localized market dynamics, and political and security conditions, which directly affected the beneficiaries' ability to drive implementation of owner driven housing programmes, especially in the conflict affected Northern and Eastern Provinces. Some owner driven housing programmes did not conform to basic owner-driven principles, for example, there were instances where beneficiaries were not given a free hand in designing their own houses and standard housing designs provided by agencies were not responsive to the social and cultural need of the communities. But in general construction within the owner driven programme was beneficiary driven. (Hidellage, V. and Usoof, A., 2010)

Assistance through the owner-driven programme was not delivered equitably in comparison to the donor-driven (or 'donor-assisted') programme. Persons within the buffer zone received houses based on humanitarian needs alone, whereas those outside

needed proof of ownership of the damaged or destroyed house and had to be registered in the database to be eligible for assistance; from the base grant and later the post-tsunami housing policy. (Hidellage, V. and Usoof, A., 2010)

The minimum requirement for the owner-driven programme was established with the objective of constructing better quality housing with improved disaster-risk reduction features. The initial estimates for cash assistance, however, did not seem to have taken the additional cost of disaster proofing into account. This added additional challenges to meet quality and the deadlines of the owner-driven programme. (Hidellage, V. and Usoof, A., 2010)

Availability of technical assistance in implementation to ensure minimum construction standards was not adequately emphasized in the owner-driven programme. At the conceptual level the owner-driven programme seems to have recognized the importance of technical assistance as this is incorporated into its plans. Enforcement was not a priority, and the plan was impractical. The sheer numbers in the caseload allocated to these few officers was unrealistically large and it made them less effective. Beneficiaries could obtain external technical assistance during reconstruction but the cash grants did not incorporate sufficient funds for this. (Hidellage, V. and Usoof, A., 2010)

The cash grant given to beneficiaries of the owner-driven programme was inadequate to complete construction to given standards. The government estimated financial assistance based on the pre-tsunami cost of a 500 sqft (45 sqm) house for the base grant. The boom in the construction industry after the disaster, due to the high volume of construction in rebuilding, increased the prices of construction inputs. The re-emergence of the conflict in the East added to the price escalation of construction inputs in those areas, as did the global increase in fuel prices. (Hidellage, V. and Usoof, A., 2010)

According to Karunasena G., Rameezdeen R., 2010, literature also points to a number of potential weakness of cash-based approach as against a traditional food aid intervention:

- Misuse and miss-appropriation.
- Injection of cash might trigger inflation.
- Security risk for the agency concerned and the beneficiaries.

The study however also warns of some of the risks associated to this housing reconstruction approach, such as insufficient support to the most vulnerable community members, which may create an important area of intervention for the NGOs. There were also risks relating to increased material and labor costs, which meant that the grant was not always sufficient to complete house rebuilding. In some instances this pushed low income beneficiaries into debt. (Aysan, Y., et al., 2006)

Lyons, M., Schilderman, T., 2010 stated that owner-driven reconstruction has generally been more successful where agencies were prepared to leave more of the driving to the owners. But owner-driven reconstruction can also have weaknesses; these are summarized as follows:

1. The approach focuses on legal owners and thus excludes those who cannot prove ownership, renters and squatters.
2. Standards set by agencies for reconstruction may be beyond what owners can maintain once the aid dries up.
3. To achieve the right construction quality may require quite a lot of capacity building, something that is often lacking.
4. Agencies sometimes label their projects as owner-driven reconstruction, where in reality they take most of the major decisions, and reserve only the building role for the owners.
5. Agencies fail to provide adequate technical support for the level of participation they are monitoring.
6. Like in donor-driven reconstruction, agencies often ignore and bypass local financial and government institutions, undermining long term sustainability.

The move from contractor-driven approaches prior to 2006 to owner-driven reconstruction following the July War resulted in substantial delays in the provision of grant-funded compensation, protracted displacement, entrenched poverty, increased structural vulnerability to future disasters and eroded cultural heritage and identity. The ease of delivery and reduction in transaction costs permitted by owner-driven reconstruction resulted in the involvement of numerous ‘non-traditional’ donors from, primarily, neighboring countries and significantly increased the funds dedicated to the housing sector. (Barakat, S., Zyck, S., 2011)

2.11. Summary

Information from researches are carefully analyzed and summarized as follows:

- One of the most visible consequences of many disasters (Natural or Man-made) is the widespread devastation of houses.
- Reconstruction process begins usually the day after each disaster.
- The choice of the best reconstruction approach to be employed should take into consideration (1) reconstruction costs; (2) improvement in housing and community safety; (3) restoration of livelihoods; (4) political milieu; (5) cultural context; and (6) people's own goals for well-being, empowerment, and capacity.
- Post-disaster housing reconstruction can be undertaken through different approaches, which vary principally in terms of a household's degree of control over the reconstruction process.
- In general, there are five reconstruction approaches that may be pursued after a disaster:

  1. ***Cash assistance***: unconditional financial assistance is given to affected households without technical support.
  2. ***Owner-driven reconstruction (Self-help)***: conditional and adequate financial assistance is given, accompanied by adequate technical support aimed at ensuring that houses are built back better.
  3. ***Community-driven reconstruction (Participatory housing approach)***: financial/material assistance is channeled through community based organizations (CBOs) that are actively involved in decision making and in managing reconstruction.
  4. ***Donor-driven reconstruction in-situ (Contractor-driven in-situ)***: the governmental or non-governmental agency hires a construction company to replace damaged houses in their pre-disaster location.
  5. ***Donor-driven reconstruction in relocated site (Contractor-driven ex nihilo)***: the governmental or non-governmental agency hires a construction company to build new houses in a new site.

- Both owner-driven and donor-driven approaches are the most widely used approaches in reconstruction process.
- Owner-driven approach has proven to be the most empowering, dignified, sustainable, and cost-effective reconstruction approach in many types of post-disaster situations.
- ***Advantages of donor-driven approach***: new building technologies, good technical supervision, cost and time control and easiest and quickest way.
- ***Dis-advantages of donor-driven approach***: shortage in qualified construction contractors, negative logistical and environmental impacts, limited or no involvement of beneficiaries in project cycle, don't take into consideration cultural changes, non-suitable house design and no contribution to the local economy.
- ***Advantages of owner-driven approach***: capacity building of households, fast, high level of beneficiary satisfaction, cost effective, strengthening psychosocial, economic and physical recovery, high occupancy rate and ability to financial and non-financial contribution.
- ***Dis-advantages of owner driven approach***: inadequate grants, focuses on legal owners, need more capacity building to achieve better quality and households of elderly and vulnerable groups will face difficulties managing reconstruction alone.

As one reconstruction expert aptly stated: "*It is better to have 100,000 people each concerned about one house than to have 100 people concerned about 100,000 houses"*.
(World Bank, 2010)

Chapter III

METHODOLOGY

Chapter III: Methodology

3.1 Introduction

This chapter discusses the methodology which was used in the research. It includes information about the research strategy, research design, population and sample size, research location, data collection, pilot study, validity, reliability and the method of data processing and analysis.

3.2 Research strategy

There are two types of research strategies: quantitative research and qualitative research. (Naoum, 2007)

In this research, a combination of quantitative and qualitative approaches were used to explore, analyze and understand the perceptions of both experts and people who benefited from reconstruction process towards the factors affecting quality and durability, time, cost, accountability and transparency, flexibility to make changes in the future and overall satisfaction.

3.3 Research design

This research consists of seven phases:

- First phase: finalize the proposal that identifying the problem and establishment of the objectives of the study and development of research plan.
- Second phase: includes comprehensive literature review for reconstruction approaches with especial focus on both donor-driven and owner-driven that being used by implementing agencies in the Gaza Strip.
- Third phase: includes a field survey to assess the factors needed for comparison of both approaches: donor-driven and owner-driven.
- Fourth phase: focuses on data collection using interviews, questionnaire survey, field observation and cases study.
- Fifth phase: includes questionnaire distribution.

- Sixth phase: includes data analysis and discussion. The Statistical Package for the Social Sciences (SPSS) was used to perform the questionnaires analysis.
- Last phase: includes conclusions and recommendations.

The techniques and design of the data collection process were arranged so that the research objectives would be achieved. The research data and analysis were triangulated from multiple sources to improve the credibility of the findings.

Figure 3.1 illustrates the methodology flow chart.

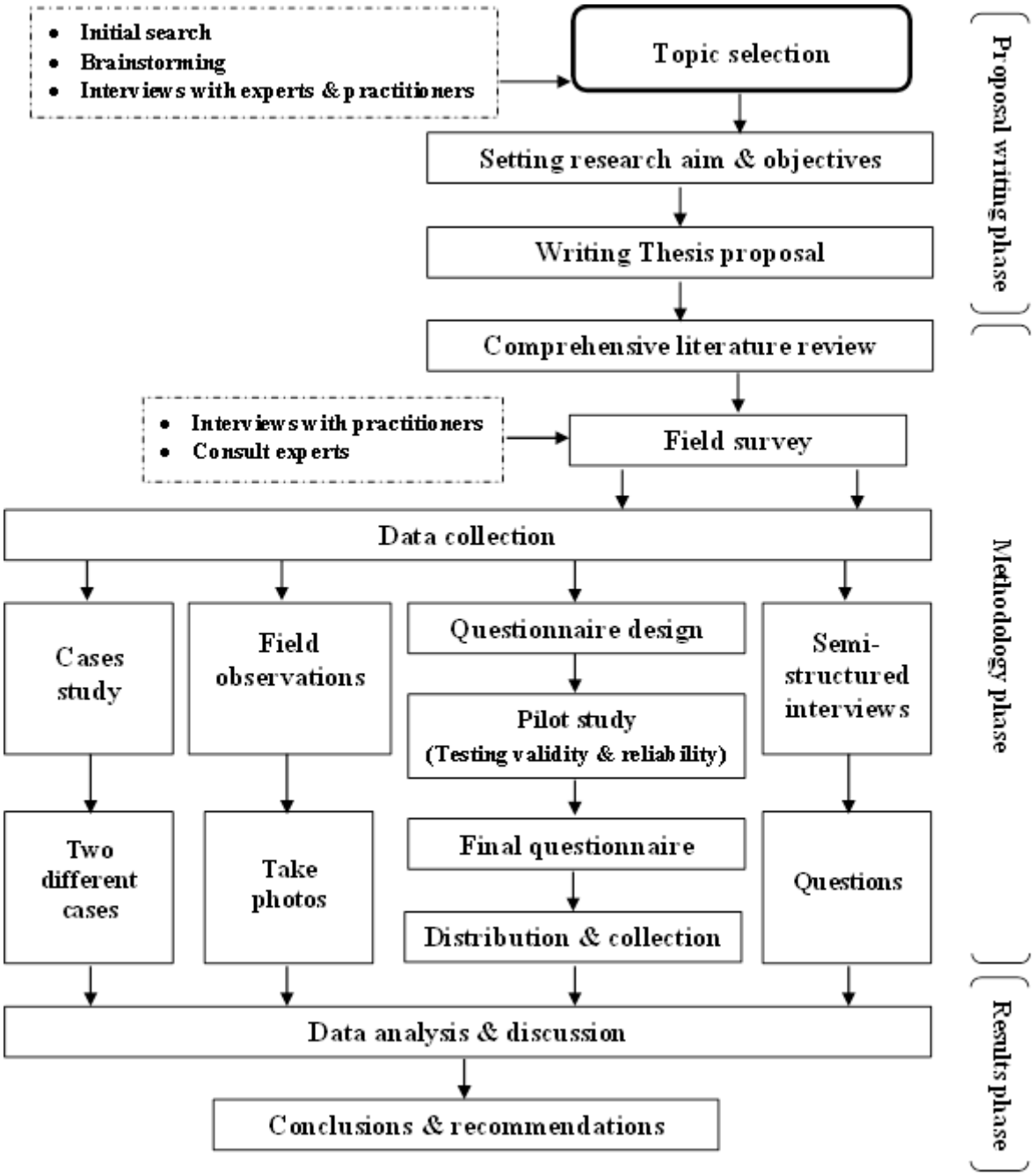


Figure 3-1: Methodology flow chart

3.4 Population and sample size

Two types of population were targeted in this research included affected people from the 2008/2009 war on Gaza Strip whose houses were reconstructed in addition to agencies and International NGOs leading the reconstruction process in the Gaza Strip.

In questionnaire survey, Wood and Haber (1998) defined the sampling as the process of selecting representative units of a population for the study in research investigation. A sample is a small proportion of a population selected for observation and analysis. The samples were selected randomly from affected people who benefited from the reconstruction process.

Statistical equation (Kish equation) was used in order to calculate the sample size for the beneficiaries as follows:

$$n = \frac{n'}{1 + \left(\frac{n'}{N}\right)}$$

Where:

n: sample size from finite population

n': sample size from infinite population, which can be calculated from this formula:

[$n' = S^2/V^2$], where:

- V: Standard error of sample population equal 0.05 for the confidence level 95%, t= 1.96
- S^2: Standard error variance of population elements, S^2= P (1-P); maximum at P= 0.5

N: Total population (Beneficiaries) = 1,700 completed houses

The sample size for beneficiaries' population is calculated as follows:

$$n = \frac{100}{1 + \left(\frac{100}{1700}\right)} = 94.44$$

Although the calculated sample size for beneficiaries is about 94, the survey was targeted 137 beneficiaries to reflect higher reliability and benefits for the study and avoid any problems in responses.

3.5 Research location

The study was carried out in the five Governorates of the Gaza Strip.

3.6 Data collection

Various methods had been employed for data collection included:

1. Semi-structured interview: interviews were conducted with both governmental and non-governmental institutions to identify involvement of various stakeholders in the reconstruction work, strategies adopted and their success.

2. Structured questionnaire: this mainly focused on identifying the successfulness of the two reconstruction approaches by an in-depth investigation. Beneficiaries from owner-driven (60%) and donor-driven (40%) programmes were selected in different locations in Gaza Strip and a questionnaire survey was administrated to get their perceptions and identify the level of satisfaction of their housing unit on parameters: quality and durability, timeline, cost, accountability and transparency, flexibility to make changes in the future and overall satisfaction.

3. Field observation: in addition to the interviews and questionnaires, observation of completed houses, their environment and infrastructure services were carried out by the researcher in order to verify the findings of questionnaire survey. Observation was carried out in all households visited by the field surveyors.

4. Case study: two cases study was selected from completed reconstruction projects in the Gaza Strip then they were analyzed. The first case study was for a donor-driven reconstruction project that included rebuilding of 20 housing units at different areas of the Gaza Strip. The second case study was for an owner-driven reconstruction project that included financing the rebuilding of 71 housing units in the Gaza Strip.

3.6.1 Semi-structured interview

Leading governmental and non-governmental institutions were selected for interviews. (See Table 3.1 for the profile of interviewees)

Table 3-1: Profiles of interviewees

#	Institution	Position of persons interviewed	Type of institution	Date of interview
1	Engineering & Management Consulting Centre (EMCC) Islamic Development Bank (IDB) consultant	Managing director	Private sector / Consultant	01/04/13
2	Norwegian Refugee Council (NRC) – Shelter cluster lead	Shelter coordinator	International NGO	07/04/13
3	Palestinian Housing Council (PHC)	Director general	Local Agency	08/04/13
4	Ministry of Public Works and Housing (MoPWH)	Director general	Governmental	08/04/13
5	Dar Al Kitab W Al Sunna	Projects manager	Local NGO	20/04/13
6	Mercy for Relief & Development	Projects manager	INGO	24/04/13
7	Islamic Relief Palestine	Projects engineers	INGO	05/05/13
8	United Nations Relief and Works Agency (UNRWA)	Shelter Engineer	UN Agency	09/05/13
9	United Nations Development Programme (UNDP)	Projects manager	UN Agency	29/05/13

General questions had been prepared to explore the local practices of reconstruction approaches. Annex III highlights the questions posted to interviewees.

3.6.2 Structured questionnaire

Structured questionnaire is probably the most widely used data collection technique for conducting surveys. Questionnaires have been widely used for descriptive and analytical surveys in order to find out facts, opinions and views. It enhances confidentially, supports internal and external validity, facilitates analysis, and saves resources. (Naoum, 2007)

In reference to the literature review and after interviewing experts who are in close relation with the subject at different levels, all the information that could help in achieving the study objectives were collected, reviewed and formalized to be suitable for the study survey and after many stages of brain storming with some experts, consulting, amending and reviewing, a questionnaire was developed with close ended questions.

The draft questionnaire was discussed with the supervisor. Then the questionnaire was sent to a statistical expert and ten experts in construction field who were asked to review the questionnaire and give their recommendations. The final questionnaire contains 60 factors comparing reconstruction approaches under 6 main categories.

The questionnaire consisted of three main sections to accomplish the aim of the research. For each section, all related factors found in the literature and previous studies were collected and reviewed. After that, some factors were deleted, modified, merged or selected. Also, some new factors were added according to the results and recommendations of the pilot study.

Table 3-2: Formulization of questionnaire factors

#	Factor	Action
1	**Quality & durability**	
1.1	Quality control arrangements were done (testing, etc)	Modified – add assurance
1.2	House reconstructed by general contractor	Used
1.3	House reconstructed by skilled workers	Used
1.4	Adequate technical assistance and quality control was provided by implementing agency on site	Modified – delete quality control
1.5	Availability of technical team	Used
1.6	Participation/consultation in project design process	
1.7	High quality materials were used	Used
1.8	Design and drawings were prepared by specialized firm / consultants	Used
1.9	Training were held before start reconstruction process	Modified – Orientation workshop

#	Factor	Action
1.10	Comfortable housing unit (internal design / quality)	Used
1.11	Adequate children protection (Electricity, handrail)	Used
1.12	Healthy housing unit (location, sunlight, air, etc)	Used
1.13	Participation in material selection	Used
1.14	Observable problems in housing unit (Cracks, leakage, etc	Used
1.15	Ready mix concrete used for main structural elements	Used
1.16	Sufficient tools / machinery on site	Added
1.17	Comments were taken into consideration during implementation process	Used
1.18	House privacy	Deleted
1.19	New reconstruction area is similar to demolished one	Added
2	**Time**	
2.1	Reconstruction was completed according to the agreed date and time	Used
2.2	Payments were transferred on time	Used
2.3	Reconstruction started in proper time after the war	Used
2.4	Implementation was well scheduled	Used
2.5	Project phases /milestones were completed as per plan	Used
2.6	Timely assistance from the implementing agency	Used
3	**Cost**	
3.1	Allocated money was sufficient for reconstruction process of the new housing unit	Used
3.2	Allocated money covered total loss of the original housing unit	Used
3.3	Financial participation	Deleted
3.4	Installments were paid on time	Deleted
3.5	Installments were sufficient	Used
3.6	Suitable linkage of installments with reconstruction phases	Modified
3.7	Procedure of transferring installments was efficient	Clarified
3.8	Currency gain/loss had negative effect on implementation process	Used
3.9	Usage of demolished house materials in reconstruction	Used
3.10	Participation in the reconstruction as skilled worker	Deleted
4	**Accountability & transparency**	
4.1	Participation in preparing designs and drawings	Deleted
4.2	Participation in supervision	Deleted
4.3	Participation in project closing	Deleted
4.4	Usage of bank accounts in transferring money	Used
4.5	Clear contract with implementing agency was signed before staring reconstruction process	Used
4.6	Availability of maintenance bonds / certificates on works done	Used
4.7	Regular follow up / monitoring by implementing agency on site	Used
4.8	Reconstruction approach was chosen transparently by the implementing agency	Used
4.9	Clear complaint system was adopted	Used
4.10	Information dissemination regarding reconstruction process was sufficient	Used

#	Factor	Action
4.11	Corruption was noticeable	Modified - Availability of solid control system to avoid any manipulation
4.12	All contracted items were completed	Used
4.13	Regular visits of governmental bodies to the site (Ministry of public works, municipality, etc)	Used
5	**Flexibility to make changes in the future**	
5.1	Adequate rooms for family members	Used
5.2	Design of housing unit foundations was taken into consideration future vertical expansion	Used
5.3	Efficiency internal design of the housing unit	Merged
5.4	Flexibility internal design of the housing unit	
5.5	Flexibility in re-locating / shifting walls and other internal elements	Used
5.6	Suitable location of the housing unit inside the whole land	Used
5.7	Essential services were sufficient for all family members	Used
5.8	Adaptation of different internal networks (water, wastewater, electricity, etc) for any changes	Added
5.9	People with disability needs were taken into consideration	Added
5.10	Adaptation to external environment	Deleted
6	**Satisfaction**	
6.1	Work quality / durability	Used
6.2	Housing unit total area	Used
6.3	Efficiency of design / space availability	Used
6.4	Reconstruction process starting time	Used
6.5	Reconstruction duration	Used
6.6	Reconstruction cost	Used
6.7	Future expansion / making future changes	Used
6.8	Reconstruction approach (donor-driven / owner-driven)	Used
6.9	Overall building appearance	Added
6.10	Availability of all requirements	Added
6.11	Overall satisfaction	Used

The following is a detailed description of the questionnaire content.

Section 1: contained general information about the population

Section 2: included 6 categories factors to be compared

Quality and Durability	***Timeline***	***Cost***	***Accountability and Transparency***	***Flexibility to make changes in the future***	***Satisfaction***
18 factors	*6 factors*	*7 factors*	*10 factors*	*8 factors*	*11 factors*

Section 3: included some open questions

The questionnaire was filled by beneficiaries in Arabic language since it is much effective and easier to be understood to get more realistic results. The same version questionnaire was used to collect the data and information from both who benefited from either donor or owner driven approaches. Unnecessary personal data, complex and duplicate questions were avoided. Beneficiaries were asked to give their opinions frankly and honestly.

Final versions of the questionnaire in both languages (English and Arabic) are attached in Annex II and Annex III respectively.

3.6.3 Data measurement

The ordinal scales (ranking or a rating data that normally uses integers in ascending or descending order) were used in this research. Likert scaling was used for ranking questions that have an agreement levels. The respondents were asked to give their perceptions in group of questions on five-point scale (1, for the strongly disagree or very unsatisfied to 5 for the strongly agree or very satisfied), which reflects their assessment regarding the factors affecting reconstruction process.

Item	Strongly agree or Very satisfied	Agree or Satisfied	Average	Disagree or Unsatisfied	Strongly disagree or Very unsatisfied
Scale	**5**	**4**	**3**	**2**	**1**

3.7 Pilot study

The pilot study provides a trial run for the questionnaire, which involves testing the wordings of questions, clarifying ambiguous questions, and testing the techniques that were used to collect data. (Naoum, 2007)

A pilot study for the questionnaire was conducted by distributing 20 questionnaires as a trial run and got feedback as detailed in 3.6.2 above.

3.8 Validity

Validity refers to the degree to which an instrument measures what it is supposed to be measured (Poilt and Hungler, 1985). Validity has a number of different aspects and assessment approaches. To insure the validity of the questionnaire, two statistical tests were applied: the Criterion-related validity test and the structure validity test.

3.8.1 Criterion-related validity test

The Criterion-related validity test (Spearman test) measures the correlation coefficient between each paragraph in one field and the whole field.

As shown in Annex IV, the significance values are less than 0.05 or 0.01 except 3 factors out of 60, so the correlation coefficients of the fields are significant at α = 0.01 or 0.05. As a result it can be said that paragraphs are valid to measure what they were set for to achieve the main aim of the research.

3.8.2 Structure validity test

The structure validity test (Spearman test) used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one filed and all the fields of the questionnaire that have the same level of similar scale.

As shown in Table 3.3, the significance values are less than 0.05 or 0.01, so the correlation coefficients of all the fields are significant at $\alpha = 0.01$ or 0.05. As a result it can be said that the fields are valid to measure what it was set for to achieve the main aim of the study.

Table 3-3: Correlation coefficient between one field and all the fields

#	Main factor	Pearson correlation coefficient	Significant (2 tailed)
1	Quality and durability	0.867	0.000
2	Timeline	0.789	0.000
3	Cost	0.668	0.000
4	Accountability and Transparency	0.532	0.000
5	Flexibility to make changes in the future	0.744	0.000
6	Satisfaction	0.888	0.000

3.9 Reliability

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measured. The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient. (Poilt and Hungler, 1985)

It is difficult to return the scouting sample of the questionnaire that is used to measure the questionnaire validity to the same respondents due to the different work conditions to this sample. Therefore two tests can be applied to the scouting sample in order to measure the consistency of the questionnaire. The first test is the Half Split Method and the second is Cronbach's Coefficient Alpha.

3.9.1 Half split method

This method depends on finding Pearson correlation coefficient between the means of odd questions and even questions of each field of the questionnaire. Then, correcting the Pearson correlation coefficients can be done by using Spearman Brown correlation coefficient of correction.

Table 3-4: Half-split method results

Main factor	No. of sub-factors	Correlation between forms	Spearman Brown Coefficient
Quality and durability	18	0.810	0.895
Time	6	0.474	0.643
Cost	7	0.386	0.530
Accountability & transparency	10	0.323	0.488
Flexibility to make changes in the future	8	0.847	0.917
Satisfaction	11	0.681	0.810
Total	**60**	**0.482**	**0.650**

From table above, it can be notices that Spearman Brown Coefficient ranges between 0.488 and 0.917 in addition to 0.650 for all paragraphs. So, it can be said that according to the Half Split method, the main factors are reliable.

3.9.2 Cronbach's coefficient alpha

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. Cronbach's Alpha can be written as a function of the number of test items and the average inter-correlation among the items. Below, for conceptual purposes, we show the formula for the standardized Cronbach's alpha:

$$\propto = \frac{\boldsymbol{N.c}}{\boldsymbol{v} + \big((\boldsymbol{N}-\boldsymbol{1}).\boldsymbol{c}\big)}$$

N is equal to the number of items, c is the average inter-item covariance among the items and v equals the average variance

The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency.

Table 3-5: Cronbach's Coefficient Alpha results

Main factor	No. of sub-factors	Cronbach's coefficient alpha
Quality and durability	18	0.818
Time	6	0.770
Cost	7	0.651
Accountability & transparency	10	0.583
Flexibility to make changes in the future	8	0.892
Satisfaction	11	0.859
Total	**60**	**0.653**

As shown in Table 3.5 above, the Cronbach's coefficient alpha was calculated for the main factors. The results were more than 0.700 except 2 mainly because different samples' population. But this range is considered high; the result ensures the reliability of the questionnaire.

3.10 Data processing and analysis

The questionnaire statistical analysis was done using the Statistical Package for the Social Sciences (SPSS). The analysis of data was done to determine the mean, rank and weight ratio of 60 factors as perceived by the respondents using mean analysis and relative importance.

3.11 Summary

Methodology used in the research is detailed in this chapter and summarized below:

- To be more effective, a combination of quantitative and qualitative approaches was used in the research as strategies to data collection.

- Main tools used for data collections were: (1) semi-structured interviews with 9 experts from Governmental / Non-Governmental institutions; (2) structured questionnaires targeted 137 families who benefited from the reconstruction process; (3) field observations; and (4) cases study for the two different approaches: the donor-driven and the owner-driven.

- Research strategies and tools were employed to explore, analyze and understand the perceptions towards the factors affecting quality and durability, time, cost, accountability and transparency, flexibility to make changes in the future and overall satisfaction.

- Questionnaire was (1) designed after reviewing the literature and consulting experts in the field; (2) formulized to be suitable for the research; (3) discussed with the supervisor; (4) piloted with 20 trial runs; (5) tested for validity & reliability; (6) filled through field interviews with targeted population; and (7) analyzed by statistical methods.

Chapter IV

RESULTS & ANALYSIS

Chapter IV: Results & Analysis

4.1 Introduction

This chapter explains and analyzes the results obtained from the tools used to collect the data: semi-structured interviews, questionnaires, field observations and cases study.

4.2 Interviews' results

Results of semi-structured interviews that were conducted with 9 institutions are:

4.2.1 Main approaches in reconstruction

Two main approaches were / are used in the reconstruction of the totally demolished houses in the Gaza Strip according to interviewees: donor-driven and owner-driven (Self-help).

Donor-driven approach: is the traditional approach in reconstruction in which the Government / implementing agencies leads the reconstruction process with no / limited participation from the owner. They usually contracted consultant firms to prepare designs and general contractors to rebuild the houses either in the same location or in new sites. This approach was used in reconstruction of many houses in the period from 2000 to 2009 but rarely used after that.

The concept of donor-driven approach as described above is similar to what mentioned in many studies like: Ratnayake, R.M.G.D, Rameezdeen, R., 2008 and Barenstein J, 2006.

Owner-driven approach (Self-help): is a recent approach in reconstruction in which the owner is managing the reconstruction process with both financial and technical assistance from the Government / implementing agencies. Owner-driven approach is a new theme in reconstruction and was used in the last three years by initiatives from many donors especially the Islamic Development Bank (IDB) within the Gulf reconstruction programme starting in 2010.

High level of knowledge and understanding of owner-driven approach concept by interviewees reflect the importance and interest towards more success in employing

this approach in the reconstruction process although with short time of experience. Most studies and researches definition of owner-driven approach confirms what was defined by interviewees especially: Ratnayake, R.M.G.D, Rameezdeen, R., 2008, Miranda, AER S., 2010, Twigg, J., 2006 and Barenstein J, 2006).

4.2.2 Advantages and disadvantages for each approach

Interviewees highlighted many advantages and disadvantages of these approaches that can be listed as follows:

Table 4-1: Donor-driven approach advantages and disadvantages

Advantages	Disadvantages
– Suitable for medium / large scale buildings / re-housing programmes – Suitable for reconstruction in special cases like: vulnerable families, people with disability, women headed families – Good design by consultants firms	– Poor quality – Frequent claims by contractors – Delay in the reconstruction process – Easily affected by frequent border closures, fluctuation of prices, etc – Restrictions on material sources and only accept what come through legal borders – No / limited involvement of households in the reconstruction phases – Lack of long term planning – Long process (i. e. preparing tender documents, adv, evaluation of offers, awarding, signing of contract) – High cost – In many cases, people make changes almost immediately, moving walls, adding rooms, etc – In many cases, families are resettled in different municipalities and governorates from where they lost their previous home – Interruption of the social networks in the case of resettlement

According to the table above, limited advantages of donor-driven approach were mentioned by interviewees. Advantages included that donor-driven approach is considered effective when reconstruction of medium / large buildings for a group of people. Donor-driven is also considered good approach in rehousing programmes that require building of many housing units usually at different location of the original lands.

Also, it is better to use donor-driven approach when reconstruction of houses belongs to special cases like: vulnerable families and people with disability as those people haven't the capacity and ability to manage the reconstruction process. It is logic and understandable to apply donor-driven approach in such cases. Good designs were another advantage of this approach based on selecting professional consultant firms for preparing the project documents.

Many disadvantages were listed by interviewees about donor-driven reconstruction approach. Some of disadvantages are politics-related issues like: delay in reconstruction process, closing of borders, fluctuation of prices and claims. It is Important to understand that the contractor can easily stop working when shortage / fluctuation of prices of materials because of frequent closure of borders which cause delay / interruption of the reconstruction process as well as many claims.

Some disadvantages are time-related issues like: delay in starting the reconstruction because of pre-arrangements steps needed to be finalized. These steps include: detailed assessment at the field level, preparing of tender documents (Bill of Quantities, General and special conditions, technical specifications and drawings), advertisement, evaluation of offers, awarding, signing of contract with the winner company and mobilization period. Also, some implementing agencies need to give No objection on advertisement and awarding which may contribute in delay. So, in ideal cases this process could take 2 – 3 months.

One of the important conclusions of Lyons, M., Schilderman, T., 2010 study is that a lot of time is needed to acquire, plan for and service large plots which ensure results above.

Lack of long term planning is considered as donor-related disadvantage. It is important to recognize that "Failure to plan is planning to fail". For example, many implementing agencies deal only with materials come from legal borders, so if implementing agencies had difficulties in making necessary actions for materials to come in on time, problems will arise in the project.

Also fail in putting people at the center of the reconstruction process is an important issue and consider as donor-related disadvantages. Households need to be involved and consulted in their new house related issues such as: design, location inside the land, colors, material types, etc otherwise, they will change as much as they can after very short time.

Most researches and studies agreed on the negative impact of the non-participation of the owners in the reconstruction and highlighted the dis-advantages of avoiding consultation them during the project phases like: Lyons, M., Schilderman, T., 2010, Barenstein J, 2006 and Karunasena G., Rameezdeen R., 2010.

Table 4-2: Owner-driven approach advantages and disadvantages

Advantages	Disadvantages
– Active role of the owner in the reconstruction process – Reconstruct the house according to the owner own ideas, possibilities and needs – Rapid way for reconstruction – Positive impact on the socio-economic conditions – Participate in the economic recovery through small workshops and micro level suppliers – Very effective in minimizing the psychosocial trauma of the households and family members – Overcome the problems related to the limitation of using legal materials – More functionality for the family – No / Limited effect by the Gaza Strip siege – Strengthening the relationship between the owner and his house / land – Can reconstruct many houses at the same time in different locations – Possibility for the owner to participate in reconstruction either financially or non-financially – Cost effective – No procurement arrangements needed	– Weaknesses of some households in the reconstruction process cycle, concepts, phases, etc – Fluctuation of material and workmanship prices – Encounter difficulties when dealing with vulnerable people as they maybe use some money to cover some essential needs – Lack of skilled workers at the time of huge reconstruction activities – Land ownership problems – Delay in installments – Difficulty to rebuild houses in marginalized areas

From table above, many advantages of owner-driven approach were highlighted by interviewees including:

High cost effective because of:

1. No need for procurement phase
2. No taxes, overhead / indirect costs
3. Owner's participation in the reconstruction (financially and non-financially)
4. Negotiation with suppliers / skilled workers / sub-contractors

Barenstein J, 2006 research stated that owner-driven approach is more cost-effective

Time effective because of:

1. No pre-arrangements procedures (Mainly procurement)
2. Active role of the households
3. Does not fully depend on borders for materials
4. Can reconstruct many houses at the same time

Support local economy because of:

1. Participate in empowering small workshops / micro businesses
2. Encourage skilled workers / sub-contractors to restart working in the field of construction industry
3. Support local industry / products

On the contrary and according to Lyons, M., Schilderman, T., 2010 research, donor-driven approach in building is costly, yet the contribution to the local economy may only be limited.

Improving the social framework because of:

1. Allow households to be the leader of the reconstruction process
2. Participate in empowering the affected families
3. Very effective in minimizing the psychosocial trauma of the households and family members

On other side, there were some disadvantages when using owner-driven approach and can be households-related issue when dealing with some special cases including vulnerable families, people with disability and women headed families. Also, complex legal problems with the land ownership are important issue that needs to be solved before any interventions. According to Lyons, M., Schilderman, T., 2010 study, owner-driven approach focuses on legal owners and thus excludes those who cannot prove ownership, renters and squatters.

Other two issues are out of the control of all stakeholders: fluctuation of prices and lack of skilled workers at the time of huge reconstruction activities. But based on the available information and experience in the field, they rarely affect the reconstruction activities.

4.2.3 Comparison of reconstruction approaches

Comparison between donor and owner-driven approaches was one of the most important discussion with interviewees. All of them were asked to give their opinion of each approach in terms of: Quality and durability, time, cost, accountability and transparency, flexibility to make changes in the future and satisfaction.

Feedback from interviewees were collected and analyzed as follows:

Table 4-3: Comparison of reconstruction approaches

Item	Approach	
	Donor-driven	**Owner-driven**
Quality and durability	– Poor in most cases – Problems in materials – Problems in workmanship	– Very good – High quality materials – Very good construction and finishing
Time	– Long time to complete reconstruction – Long time at the beginning because of procurement procedures – Delay and suspension of works because of border closing, shortage of material, etc	– Time effective – Start reconstruction immediately after having first installment – Smooth process with No / limited influence from border closing, material availability, etc
Cost	– High cost ($350 / m²) – Difficult for owner to participate financially in the reconstruction process – Contractor overhead is added to the total cost (about 20 – 30%) – Frequent claims from contractors	– Cost effective ($260 / m²) – Participation from the owner in the reconstruction process – No overhead added to the overall cost of the reconstruction – No claims during the process
Accountability and transparency	– Good – No / limited participation from the owner	– Very good – Full participation from the owner
Flexibility to make changes in the future	– Difficult to make changes	– Flexible for changes
Satisfaction	– Low	– Very high

Based on analysis above, it is clear that there are many key advantages of owner-driven approach over the donor-driven approach. Also, most researches and studies had reached to similar results like: Ratnayake, R.M.G.D, Rameezdeen, R., 2008, Barenstein J., 2006, Lyons, M., 2009 and Ophiyandri, T., et al., 2010.

Based on analysis above, differences between the two approaches are related to:

Quality and durability

Most of interviewees assure on the high quality of most owner-driven reconstructed houses. Quality of those houses was very good because of:

1. Good project documents and designs by consulting firms
2. High quality materials and high skilled labors
3. Minimum technical specifications were requested by implementing agencies to ensure building back better
4. Sufficient financial assistance
5. Adequate technical assistance by implementing agencies

While the poor quality in donor-driven approach is due to:

1. Cost-based selection of the general contractor rather than Quality and cost based
2. Poor supervision by implementing agencies
3. Using different types of materials when unavailability of proper quantities
4. Unskilled labor and sub-contractors
5. Frequent changes of sub-contractors by the general contractor

Time

Owner-driven approach is more time effective than donor-driven approach mainly because of no preparation (Assessment, land-related issues, procurement) is needed as well as less affected by frequent border closures and shortage of construction materials. More details are in section 4.2.2.

Cost

Owner-driven approach is more cost effective than donor-driven approach mainly because of no overhead and indirect costs, no taxes, no claims, minimum risks as well as participation of the households in the reconstruction process (Financially or non-financially). More details are in section 4.2.2.

Accountability and transparency

To be accountable and transparent, it is important to account for activities, accept responsibility, disclose the results transparently and responsible for money, and all of these requirements can be found much more in owner-driven approach than donor-driven approach.

In owner-driven approach, beneficiaries are carefully selected after nomination by the Ministry of Public Works and Housing, verification at field level by implementing agencies and approval by the programme steering committee.

Solid and clear contracts are signed between the implementing agencies and the beneficiaries including all related information, responsibilities of each party, approved area, approved money, installments details (value and due date), minimum technical specifications and legal documents.

Flexibility to make changes in the future

Houses built within the owner-driven approach are more flexible for future changes than those built using donor-driven approach. This is mainly because of high involvement of the household in the reconstruction phases / process. House design, specifications, location and external works are discussed, implemented and followed up by the owners themselves.

Satisfaction

In owner-driven approach, households show high level of satisfaction regarding all parameters and phases. High level of satisfaction comes from participation in all steps, making own design, building and finishing, getting efficient value of money, giving adequate technical guides rather than engineering supervision and helping in minimizing / eliminating psychosocial trauma.

Results of the Ingirige, B., et al., 2008 study supported the principle of high level abstraction of core principles of housing reconstruction and localizing within the post-disaster context as evidenced by the higher level of satisfaction expressed by the victims of tsunami who were part of the owner-driven strategy.

4.2.4 The best approach

Interviewees strongly encourage and support utilizing the owner-driven approach in the reconstruction of private owned houses based on their current experience in the reconstruction process as well as the remarkable success of the approach in reconstruction of more than 1,500 housing units till now.

The owner-driven approach is strongly recommended in many researches including: Ahmed, I., McEvoy, D., 2010, Miranda, AER S., 2010, Barenstein J., 2006 and Arslan, H, Unlu, A., 2006.

4.2.5 Comments for more improvements

In order to build back better houses, interviewees assured / suggested some points regarding utilizing owner-driven approach in reconstruction includes:

1. Concrete and adequate technical assistance on site
2. Solving land possession problems in proper time before reconstruction
3. Maintain cash flow from the donor not to affect the reconstruction schedule
4. Study proper solutions for marginalized areas that contain huge number of totally demolished units
5. Taken into consideration special cases including: vulnerable families and people with disability
6. Call for extra funds for building back better all damaged houses.

4.3 Questionnaire results

118 questionnaires were filled out of 137 were distributed (Response rate: 86.13%) to people who had their houses reconstructed either through owner-driven or donor-driven approach. 115 questionnaires were analyzed using the Social Package for the Social Sciences (SPSS) as 3 questionnaires were discarded in the analysis.

Results of the analysis are presented below: (Statistical analysis is shown in annex V):

4.3.1 Section I: General information

4.3.1.1 Geographical distribution of the sample

Distribution of the questionnaires over the Gaza Strip Governorates was based on accessibility was as follows:

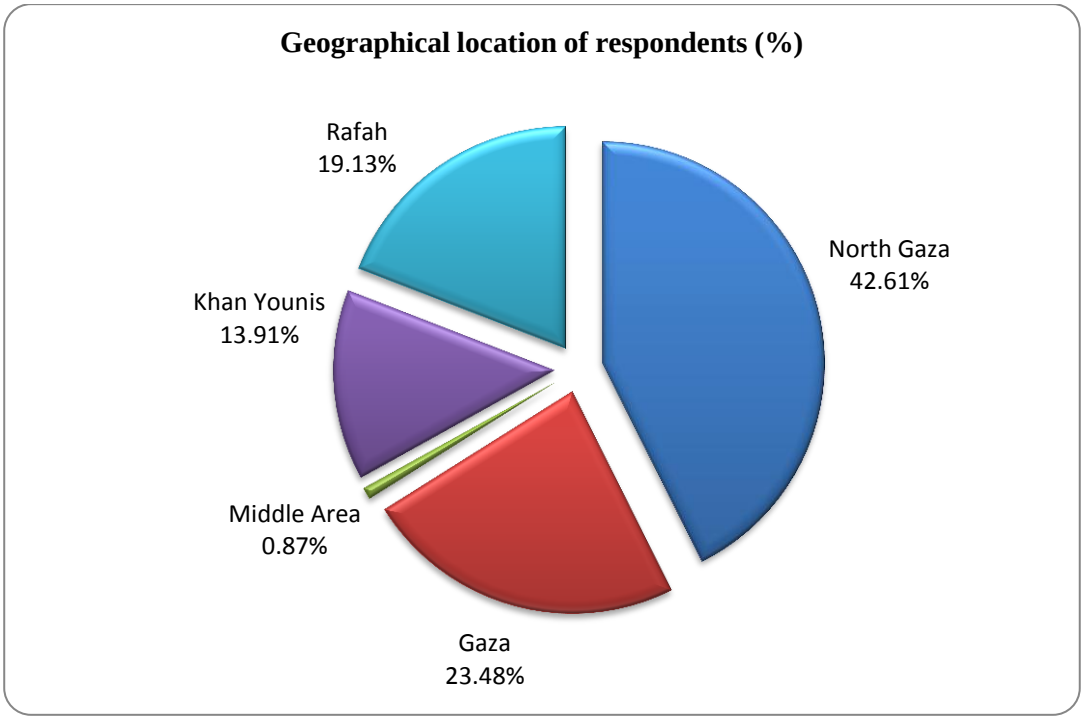


Figure 4-1: Geographical location of respondents

As shown above, more than 65% of questionnaires were filled in North Gaza and Gaza governorates as they include about 70% of the completely demolished housing units (52.48% and 16.72% respectively).

Also, Khan Younis and Rafah governorates include about 20% of the completely demolished housing units (9.81% and 10.21% respectively) while 35% of questionnaires were filled at these areas.

4.3.1.2 Households' educational level

Households' educational level was measured in the survey; results were analyzed and presented as follows:

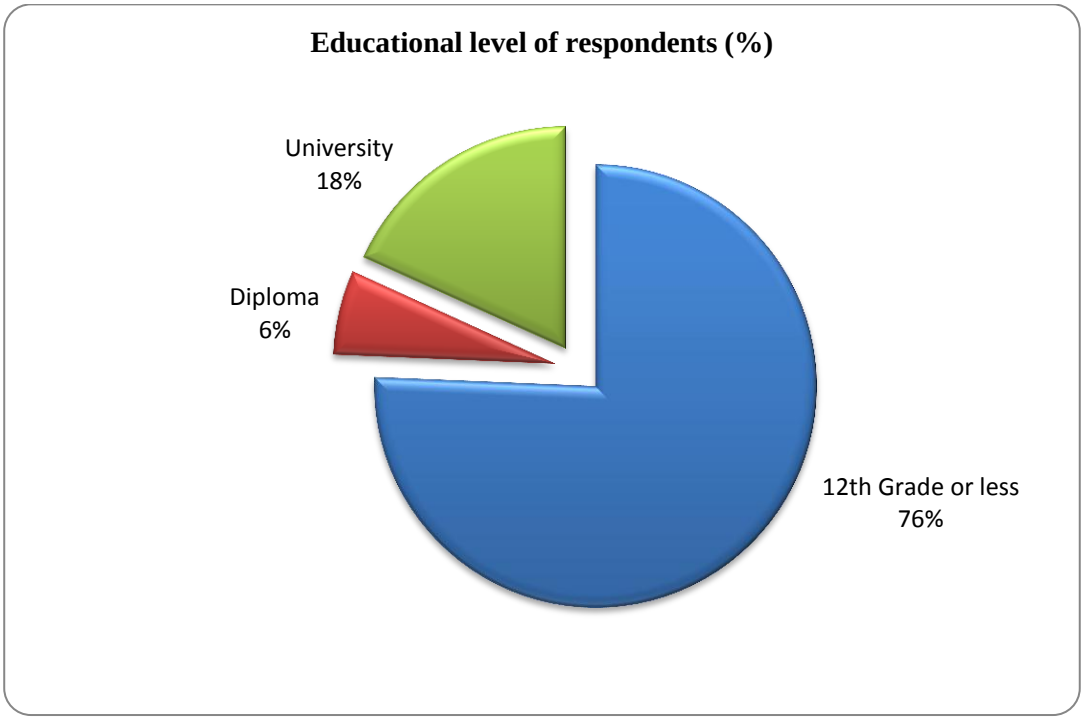


Figure 4-2: Educational level of respondents

As shown above, more than 75% of the households have only completed their 12th grade school education or less (Primary education).

About 25% of households got diploma or university degrees.

It is important indicator and it has to be taken into consideration by the Government and implementing agencies while designing the reconstruction process and agreeing on the reconstruction approach. When using the owner-driven approach in reconstruction, orientation and even training workshops are needed to increase households' knowledge in different aspects such as: legal problems, engineering concepts and procedures, financial basics, etc.

4.3.1.3 No. of family members

Number of family members was collecting in the survey that including all the members who are living at the same housing unit; results were analyzed and presented as follows:

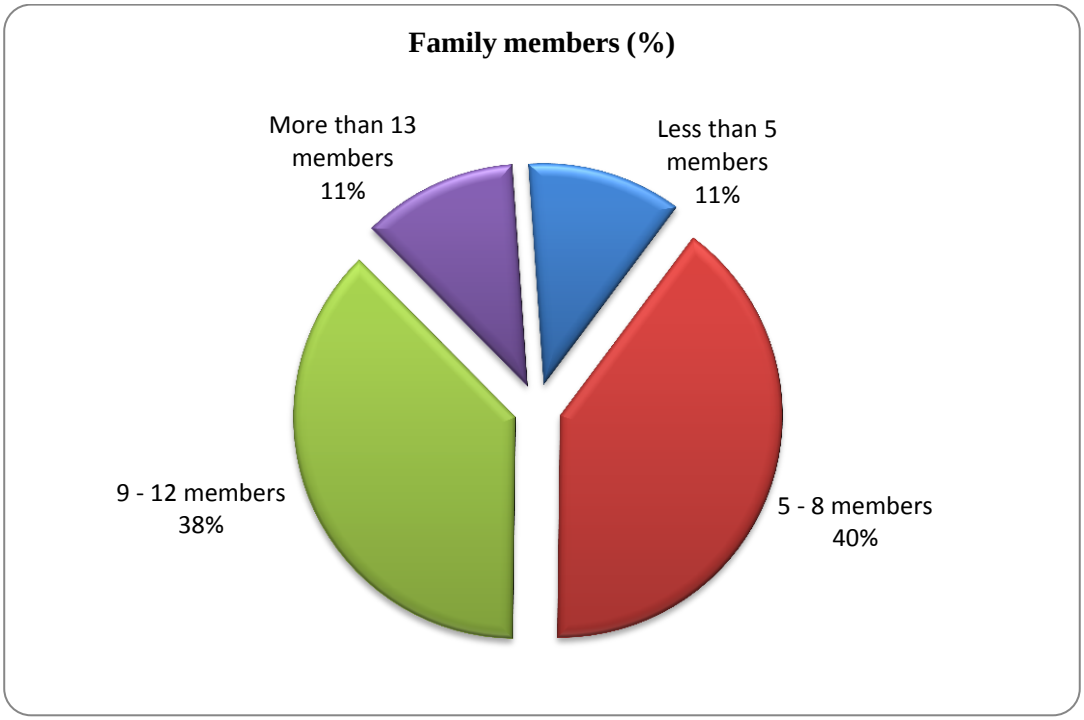


Figure 4-3: Family size

From above chart, more than 75% of the families have members between 5 and 12 which consider high. The Gazan family average size is between 6 – 7 members as per the Palestinian Central Bureau of Statistics.

22% of the respondents have members of either less 5 members or more than 13.

On average, family size is 8.75 members and this is very important to take into consideration when allocating money and approving areas of the new housing units to ensure building back better and not only depends on the damages.

4.3.1.4 Description of the totally demolished housing unit

Description of the totally demolished housing unit was determined though the survey; results were analyzed and presented as follows:

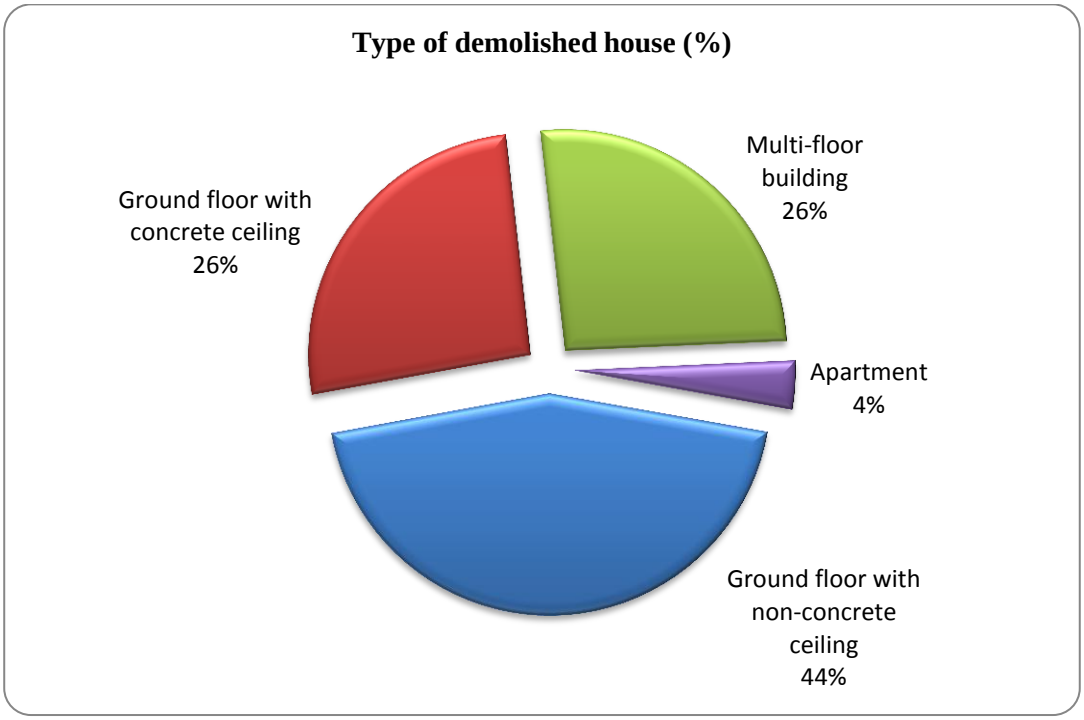


Figure 4-4: Type of demolished housing units

From above chart, it is noticed that more than 95% of the completely demolished housing unit were on privately owned land and they can be classified either: Ground floor with non-concrete ceiling (44%), Ground floor with concrete ceiling (26%) or Multi-floor building (26%).

This indicator is very important and agrees with the Gaza Strip context and culture that people tends to live in independent housing units rather than in buildings. This result encourages the Government / implementing agencies to concentrate more on using owner-driven approach in reconstruction rather than other approaches.

4.3.1.5 Total area of demolished housing unit

Original area of the housing units that were totally demolished was collecting; results were analyzed and presented as follows:

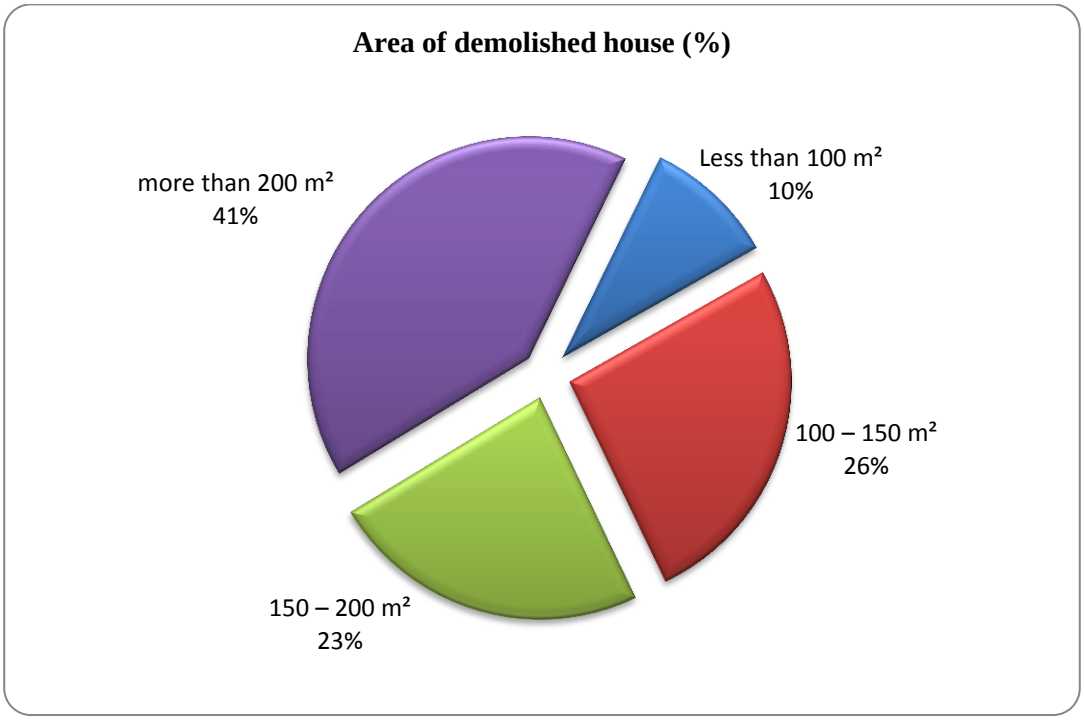
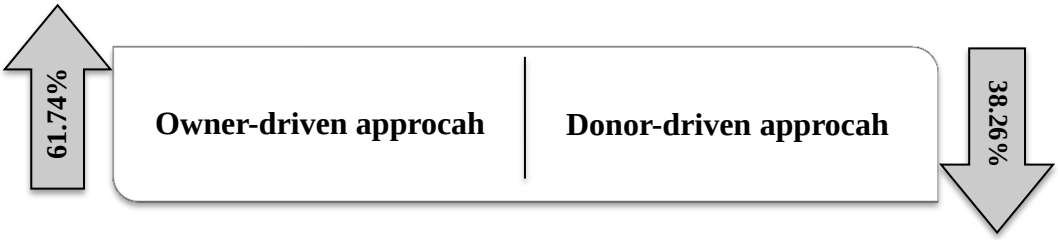


Figure 4-5: Area of demolished housing units

From above chart, original areas of the demolished house were varies among the sample. This data have to be considered when nominating families for reconstruction programmes.

4.3.1.6 Reconstruction approach used

Both reconstruction approaches were used in the reconstruction of Gaza Strip totally demolished houses. Based on the results and analysis of the survey, 44 cases out of 115 (38.26%) were got new housing unit through donor-driven programme while 71 cases (61.74%) got their new units within owner-driven programme.



4.3.1.7 Implementing agencies

Funds were used in reconstruction of totally demolished houses were classified according to the type of agencies; results were analyzed and presented as follows:

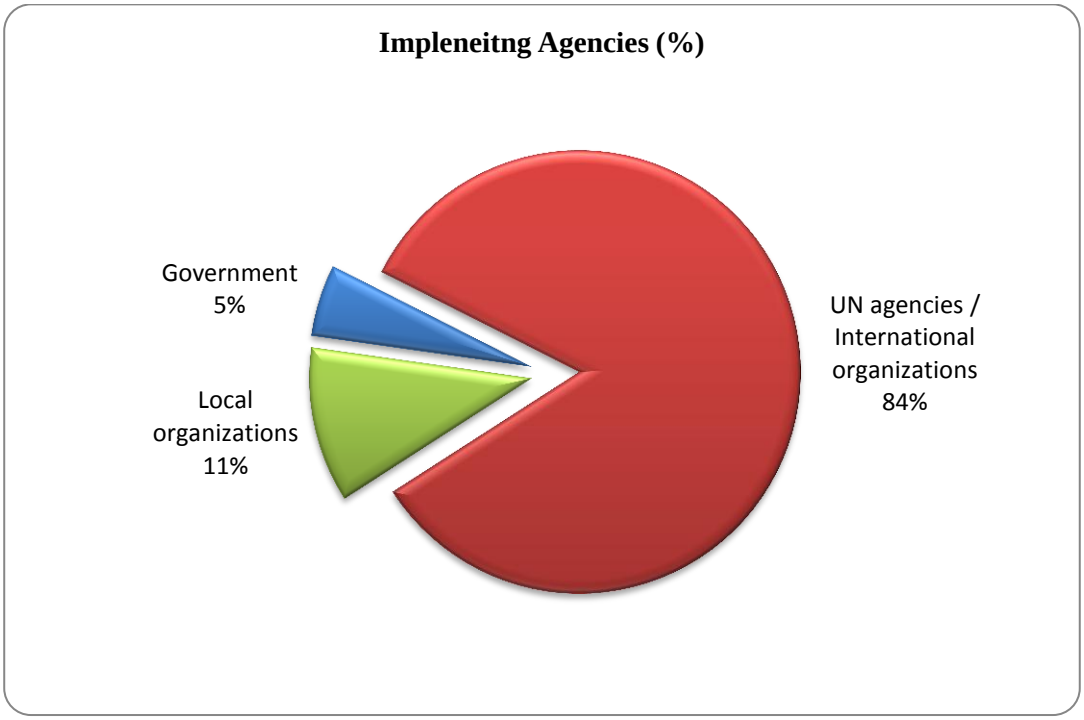


Figure 4-6: Implementing agencies of reconstruction process

In general, most funds (83%) allocated for reconstruction of the housing units in the sample was through UN agencies or International organizations. However, almost all reconstruction interventions were completed in close coordination with / through the Government / Ministry of Public Works and Housing.

According to recent reports, 17.48% of completely reconstructed houses were completed by the Government, 28.74% by UN agencies: UNRWA, UNDP and UN-Habitat, 0.76% by local CBOs and 53.02% by the International organizations.

The difference between the sample and recent report is due to nature of sample.

4.3.1.8 Reconstruction process launch

Time that reconstruction was started is identified; results were analyzed and presented as follows:

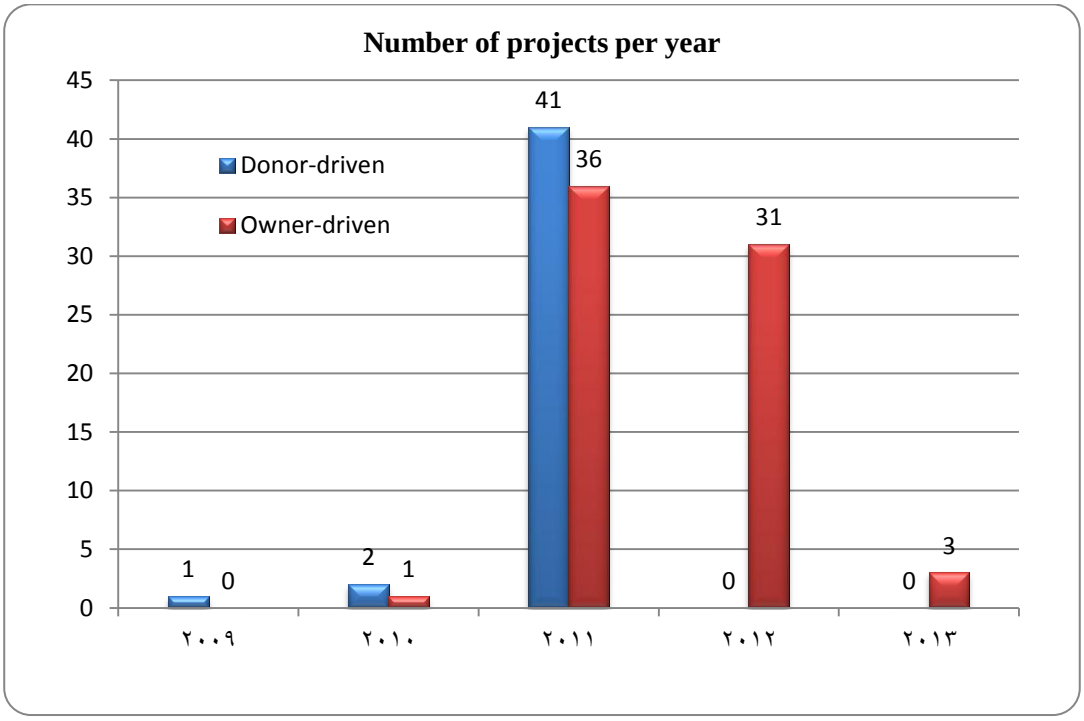


Figure 4-7: Number of housing units - Reconstruction process launch

Figure above highlights many important issues:

- Reconstruction of Gaza Strip totally demolished houses started only in 2011 - two years after the war / destruction. This is mainly because of lack in construction materials as a result of the siege.

- Almost all housing units rebuilt using donor-driven approach were completed in 2011. After that donor-driven approach was rarely used.

- Using of owner-driven approach in reconstruction started in 2011 till now. The idea was first used in the fund from the Islamic Development Bank when starting the Gulf Cooperation Council's fund for the reconstruction of Gaza Strip.

4.3.1.9 Reconstruction process duration

Results about projects' duration were analyzed and presented as follows:

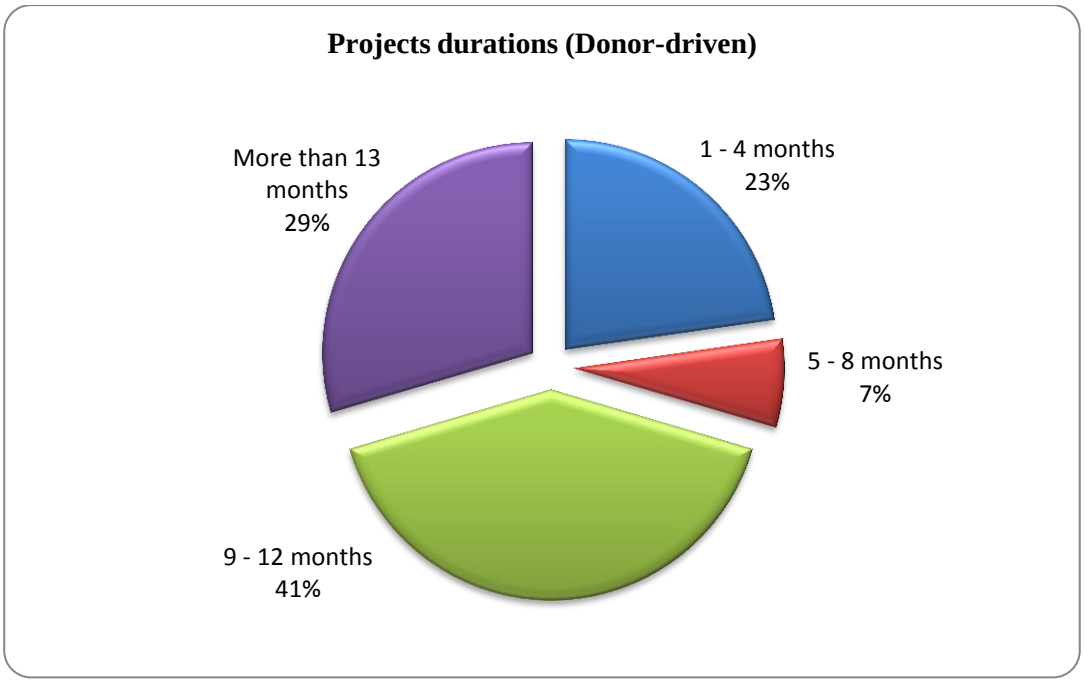


Figure 4-8: Reconstruction duration – Donor-driven approach

From above chart, the mean value for a donor-driven housing unit is 11.45 months which considered long period for a simple unit.

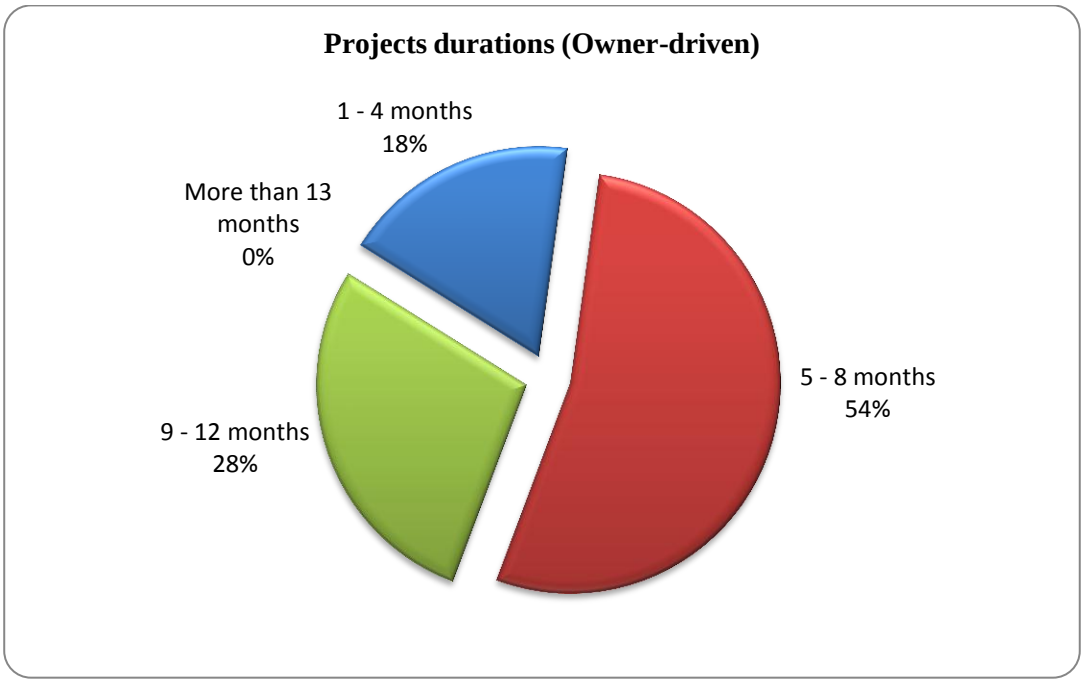


Figure 4-9: Reconstruction duration – Owner-driven approach

However, it is 7.11 months for owner-driven unit that considered reasonable.

4.3.2 Section II: Factors affecting the reconstruction process

4.3.2.1 Quality and durability

The 18 factors related to quality and durability were analyzed separately for both reconstruction approaches, compared and represented as follows:

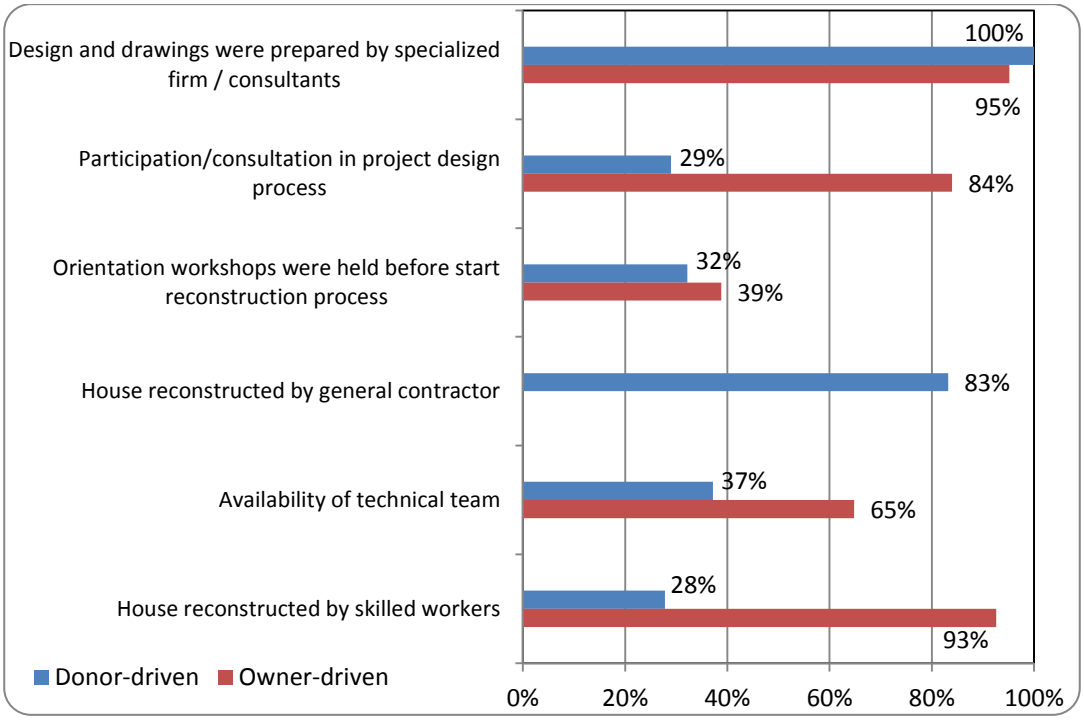


Figure 4-10: Percent of responses - Quality & durability parameters (1-6)

From figure above, it can be concluded that:

- In both approaches, respondents strongly agree that designs and drawings were prepared by very good consulting firms. In donor-driven approach, implementing organizations tend to appoint good engineering firms for preparing project documents and sometimes for supervision purposes. Also, in owner-driven approach, people need the best design for their housing units as well as it is considered as pre-condition for final approval on the intervention.
- In owner-driven approach, respondents strongly agree on their participation / consultation during the project phases as they are the leaders of the process, while respondents in donor-driven approach strongly disagree on that point as there was no / limited participation in the reconstruction process.

- In both approaches, respondents strongly disagree / disagree regarding conducting of orientation workshops before starting the reconstruction process. Some organizations conduct a pre-meeting with beneficiaries in donor-driven or owner-driven approach but mainly for signing the contract rather than giving brief about the project, the approach, responsibilities, etc.
- Respondents in donor-driven approach agree that a general contractor was contracted by the implementing organizations in order to reconstruct many housing units. In general, beneficiaries in owner-driven approach tend to have sub-contractors rather than a general contractor.
- In donor-driven approach, respondents believe that the general contractor didn't have the proper technical team on site.
- In owner-driven approach, respondents strongly agree / believe that they succeeded to have good skilled workers in reconstructing their housing units. It is clear that beneficiaries were carefully selected the skilled workers. However, beneficiaries in donor-driven approach strongly disagree that the general contractor provided suitable skilled workers.

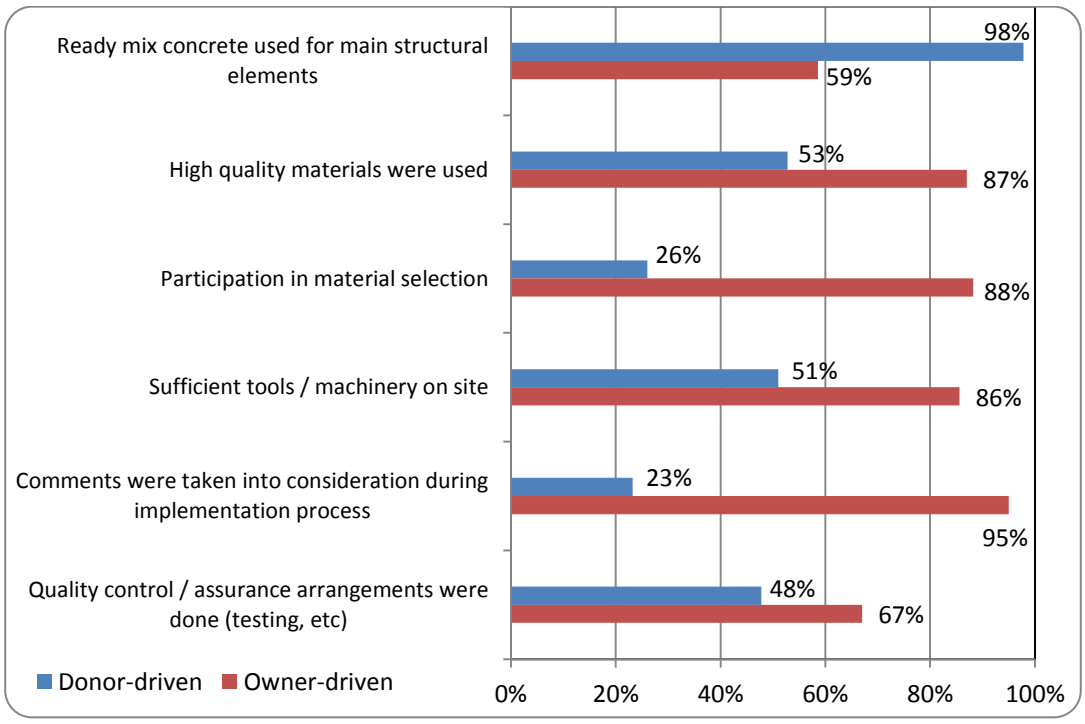


Figure 4-11: Percent of responses - Quality & durability parameters (7-12)

From figure above, it can be concluded that:

- In donor-driven approach, respondents strongly agree that ready mixed concrete was used for main structural elements. In owner-driven approach, beneficiaries used on-site concrete mix which considered good and less cost.
- High quality material was used in owner-driven approach because of carefully selection by the beneficiaries, while average quality was used in donor-driven.
- Beneficiaries in owner-driven approach select the material by themselves that why they strongly agree on this point but on the other side, beneficiaries in donor-driven didn't participate in selection.
- Sufficient machinery / tools were used in the owner-driven approach while average tools in the donor-driven were used.
- Beneficiaries' participation in the owner-driven approach was high and thus their comments were taken into consideration. However, they were marginalized in the donor-driven approach.
- Average response was noticed about the quality control / assurance in owner driven because of lack of experience. However, beneficiaries of donor-driven disagree on that mainly because of weak supervision on-site.

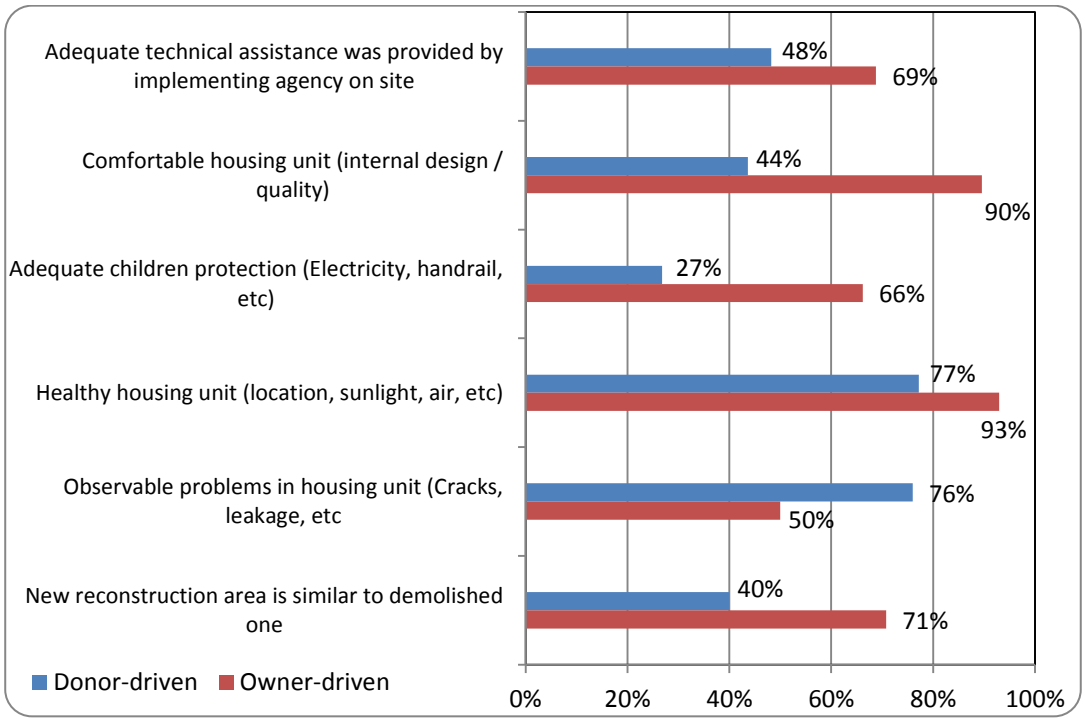


Figure 4-12: Percent of responses - Quality & durability parameters (13-18)

From figure above, it can be concluded that:

- In owner-driven approach, respondents agree that they receive good technical assistance during the reconstruction while in donor-driven do not.
- After completing the reconstruction, beneficiaries in owner-driven approach strongly agree about the final housing unit regarding internal design and quality. However, beneficiaries in donor-driven approach disagree on these parameters and feel with discomfort of living in.
- Average response by beneficiaries in owner-driven approach regarding the children protection because of lack in experience and utilizing the money in other activities. However, beneficiaries in donor-driven approach disagree on that.
- In both approaches, beneficiaries strongly agree / agree on having healthy units
- Beneficiaries in donor-driven approach notice many problems in the unit after completion while in owner-driven approach minimal problems were observed.
- In owner-driven approach, new areas tend to be close to the demolished one while in donor-driven do not.

Compare to other researches and studies

Many studies agree with results above like: Barenstein J, 2006, Ratnayake, R.M.G.D, Rameezdeen, R., 2008, Karunasena G., Rameezdeen R., 2010, Lyons, M., Schilderman, T., 2010 and Chang, Y., et al., 2010.

Also, some studies disagree with that like: Ingirige, B., et al., 2008.

4.3.2.2 Time

The 6 factors related to time were analyzed, compared and represented as follows:

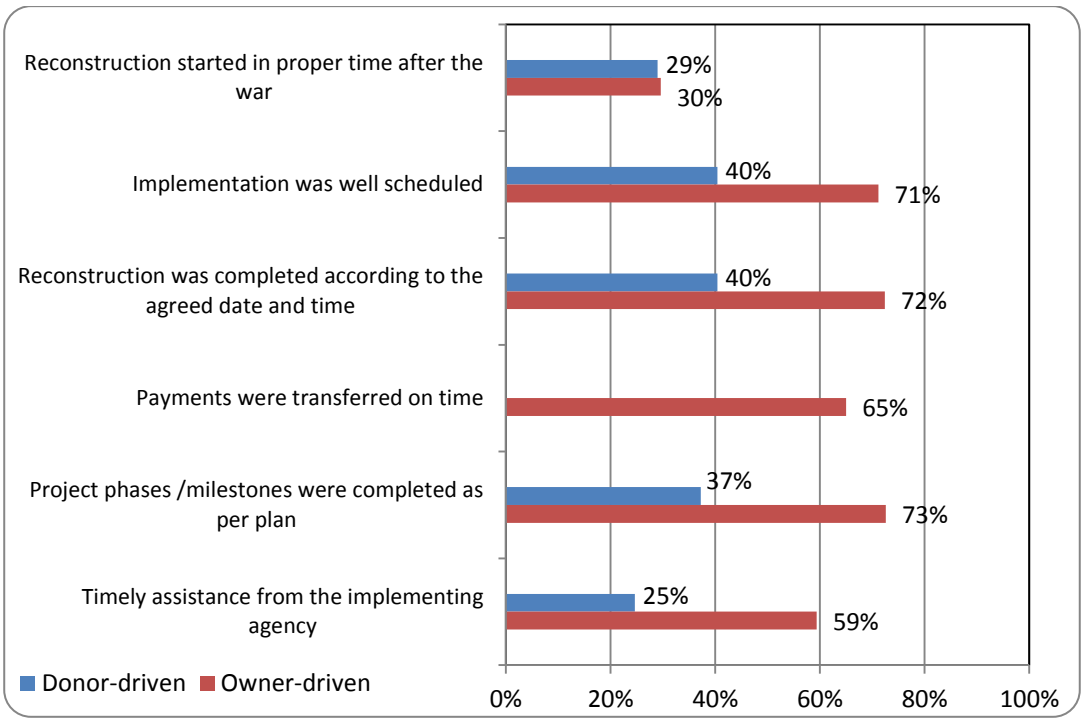


Figure 4-13: Percent of responses - Time parameters (1-6)

From figure above, it can be concluded that:

- Respondents from both approaches strongly disagree on the time when the reconstruction process started. In general, reconstruction of demolished houses started two years after the Gaza war.
- Respondents in owner-driven approach agree on well project scheduling, completing activities / project milestones on time because of good follow up and monitoring from both the owner and the implementing organizations. However, respondents in donor-driven approach disagree on that because of weak supervision and negative effect on contractors when border closed.
- Average response on the timely installments was resulted in owner-driven approach and this is mainly because delay in transfers by the donor to the implementing agencies that affected the transfers to the beneficiaries.
- Average response was resulted on the timely assistance from the implementing organizations when requested in owner-driven approach although adequate technical assistance was noticed during the reconstruction period. On the other

side, most beneficiaries in donor-driven approach didn't get the on-time response from the implementing agencies.

Compare to other researches and studies

Many studies agree with results above like: Lyons, M., Schilderman, T., 2010, Ophiyandri, T., et al., 2010, Dercon, B., Kusumawijaya, M., 2007, Miranda, AER S., 2010, Hidellage, V. and Usoof, A., 2010 and Ratnayake, R.M.G.D, Rameezdeen, R., 2008.

Also, some studies disagree with that like: Barenstein J, 2006.

4.3.2.3 Cost

The 7 factors related to cost were analyzed separately for both reconstruction approaches, compared and represented as follows:

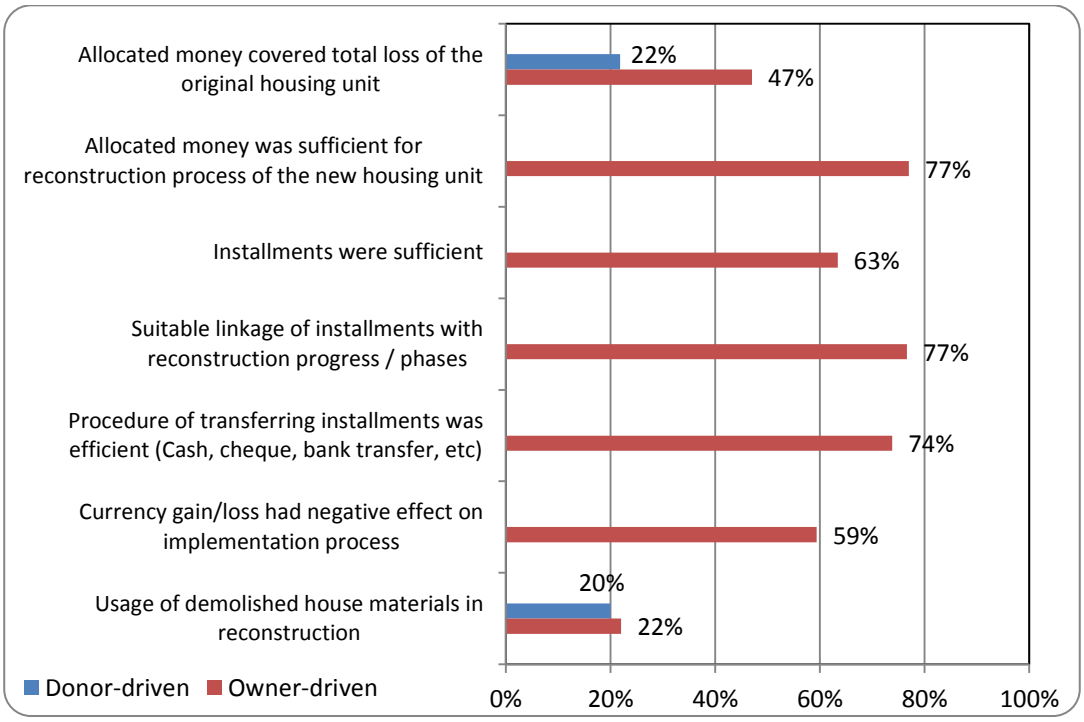


Figure 4-14: Percent of responses - Cost parameters (1-7)

From figure above, it can be concluded that:

- In both approaches, most respondents complained that the money allocated for reconstruction was less than the overall damages of the family at the time of the destruction. This issue maybe not fully true as people usually asks for much

money or can be true because in this phase they got partial allocation and will be completed in the future.

- In owner-driven approach, respondents agree that money allocated for reconstruction of the new housing unit was sufficient to build what had agreed. The value of allocation was carefully discussed among implementing agencies and agreed to pay $260 per m² for the ground floor and $180 per m² which considered sufficient. Almost all beneficiaries in donor-driven approach don't have idea about the reconstruction cost and even contracts with the implementing organizations didn't mention that cost.
- Average response was noticed on the installments for owner-driven beneficiaries. However, implementing organizations agreed on paying the money on four sufficient installments:
    - 30%: advance payment
    - 40%: After completing foundations, ground beams and floor
    - 20%: After completing columns, floor, walls, plastering and tiles works
    - 10%: After completing the housing unit
- In owner-driven approach, respondents agree that installments were effectively linked with the activities on-site as well as method of payments. Implementing organizations mainly used bank cheques or accounts for paying the money that considered efficient methods.
- All respondents from both approaches don't agree on usage of the demolished materials of the house in rebuilding the new house because of removing all the debris since time age or being afraid of using these materials.

Compare to other researches and studies

Many studies agree with results above like: Aysan, Y., et al., 2006 and Lyons, M., Schilderman, T., 2010.

4.3.2.4 Accountability and transparency

The 10 factors related to accountability and transparency were analyzed separately for both reconstruction approaches, compared and represented as follows:

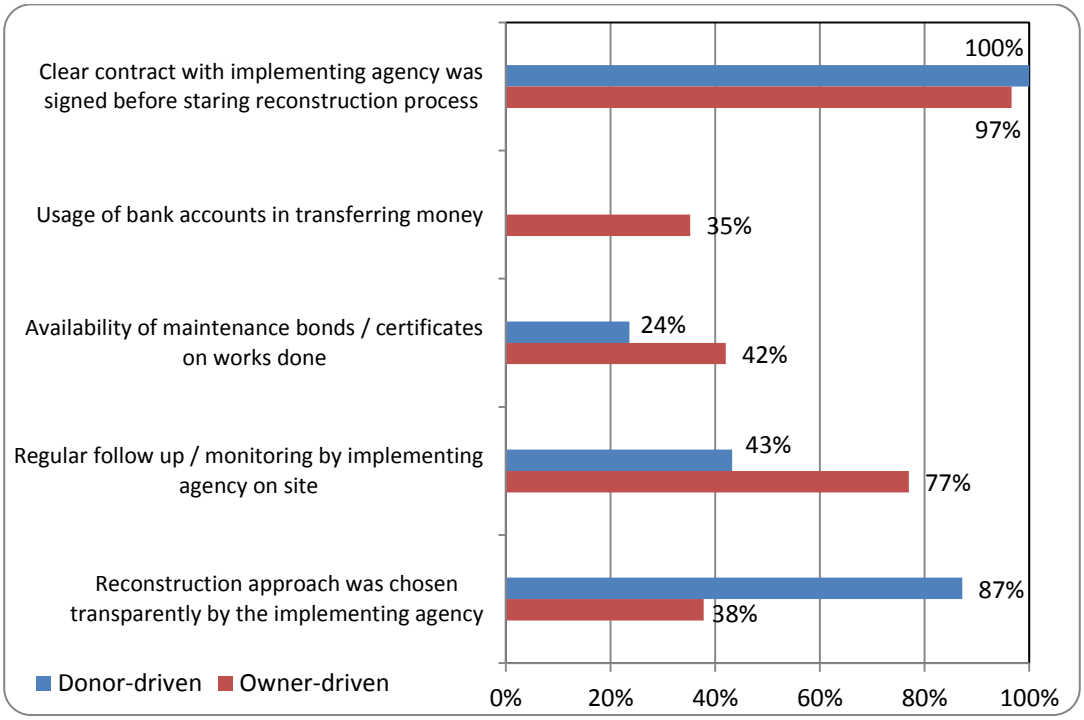


Figure 4-15: Percent of responses - Accountability & transparency parameters (1-5)

From figure above, it can be concluded that:

- Respondents from both approached strongly agree that they sign contracts with the implementing organizations before reconstruction had been started. In owner-driven approach, contracts were very clear and including necessary information, responsibilities for each party, deadlines, value, minimum technical specifications, drawings and installments' schedule. However, in donor-driven approach, contracts were simple with brief information and commitments from the beneficiaries not to intervene in the reconstruction process.
- Most respondents in owner-driven approach stated that installments were paid by other method than bank accounts. Implementing organizations usually paid installments according to its internal policies and procedures. Bank accounts consider more accountable and transparent method with No / minimum influences by external parties.

- Respondents in both approaches don't have ideas about the maintenance bonds on the works given by the contractors / sub-contractors. In donor-driven approach, there should be such at least 12 months maintenance bonds with the implementing organizations that used to fix problems.
- Respondents in owner-driven approach agree on the regular follow up and monitoring visits by the implementing organizations to the site while respondents in donor-driven approach do not.
- Respondents in donor-driven approach strongly agree that the reconstruction approach was chosen by implementing agencies without participation while the respondents in owner-driven approach participated effectively in that.

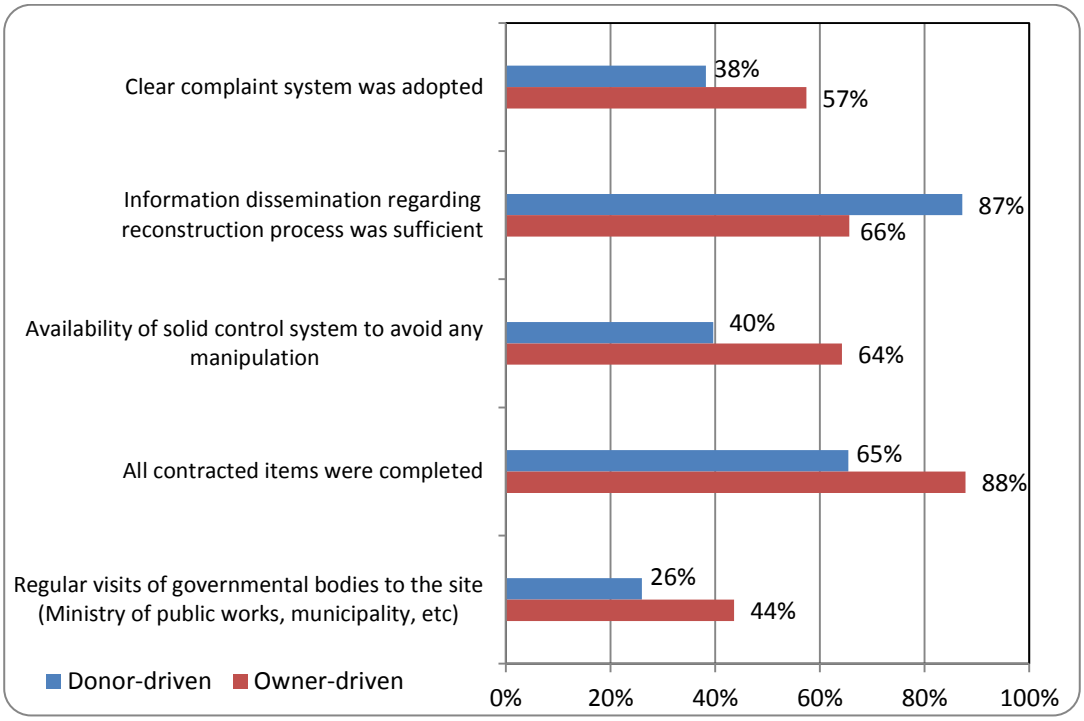


Figure 4-16: Percent of responses - Accountability & transparency parameters (6-10)

From figure above, it can be concluded that:

- No clear complaint system was recognized by respondents in both approaches. In owner-driven approach, beneficiaries used to complain directly to the field supervisor appointed by the implementing organizations.
- Respondents in both approaches agree on the way that information regarding reconstruction was disseminated. It was in all media tools.

- Respondents of owner-driven approach believe that implementing organizations made average efforts to have transparent and accountable system with their policies and procedures. However, donor-driven approach respondents feel that organizations didn't make what it should be to prevent manipulation.
- Beneficiaries in owner-driven approach strongly agree that all agreed components / items were completed successfully. The success in that is mainly due to adequate technical assistance and sufficient financial allocation. However, beneficiaries in donor-driven approach moderately agree on that.
- Both respondents agree on the absence of the governmental bodies during the reconstruction process. Effective role of the municipality is needed in providing basic needs for the new unit (water connection, wastewater outlet, roads, etc.)

Compare to other researches and studies

Many studies agree with results above like: Hidellage, V. and Usoof, A., 2010.

4.3.2.5 Flexibility to make changes in the future

The 8 factors related to flexibility to make changes were analyzed separately for both reconstruction approaches, compared and represented as follows:

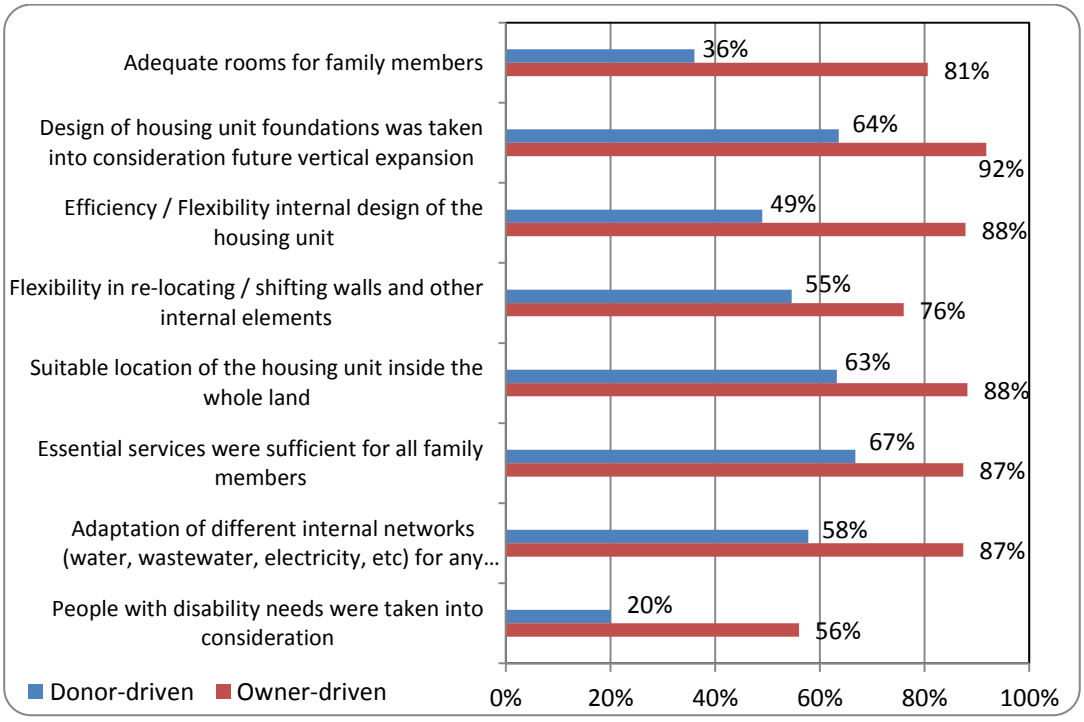


Figure 4-17: Percent of responses - Flexibility to make changes parameters (1-8)

From figure above, it can be concluded that:

- Owner-driven approach provides high flexibility to make changes in the future, because high level of involvement from owners in the reconstruction process. It is clear that respondents strongly agree / agree on all the related factors.
- On the other hand, donor-driven approach provides no / limited possibility to make changes as no involvement from owners in the process.

Compare to other researches and studies

Many studies agree with results like: Ratnayake, R.M.G.D, Rameezdeen, R., 2008.

4.3.2.6 Satisfaction

The 11 factors related to satisfaction were analyzed separately for both reconstruction approaches, compared and represented as follows:

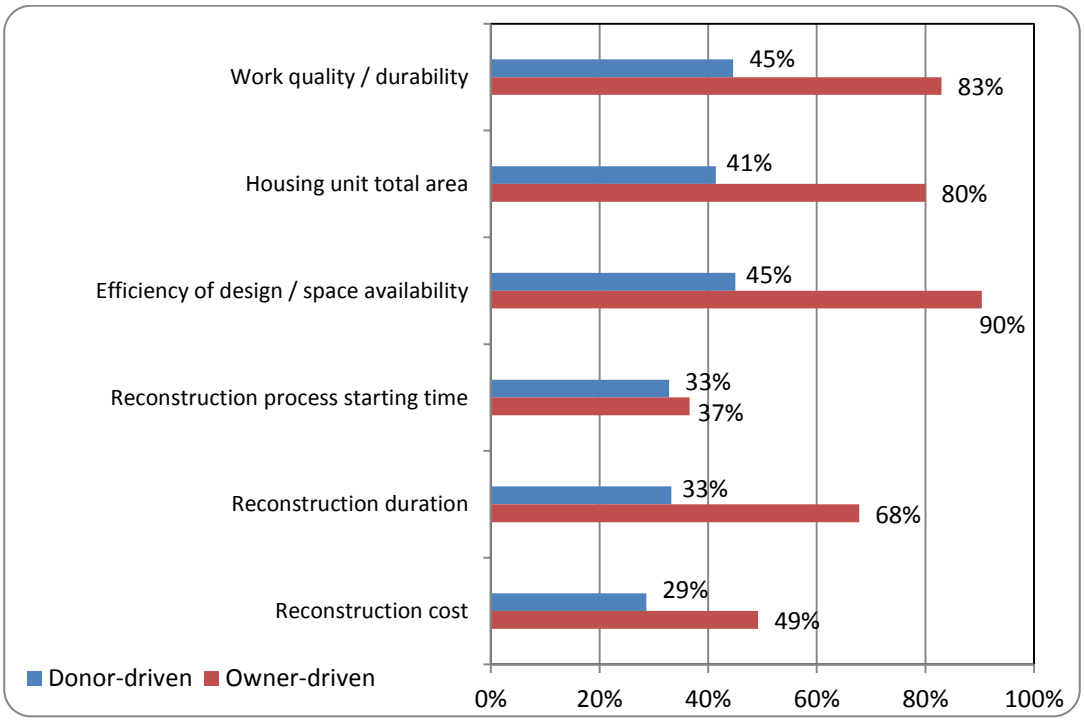


Figure 4-18: Percent of responses - Satisfaction parameters (1-6)

From figure above, it can be concluded that:

- In owner-driven approach, respondents are satisfied with the quality and durability of work. Many causes stand behind this issue including: good technical assistance, sufficient financial assistance, skilled workers & excellent

material used. However, respondents of donor-driven approach are unsatisfied with that. This mainly due to bad contractors, material and workmanship.

- Respondents in owner-driven approach are satisfied with the housing unit area approved by the steering committee of the reconstruction programmes while donor-driven approach respondents are unsatisfied.
- Respondents in owner-driven programme are very satisfied with the internal design as they participated effectively in the design consultation while donor-driven approach respondents are unsatisfied.
- Respondents in both approaches are very unsatisfied / unsatisfied about the reconstruction launch time as it was so late.
- Average satisfaction is notices in owner-driven programme regarding rebuilding duration as implementing agencies agree with beneficiaries on 8 months but they need less than that. However, respondents in donor-driven approach are very unsatisfied about the duration of reconstruction as it was so long.
- Respondents in both approaches are very unsatisfied / unsatisfied about the reconstruction cost as they consider it not sufficient.

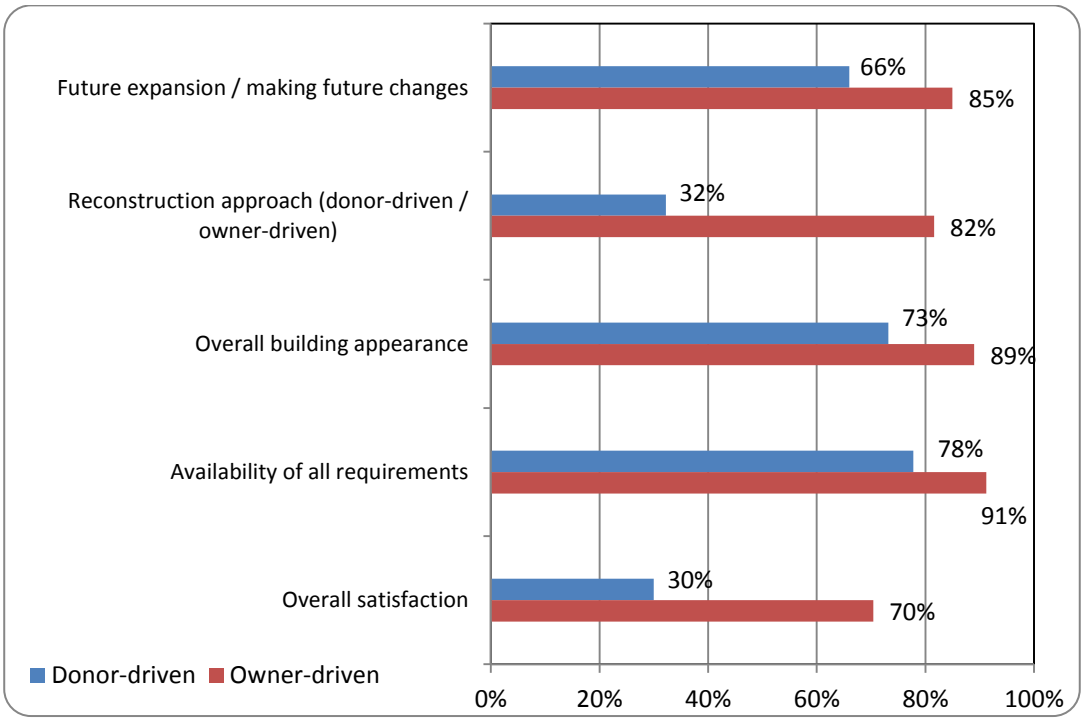


Figure 4-19: Percent of responses - Satisfaction parameters (7-11)

From figure above, it can be concluded that:

- As a result of poor / high beneficiaries' participation in the reconstruction process, average satisfaction is notices in donor-driven programme regarding future expansion and flexibility to make changes. However, Respondents in owner-driven approach are very satisfied with that.
- Respondents in owner-driven approach are satisfied with the reconstruction approach while donor-driven approach respondents are very unsatisfied.
- Respondents in both approaches are very satisfied / satisfied about the overall building appearance and availability of all requirements.
- Beneficiaries in owner-driven approach are satisfied with overall reconstruction process while donor-driven approach respondents are very unsatisfied

Compare to other researches and studies

Many studies agree with results above like: Lyons, M., Schilderman, T., 2010, Van Leersum, A., Arora, S., 2011, Marais, L., et al., 2003, Barenstein J, 2006 and Hidellage, V. and Usoof, A., 2010.

Some studies disagree with that like: Barenstein J, 2006

4.3.2.7 All parameters

The 6 main factors (Quality & durability, time, cost, accountability & transparency, flexibility to make changes and satisfaction) were analyzed separately for both reconstruction approaches, compared and represented as follows:

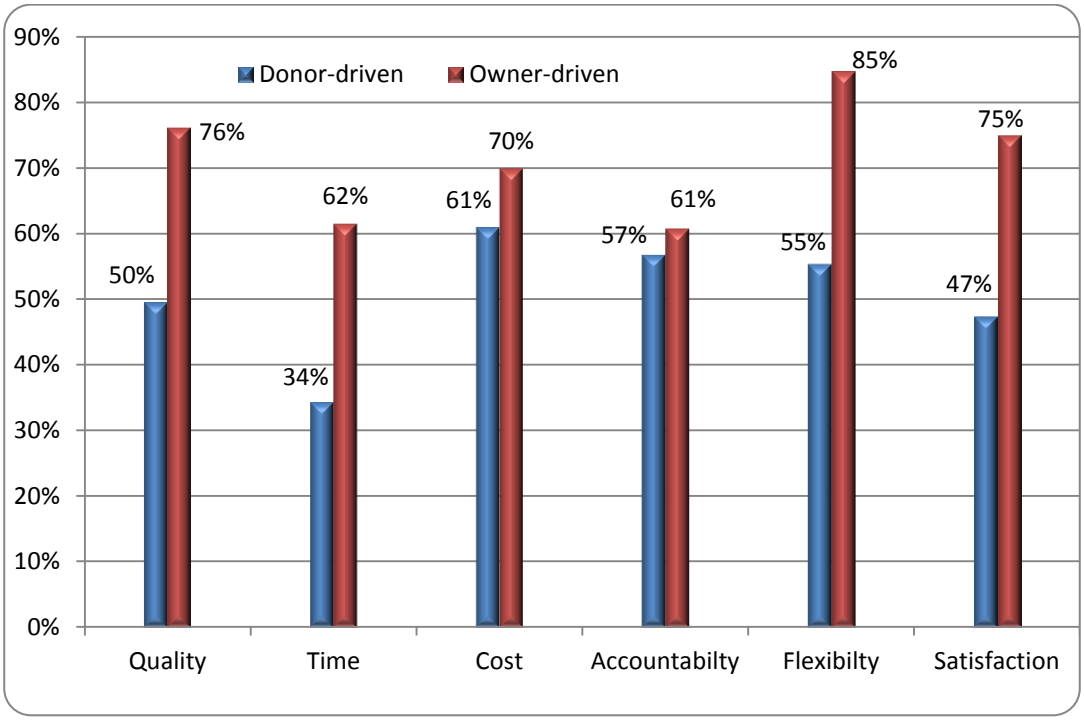


Figure 4-20: Percent of responses - All parameters – Donor-driven vs. Owner-driven

As a summary and from figure above, it can be concluded that:

- Overall responses obtained for owner-driven approach shows a higher satisfaction score compared to donor-driven approach in all factors: quality & durability, time, cost, accountability & transparency, flexibility to make changes in the future and overall satisfaction.

- Significant difference is noticed in four factors out of six: Quality & durability, time, flexibility to make changes in the future and overall satisfaction.

- Nominal difference is noticed in two factors out of six: Cost and accountability& transparency.

4.3.3 Section III: Other questions

4.3.3.1 Differences between the old and the new housing unit

Results re differences between old and new houses were analyzed as follows:

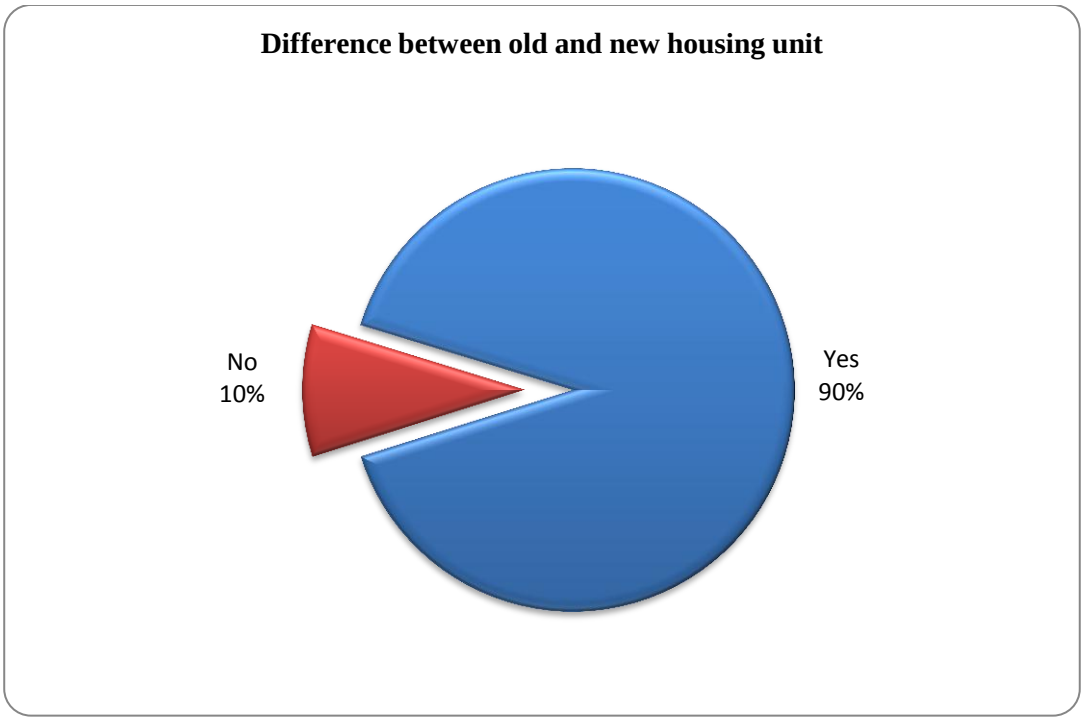


Figure 4-21: Differences between the old and the new housing unit

More than 90% of the households stated that new unit differs than old one. In owner-driven approach, some of the differences were negative but the majority was positive, while most of differences in donor-driven approach were negative.

Main positive differences mentioned by households in Owner-driven approach

- Very good aesthetics and effective internal design
- More internal space, increase in number of rooms, better basic services
- Concrete ceiling instead of non-concrete one

Main negative differences mentioned by households in Donor-driven approach

- Insufficient internal design, less space of rooms and basic services
- No internal or external stairs, poor ventilation, low privacy
- limited possibility to make changes in the future
- Far from the original residence of the family

4.3.3.2 Participation in the reconstruction process

Level of participation (either financially or non-financially) was measured through the survey; results were analyzed and presented as follows:

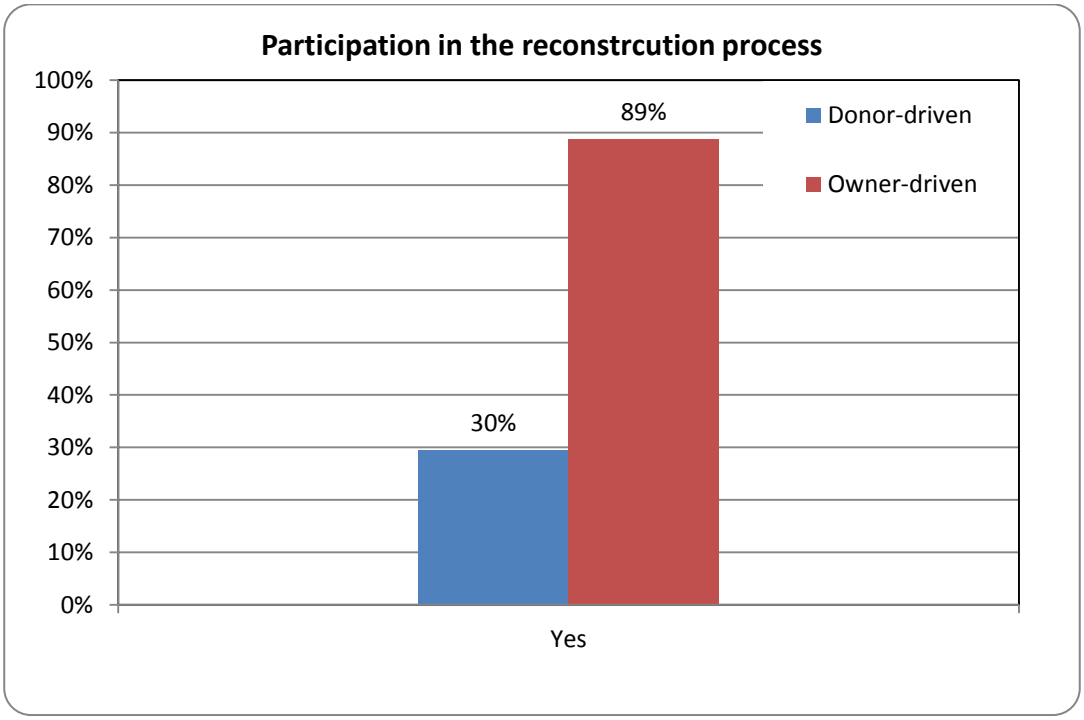


Figure 4-22: Participation in the reconstruction process

In owner-driven approach, 63 households (88.73%) participated in the rehousing process either financially (53 households) and non-financially (10 households).

Participation in the reconstruction ranges from $5,000 to $60,000.

This reflects high level of commitments towards the new housing unit. Households believe that they are participated in their forever home.

On the other side, only 13 households (29.55%) participated financially in the reconstruction process under donor-driven approach. This is mainly because of restrictions by implementing agencies or un-satisfaction of the quality of construction.

Compare to other researches and studies

Many studies agree with the results like: Hidellage, V. and Usoof, A., 2010 and Miranda, AER S., 2010.

4.3.3.3 Future allocation, best approach

Results re best reconstruction approach were analyzed as follows:

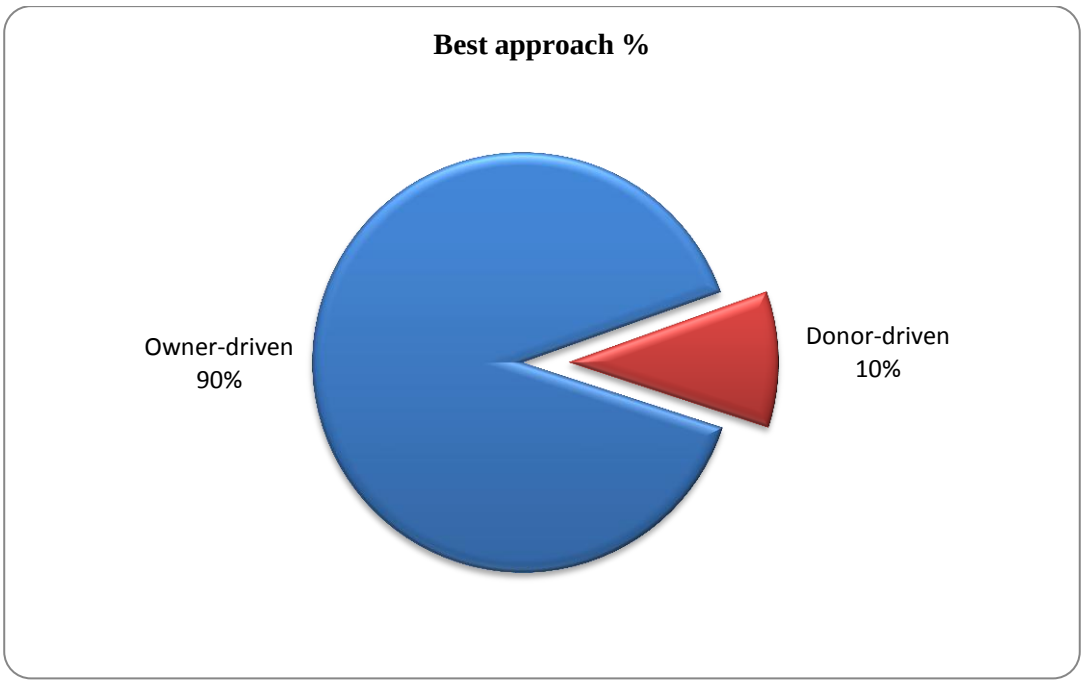


Figure 4-23: Best approach, Overall perception

From figure 4-23 above, about 90% of the total respondents preferred to get more allocations through owner-driven mechanism rather than donor-driven one.

In more details and as per table 4-4 below, about 90% of households having their houses reconstructed using donor-driven approach prefer to get money to complete the reconstruction by themselves (Owner-driven) in case of extra allocation.

Also, about 88% of households who reconstructed their houses by themselves (Owner-driven) prefer to complete the reconstruction in the same way in case of extra allocation.

Table 4-4: The best approach by respondents

The best	Reconstruction approaches			
	Donor-driven		Owner-driven	
	No.	%	No.	%
Owner-driven	40	90.91	63	88.73
Donor-driven	4	9.09	8	11.27

4.4 Field observations

Many observations on reconstructed houses were taken through field visits to selected reconstructed houses. Observations were taken carefully by field surveyors whom were oriented about the ideas and concepts. Important issues are highlighted as follows:

4.4.1 Observations on donor-driven reconstructed houses

- Poor quality of material used and workmanship mainly in: concrete, plumbing, electrical and painting works. Some cases replaced the internal wastewater network as it was not functioning well after 3 months only; also many cases replaced the water taps. Most cases repainted the housing unit again even after one month from receiving it.

- At least 3 complaints regarding the quality of reconstruction were sent to the implementing agencies with no actions even in the maintenance period of the works (usually 12 months from completion).

- Housing units didn't take into consideration the increase of family members.

- Limited involvement of the households in the overall process was noticed; as a result many units were sold after occupation for couple of months. Also, some of them made remarkable changes in the unit.

- Weak consideration of special cases (elderly, disabled, etc) was taken in the reconstruction process. Some units were built vertically with rooms in the first floor which was difficult for an elder person to go upstairs every day. Also, ground floor units were built without stairs to the roof.

- Poor ventilation in many housing units because they were built with no proper distances between each other.

- Difficult financial participation in the reconstruction to expand the area, change types of material used, etc

- Neglecting of privacy considerations in reconstruction that include: no proper distances between units and low level external boundaries.

- No / low level of satisfaction was noticed within the family members.

Below photos explaining points above:

Poor quality – Leakage

Khan Younis city - April 2013

Poor quality – Cracks

Sammouni area / Gaza city - April 2013

Privacy – external boundaries

Khan Younis city - April 2013

Privacy – no proper distances

Khan Younis city - April 2013

No involvement – reconstruction again

Khan Younis city - April 2013

No involvement – increase capacity

Rafah city - April 2013

4.4.2 Observations on owner-driven reconstructed houses

- Very good quality housing units were reconstructed by at least 95% of households who were so careful about having sustainable house. So, very good quality material was used and high skilled labors were selected.

- In few cases (3 cases) and as a result of poor technical assistance and using unskilled labors, poor quality was noticed.

- 90% of households participated financially in the reconstruction of his own house and this was obvious in expansion of the area, change of material types, etc

- About 50% households complained about the currency exchange loss, as implementing agencies used to pay in US$ and the households faced problems to withdraw the money from Banks with the same currency.

- 3 cases made expansion to the housing unit from the beginning and after few months they couldn't continue because of financial difficulties.

- Fluctuation of prices of material and labor was not taken into consideration during the implementation.

- More than 90% of households were highly satisfied of the reconstruction.

Below photos explaining points above:

Very good design and quality
North Gaza – April 2013

Impressive finishing
Gaza city – April 2013

Problems because of poor technical assistance
North Gaza – April 2013

4.5 Cases study

Two cases were discussed within all stakeholders included: implementing agency, owner, Ministry of Public Works and Housing and a consulting firm. Cases included one for a donor-driven reconstruction project and the other for an owner-driven one.

4.5.1 Case I: Donor-driven reconstruction project

General information

Project name	Reconstruction of totally demolished houses
Implementing agency	Local organization
Donor	Bahrain
Beneficiaries	20 families as follows: • North Gaza : 10 • Gaza : 10
Project start date	2010
Project duration	18 months
Project value ($)	600,000

Project activities

1. Get the list of beneficiaries from the Government / Ministry of Public Works & Housing
2. Sign a contract with a consulting firm in order to prepare the project documents in addition to supervision during implementation.
3. Typical design and technical specification was prepared for all the 20 houses
4. General contractor was selected based on the lowest prices only
5. Sign the contracts with beneficiaries before starting implementation
6. Implementation

Analysis of the Case study

- No steering committee for the project in all phases, but signing contracts with beneficiaries directly.
- Almost all housing units were completed with very bad quality. All units were rebuilt with no stairs to the roof. Also, the foundations of the housing units were designed for ground, first and second floors only.
- Owner participation in the reconstruction process was refused by the implementing agency and was clearly written in the agreement between parties.
- Most of the 20 target houses were completed in 3 – 4 months.
- Weak engineering supervision on site.
- The committed money for each housing unit was $30,000 including contractors' indirect costs and overhead. So, it will be not sufficient to complete the house in a good quality with the committed area.
- Approved area for reconstruction was originally 130 m² and after solicitation of offers from contractors it was decreased to 110 m². The new area was not taken into consideration the area of the demolished unit or the family size.
- Almost all beneficiaries were very unsatisfied with the project in terms of quality, reconstruction approach and make radical changes in the housing unit directly after the completion of the unit.

Photos of some reconstructed houses

Changing the overall housing unit

North Gaza - April 2013

Very bad quality

Sammouni area / Gaza city - April 2013

Adding stairs inside the housing unit

Sammouni area / Gaza city - April 2013

Adding another floor to the housing unit

Sammouni area / Gaza city - April 2013

4.5.2 Case II: Owner-driven reconstruction project

General information

Project name	Reconstruction of totally demolished houses
Implementing agency	International organization
Donor	Gulf Cooperative Council
Beneficiaries	71 families as follows: • North Gaza : 37 • Gaza : 20 • Khan Younis: 1 • Rafah : 13
Project start date	July 2011
Project duration	12 months
Project value ($)	2,444,000

Project activities

1. Nominate and review the list of beneficiaries in close coordination with the Government / Ministry of Public Works & Housing
2. Field visits to all houses in order to get full details of families
3. Approval of final list by the Steering committee (Included all stakeholders). The final list includes: basic information, new building area, value, ect
4. Request all related documents (IDs, land ownership, survey report, house design and drawings approved by the related authorities, license and damage certificate)
5. Sign the contracts with beneficiaries during orientation meetings about the project and the phases. Contract includes all details and responsibility for each party
6. Implementation, field visits, monitoring, installments, etc
7. Completion of reconstruction

Analysis of the Case study

- Housing units were completed with very good quality for both construction and finishing works. Also, material was carefully selected by the owner.

- Housing units were reconstructed according to specific time schedule within the total project duration with average 3 – 4 months for each unit which is very time effective. No delays were recorded in the project time life.

- The committed money was sufficient to complete the house in a good quality taken into consideration all related costs. $260 per m² was provided for the ground floor and $180 per m² for first or second floors. Households were satisfied with the value and timely payments.

- The average money given to beneficiaries is: $33,133

- Admin cost for the implementing organization is: $91,545 which represents only 3.75% from the total project cost. It is considered a low percent in comparison with other projects.

- Approved area for reconstruction was discussed carefully based mainly on the original demolished area and the family members at time of reconstruction. For example, the original area for one of the cases was 60 m² and the approved is 90 m² and this verifies the building back better.

- Almost all beneficiaries were very satisfied with the project in terms of quality, reconstruction approach, money given, technical assistance provided,

- Effective participation by the owner in the reconstruction phases.

- Very good orientation before starting the reconstruction including: meeting with households, provide good description about the project and the approach, discuss the contract and annexes and highlight the minimum technical requirements of the new housing unit.

Photos of some reconstructed houses

Completed housing unit

Sammouni area / Gaza city - April 2013

Completed housing unit

Sammouni area / Gaza city - April 2013

Chapter V

CONCLUSION & RECOMMENDATIONS

Chapter V: Conclusions & Recommendations

5.1 Introduction

This chapter highlights the main findings of the research in addition to the recommendations.

5.2 Conclusions

Gaza Strip needs continuous efforts and funds in order to complete the reconstruction of totally and partially damaged houses. According to Shelter cluster fact sheet #5, issued in March 2013, 6,565 houses were totally demolished since Sep. 2000 from which only 3,527 houses were rebuilt (53.72%). During 2008/2009 war on Gaza, 3,481 houses were totally demolished from which only 1,700 houses were rebuilt (48.84%).

Main findings of the research can be summarized according to the objectives as follows:

5.2.1 Main approaches in reconstruction

- Donor-driven and owner-driven approaches are the main reconstruction approaches that had been adopted by the Government and implementing agencies in the reconstruction of totally demolished houses in Gaza Strip.

- Implementing agencies of the reconstruction process including: the Government, UN agencies, International NGOs, Local NGOs and private sector.

- Donor-driven is a three parties approach: donor – consultant – contractor with no / limited participation of the owner in the reconstruction process. Implementing agencies are managing the reconstruction process either at the same location (Donor-driven in situ) or at different location (Donor-driven ex nihilo, settlement).

- Owner-driven approach "Self-help" is a participatory approach where the prioritization of needs and the decision-making are in the hands of the affected families, giving them ownership of their rehabilitation and building their skills and self-confidence. Under owner-driven approach, donors provide assistance directly to households for the rebuilding of their demolished housing units.

5.2.2 Advantages and disadvantages for each approach

Donor-driven approach had some advantages in addition to many disadvantages as described in tables below:

Table 5-1: Advantages of donor-driven approach

Advantages	Suitable for: • Medium scale buildings • Large scale buildings • Rehousing programmes	Suitable for reconstruction in special cases like: • Vulnerable families • People with disability • Women headed families	Good designs by consultants firms
Explanations	People haven't the capacity and ability to manage the medium / large scale buildings Problem may happen within beneficiaries	People haven't the capacity and ability to manage the reconstruction process Money could be used to cover other expenses based on their needs	Designs and project documents are prepared by professionals consulting firms / Engineers

Table 5-2: Dis-advantages of donor-driven approach

Dis-advantages	Politics-related issues	Time-related issue	Donor-related issues
Explanations	• Delay in reconstruction process • Closing of borders • Fluctuation of prices • Contractors' claims	Delay in reconstruction process because: • Detailed assessment • Preparing of project documents • Procurement	• Lack of long term planning • No / limited involvement of owners in the process

Owner-driven approach had many advantages in addition to some disadvantages as described in tables below:

Table 5-3: Advantages of owner-driven approach

Advantages	Cost effective	Time effective	Support local economy	Improve social framework
Explanations	• No procurement phase • Money goes to the owner's bank account • No overhead / indirect costs • Owner's participation in the reconstruction (financially and non-financially) • Negotiation with suppliers / skilled workers / sub-contractors	• No pre-arrangements procedures (Mainly procurement) • Active role of the households • Does not fully depend on borders for materials • Can reconstruct many houses at the same time	• Participate in empowering small workshops / micro businesses • Encourage skilled workers / sub-contractors to restart working in the field of construction works • Support local industry / products	• Allow households to be the leader of the reconstruction process • Participate in empowering the affected families • Very effective in minimizing the psychosocial trauma of the households and family members

Table 5-4: Dis-advantages of owner-driven approach

Dis-advantages	Household-related issues	General-related issues
Explanations	Difficulty in dealing with some special cases including: • Vulnerable families • People with disability • Women headed families Complex legal problems with the land ownership	• Fluctuation of prices • Lack of skilled workers at the time of huge reconstruction activities

5.2.3 Donor-driven vs. owner-driven approach

- Owner-driven approach has many key advantages over the donor-driven approach in terms of quality & durability, time, cost, accountability & transparency, flexibility to make changes in the future and satisfaction.

- Sections below give details about that:

Donor-driven vs. owner-driven in terms of quality

Housing units in owner-driven approach prove high quality in terms of materials and reconstruction rather than those built with donor-driven one because of:

Owner-driven	Donor-driven
• Professional project designs / drawings • Very good quality materials and workmanship • Minimum technical specifications by the donors • Good technical assistance by implementing agencies • Sufficient financial assistance • Special care / follow up by the owner • Participation by the owner in the reconstruction process as a skilled worker	• Standards designs • Different types of material when lack of proper quantities • Unskilled labor and sub-contractors • Poor supervision by donors / implementing agencies • Frequent changes of sub-contractors • Cost-based selection of the general contractor rather than quality and cost based • Ineffective maintenance bonds usage after reconstruction

Donor-driven vs. owner-driven in terms of time

Owner-driven approach proves to be time-effective rather than donor-driven approach because of:

Owner-driven	Donor-driven
• No pre-procedures (like: assessment, land problems, and procurement) • Does not fully depend on borders for materials • Reconstruction of each unit is independent from others, so can reconstruct many units at the same time • Agreed schedule between the beneficiaries and donors • Timely installments	• Long time at the beginning is needed (hiring consultants, preparing designs, procurement) • Need huge construction materials that difficult to be found at time of closures • Usually, contractors work with couple of houses together not all at the same time • Frequent claims and problems on site • Delay in payments

Donor-driven vs. owner-driven in terms of cost

Owner-driven approach proves to be cost-effective rather than donor-driven approach because of:

Owner-driven	Donor-driven
• Cost effective ($260 / m^2) • No need for procurement phase thus minimize cost • No taxes, overhead and indirect costs • Remarkable owner's participation in the reconstruction (financially and non-financially) • Negotiation with suppliers / skilled workers / sub-contractors • No claims during the process • Less admin costs	• High cost ($350 / m^2) • Procurement and consultancy costs are added • Contractor overhead is added to the total cost (about 20 – 30%) • Difficult for owner to participate financially in the reconstruction process • Frequent claims from contractors

Donor-driven vs. owner-driven in terms of accountability & transparency

Owner-driven approach proves to be more accountable and transparent than donor-driven one because of:

Owner-driven	Donor-driven
• Clear contracts between beneficiaries and donors that including all information • Transparent way in beneficiaries selection • Effective and transparent method of payments and transferring money	• Simple contracts between beneficiaries and donors that including minimum information • Owners no nothing about the reconstruction costs

Donor-driven vs. owner-driven in terms of flexibility

Owner-driven approach proves to be flexible for future changes rather than donor-driven one because of:

Owner-driven	Donor-driven
• High participation by owners in the reconstruction phases • Daily follow up by owners to the activities • Owners' comments are taken into consideration • New housing units areas are suitable for the family members • Owners' participations are encouraged to increase space, change material type, etc.	• No / minimum participation by owners in the reconstruction process • Usually owners' comments are not taken seriously • Standard areas for all beneficiaries regardless of family members • Owners' participations are not allowed.

Donor-driven vs. owner-driven in terms of satisfaction

Combining all factors together, beneficiaries of owner-driven approach are much more satisfied with their new housing unit than those of donor-driven approach.

Donor-driven vs. owner-driven in general

- Reaching large numbers of beneficiaries in a short period of time.
- Owner-driven reconstruction programmes enable a degree of psycho-social recovery by allowing individuals not only to re-build their home but to also express a cultural identity.
- The building process using owner-driven programme has helped strengthen the local economy as the community has shared the profit margin that would normally be paid to a general contractor.

5.2.4 The best approach

One of the major implications of the study is that "owner-driven" approach has proven to be more successful than the "donor-driven" approach in all factors used to measure beneficiary perceptions and feedback including: quality and durability, time, cost, accountability and transparency, flexibility to make changes and satisfaction.

5.3 Recommendations

Owner-driven approach is strongly recommended in reconstruction of totally private demolished houses in Gaza Strip instead of donor-driven approach.

Important advices and actions (detailed below) are recommended based on the results of the study to improve the reconstruction process using owner-driven approach that participate effectively in building back better of Gaza Strip totally demolished houses.

Pre-reconstruction phase

Recommendations	Responsibility
1. Prepare detailed guidelines for the owner driven reconstruction approach in order to highlight most important issues and provide recommendations	The Government Implementing agencies
2. Establish Steering Committee for the reconstruction of Gaza Strip including all stakeholders representatives	The Government Implementing agencies
3. Help owners in solving their land related problems like: possession and Heritage by law awareness, legal aid, etc	The Government Land Authority Palestinian Bar Association
4. Maintain regular needs assessment and update	The Government Shelter Cluster
5. Ensure efficient coordination between all stakeholders regarding many issues: beneficiaries, standards, cost, contract template etc	Shelter Cluster Implementing agencies
6. Involve community based organization in the reconstruction process and phases	Implementing agencies
7. Pre-qualification of engineering / consulting firms	The Government Association of Engineers
8. Carefully prepare fair cost estimation for the reconstruction process and phases	Implementing agencies

Recommendations	Responsibility
9. Ensure adequate training for construction supervisors / field engineers	Implementing agencies
10. Conduct orientation workshops / training sessions before starting implementation including building capacity of affected people in the field of construction and management	Implementing agencies Community Based Organizations
11. Build trust and support relationship between donors and beneficiaries at all stages	Community Based Organizations
12. Build capacity of skilled workers in the field of construction and finishing works through vocational learning	The Government Universities / Applied Colleges / Vocational Training centers
13. Agree on minimum standards for building, finishing, materials, etc that ensure building back better	Implementing agencies
14. Establish a delivery mechanism for financial assistance that is easy to understand, access and monitor	Implementing agencies
15. Update and enforce building codes and construction guidelines that based on local building technologies and materials	The Government Association of Engineers

Reconstruction phase

Recommendations	Responsibility
1. Ensure adequate technical assistance that can provide both engineering advices (quality monitoring & assurance) and non-engineering advices (such as financial management)	Implementing agencies
2. Monitor market prices for materials, workmanship, etc	The Government
3. Encourage households to use local products and good recycled materials	Implementing agencies
4. Maintain regular cash flow to households as per agreement	Implementing agencies
5. Provide special attention and support to vulnerable groups (orphans, widows, the elderly, and the very poor)	The Government Implementing agencies
6. Take into consideration cross-cutting issues: disability, gender	Implementing agencies
7. Adopt measures that prevent inflation and ensure access to quality construction materials	The Government
8. Ensure local authority approvals and supervision to be sure that the construction met legal requirements	The Government Municipalities
9. Empower beneficiaries to supervise the quality of construction by creating awareness on good construction techniques and practices	Implementing agencies Community Based Organizations
10. Monitor market fluctuations in the price and availability of materials, transport and labor	The Government
11. Establish a support system for homeowners that are responsive to local requirements	Community Based Organizations
12. Ensure a transparent and accessible complaint system for all stakeholders	The Government Implementing agencies Community Based Organizations

Post-reconstruction phase

Recommendations	Responsibility
1. Review and assess the overall process	The Government Implementing agencies Community Based Organizations
2. Get feedback from households through monitoring visits	Implementing agencies Community Based Organizations
3. Ensure effective maintenance system that maintain the housing unit in very good conditions	Implementing agencies
4. Call for extra fund for reconstruction of remaining demolished houses	The Government Implementing agencies

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ANNEXES

Annexes

Annex I: Semi-structured interview questions

#	Questions
1	List the main approaches that were/are used in reconstruction of private houses that had been totally demolished during the war on Gaza 2008/2009
2	Highlight the advantages and disadvantages for each approach
3	Compare approaches in terms of: 1. Quality & durability, 2. Time, 3. Cost, 4. Accountability & transparency, 5. Flexibility to make changes in the future, and 6. Satisfaction
4	In your opinion, what is the feasible approach? And Why?
5	How can we improve this approach?

Annex II: Arabic questionnaire

الجامعـــــة الإسلاميـــــة – غـــــزة

عمـــــادة الدراســـــات العليـــــا

كليـــــة الهندســـــــة – قســـم الهندســـة المدنيـــة – إدارة المشـــروعات الهندسيـــة

استبانة بخصوص

المفاضلة بين أهم البدائل المستخدمة في إعادة إعمار المنازل الخاصة المتضررة في غزة:

(الإعمار من خلال الجهات الممولة أو الإعمار من قبل الشخص المتضرر)

وذلك جزء من البحث التكميلي لنيل درجة الماجستير في إدارة المشروعات الهندسية

الباحث: م. رامي تيسير مهاني

المشرف: د. علاء الدين داود الجماصي

إبريل 2013

بسم الله الرحمن الرحيم

الأخوة الأفاضل حفظهم الله

السلام عليكم ورحمة الله وبركاته،،،

بداية أتوجه إليكم بالشكر العميق لتخصيص جزءاً من وقتكم من أجل تزويدي بالمعلومات اللازمة لتعبئة هذه الإستبانة، وهذا إن دلَّ على شئ فإنما يدل على روح التعاون والمسئولية الأدبية والاكاديمية التي تتمتعون بها، فجزاكم الله خير ما جزى به عبدا من عباده.

هذه الإستبانة عبارة عن أحد أهم أجزاء رسالة الماجستير التي أسعى بإذن الله تعالى لنيلها وهي دراسة وتقييم أهم الطرق والبدائل المستخدمة في إعادة إعمار المنازل الخاصة المتضررة في غزة: الإعمار من خلال الجهات الممولة أو الإعمار من قبل الشخص المتضرر

تتكون هذه الإستبانة من عدة عناصر هي:

الجزء الأول: معلومات عامة

الجزء الثاني: العوامل المؤثرة في إعادة إعمار المنازل المتضررة وتنقسم إلى 6 مجموعات:

المجموعة الأولى: عوامل خاصة بالجودة والديمومة

المجموعة الثانية: العوامل الزمنية

المجموعة الثالثة: العوامل المالية

المجموعة الرابعة: عوامل خاصة بالشفافية والمساءلة

المجموعة الخامسة: العوامل المتعلقة بإمكانية إحداث تغييرات مستقبلية

المجموعة السادسة: عوامل متعلقة بالرضا العام عن الوحدة السكنية

الجزء الثالث: استفسارات أخرى

لذا آمل تعبئة الاستبانة بالمعلومات المطلوبة وأؤكد على أن جميع البيانات الواردة في هذه الإستبانة سوف تستخدم فقط من أجل خدمة أغراض البحث العلمي وهذا يعني سرية المعلومات المقدمة مع ضمان عدم اطلاع أي شخص أخر عليها بإذن الله تعالى.

الباحث/ م. رامي تيسير مهاني

ملاحظة: أي استفسار بشأن ما ورد بالأسئلة برجاء التواصل مع الباحث على رقم الجوال: 0599677685 أو عبر البريد الإلكتروني: rtmahani@gmail.com

أولاً: معلومات عامة

المدينة : _____

المحافظة : ☐ شمال غزة ☐ غزة ☐ الوسطى
☐ خانيونس ☐ رفح

المستوى الدراسي لرب الأسرة : ☐ ثانوية عامة أو أقل ☐ دبلوم ☐ جامعي

عدد أفراد الأسرة : _____

وصف الوحدة السكنية التي تم تدميرها أثناء الحرب:

1. ☐ طابق أرضي / سقف أسبست
2. ☐ طابق أرضي / سقف خرساني
3. ☐ مبنى أكثر من طابق
4. ☐ شقة سكنية
5. ☐ غير ذلك، برجاء التحديد:_____

مساحة الوحدة السكنية الإجمالية الذي تم هدمه؟

☐ أقل من 100 م² ☐ 100 – 150 م² ☐ 150 – 200 م² ☐ أكثر من 200 م²

طريقة إعادة الإعمار المستخدمة:

1. ☐ شركات مقاولات من خلال الحكومة / المنظمات الأممية والدولية المانحة مباشرة
2. ☐ من خلال المتضرر نفسه (منحه الدعم المالي اللازم لإعادة الإعمار)
3. ☐ غير ذلك، برجاء التحديد:_____

الجهة المنفذة:

1. ☐ الحكومة
2. ☐ المؤسسات الأممية أو الدولية
3. ☐ مؤسسات المجتمع المدني
4. ☐ غير ذلك، برجاء التحديد:_____

متى بدأت عملية إعادة إعمار الوحدة السكنية؟ عام _____

كم من الوقت استنفذ في عملية إعادة بناء الوحدة السكنية بعد اعتماد التمويل؟ _____ شهر

ثانياً: العوامل المؤثرة في إعادة إعمار الوحدات السكنية المتضررة

1. عوامل خاصة بالجودة والديمومة

#	البند	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة	لا ينطبق
1	قيام جهات متخصصة بتجهيز المخططات والتصاميم						
2	المشاركة في نقاش المخططات والتصاميم						
3	عقد ورشات تعريفية / توعوية في مجال إعادة الإعمار						
4	التعامل مع مقاول رئيسي لتنفيذ الأعمال						
5	وجود طاقم فني متكامل						
6	التعامل مع عمال مهرة						
7	استخدام الخرسانة الجاهزة في صب العناصر الرئيسية						
8	المواد المستخدمة ذات جودة عالية						
9	المشاركة في اعتماد المواد المستخدمة						
10	المعدات والأدوات المستخدمة ذات فعالية واضحة						
11	يتم أخذ ملاحظات المالك بالاعتبار في أثناء التنفيذ						
12	تطبيق إجراءات ضمان الجودة (الاختبارات)						
13	وجود دعم فني من الجهة المنفذة وفحص دوري للأعمال						
14	الوحدة السكنية مريحة وسهلة من ناحية الحركة الداخلية						
15	توفر الحماية الكافية للأطفال من المخاطر						
16	توفر البيئة الصحية للمعيشة (تدخله الشمس، الهواء)						
17	ظهور مشاكل واضحة في الوحدة السكنية بعد إعادة إعماره						
18	مساحة الوحدة السكنية مناسبة وتعادل ما تم هدمه						

2. العوامل الزمنية

#	البند	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة	لا ينطبق
1	البدء في إعادة الإعمار بعد الضرر مباشرة						
2	العمل كان ضمن خطة زمنية واضحة						
3	الالتزام بالفترة الزمنية المحددة لإعادة البناء						
4	صرف الدفعات المالية في وقتها						
5	هناك مواعيد محددة لإنهاء مراحل المشروع الرئيسية						
6	عند طلب مساعدة من الجهة المنفذة تتم في الوقت المناسب						

3. العوامل المالية

#	البند	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة	لا ينطبق
1	المبلغ المخصص يغطي قيمة الأضرار كاملة						
2	المبلغ المخصص كافي لإنجاز الأعمال المتفق عليها						
3	قيمة الدفعات المرحلية كافية						
4	مدى ملائمة ارتباط الدفعات المالية بالإنجاز						
5	فعالية وملائمة طريقة صرف الدفعات المالية						
6	وجود أثر لفروقات العملة في الدفعات المالية على التنفيذ						
7	استخدام مواد من آثار الوحدة السكنية السابقة في البناء (طوب، حديد، إلخ)						

4. عوامل خاصة بالشفافية والمساءلة

#	البند	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة	لا ينطبق
1	توقيع عقود رسمية قبل البدء بالعمل						
2	فتح حسابات بنكية رسمية وتحويل الأموال بشكل مجدول						
3	وجود كفالات أو ضمانات على الأعمال بعد تسليم المشروع						
4	متابعة الجهة الممولة للأعمال في الموقع بشكل دوري						
5	اختيار طريقة إعادة الإعمار من قبل الجهات المسئولة فقط						
6	وجود نظام وتسلسل واضح للشكاوي						
7	انتشار واضح للإعلان عن المساعدات المالية لإعادة الإعمار						
8	وجود نظام واضح وشفاف للضبط والتدقيق لضمان عدم التلاعب						
9	البنود المتفق عليها تم إنجازها بالكامل						
10	تواجد دوري للجهات الحكومية في الموقع (وزارة الأشغال العامة والإسكان، البلدية، إلخ)						

5. العوامل المتعلقة بإمكانية إحداث تغييرات مستقبلية

#	البند	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة	لا ينطبق
1	كفاية عدد الغرف لعدد أفراد الأسرة						
2	أساسات الوحدة السكنية تم تصميمها لتحمل طوابق متعددة						
3	مرونة التصميم الداخلي للوحدة السكنية						
4	إمكانية إزاحة بعض العناصر الإنشائية بسهولة						
5	ملائمة موقع البناء داخل الأرض						
6	كفاية مساحة الخدمات الأساسية لعدد أفراد الأسرة						
7	ملائمة تأسيسات الشبكات المختلفة للتغييرات						
8	الأخذ بعين الاعتبار وجود ذوي احتياجات خاصة في عملية إعادة الإعمار						

6. عوامل متعلقة بالرضا العام عن الوحدة السكنية

#	البند	مرضِ تماماً	مرضِ	متوسط	غير مرضِ	غير مرضِ إطلاقاً
1	مدى الرضا عن جودة العمل					
2	مدى الرضا عن مساحة البناء					
3	مدى الرضا عن فعالية التصميم واستغلال المساحة الداخلية					
4	مدى الرضا عن وقت بدء إعادة الإعمار					
5	مدى الرضا عن المدة المخصص لإعادة الإعمار					
6	مدى الرضا عن التكلفة المقررة لإعادة البناء					
7	مدى الرضا عن إمكانية التوسع المستقبلي					
8	مدى الرضا عن طريقة إعادة الإعمار					
9	مدى الرضا عن المظهر العام للوحدة السكنية ومدى ملائمته للبيئة الخاصة بالمستفيد					
10	وجود كافة المتطلبات في الوحدة السكنية الجديدة					
11	الرضا العام عن التدخل في إعادة الإعمار					

ثالثاً: استفسارات أخرى

✓ **هل هناك فرق بين الوحدة السكنية القديمة والجديدة؟**

☐ نعم ☐ لا

إذا نعم، فما أهم الاختلافات:

_____

_____

_____

✓ **هل ساهمت في إعادة إعمار الوحدة السكنية؟**

☐ نعم ☐ لا

☐ مساهمة مالية ☐ مساهمة غير مالية (في البناء، المواد، غيرها)

قيمة المساهمة: _____

✓ **إذا توفرت مبالغ تعويض إضافية لاستكمال الإعمار، كيف تفضل طريقة التعامل معها؟**

☐ دفعات مالية مباشرة على أن تتم عملية إدارة الإعمار من قبل الشخص المتضرر

☐ إعادة إعمار الوحدة السكنية من جهات خارجية وتسليمه جاهزاً

☐ أخرى، حددها _____

بارك الله فيكم،،،

Annex III: English questionnaire

Islamic University of Gaza

Deanery of Graduates Studies

Faculty of Engineering - Civil Engineering Department

Construction Management

Questionnaire Survey

Comparative study of Donor driven vs. Owner driven approach on the way to "build back better" of Gaza private demolished houses

A Thesis submitted in partial fulfillment of the requirement for the degree of Master of Science in Civil Engineering- Construction Management

Researcher: Rami T. Mahani

Supervisor: Dr. Alaeddinne D. Eljamassi

April 2013

Dear Sir / Madam

First of all, deep thanks for you for giving me the information for filling this questionnaire.

This questionnaire is the most important part of my post graduate thesis in construction management / civil engineering department at the Islamic University of Gaza. The study is about "*Comparative study of Donor driven vs. Owner driven approach on the way to "build back better" of Gaza private demolished houses*"

The questionnaire has three main sections:

Section I: General information

Section II: Factors affecting the reconstruction process: included 6 categorized factors to be compared included:

Quality and durability
Time
Cost
Accountability and transparency
Flexibility to make changes in the future
Satisfaction

Section III: Other questions

Finally, I appreciate your effort in giving answers for the questions in the questionnaire, knowing that given information will be used for the purpose of the scientific study only and will be treated confidentially.

Researcher: Rami T. Mahani

For any question, please call me at 0599677685 or e-mail me to: rtmahani@gmail.com

Section I: General information

City : _____

Governorate : ☐ North Gaza ☐ Gaza ☐ Middle Area ☐ Khan Younis ☐ Rafah

Households' educational level : ☐ 12th grade or less ☐ Diploma ☐ University

No. of Family members : _____

Description of the housing unit which was totally demolished in 2008/2009 war:

☐ Ground floor with non-concrete ceiling
☐ Ground floor with concrete ceiling
☐ Multi-floor building
☐ Apartment
☐ Other, please specify: _____

Total area of demolished housing unit:

☐ Less than 100 m² ☐ 100 – 150 m² ☐ 150 – 200 m² ☐ more than 200 m²

Reconstruction approach used:

☐ Donor-driven through the Government / UN agencies / International NGOs
☐ Owner-driven
☐ Other, please specify: _____

Donor:

☐ Government
☐ UN agencies / International organizations
☐ Local organizations
☐ Other, please specify: _____

Reconstruction process started in year: _____

Reconstruction process duration: _____ months

Section II: Factors affecting the reconstruction process

1. Quality and durability

#	Factor	Strongly Agree	Agree	Average	Disagree	Strongly disagree	Not applicable
1	Design and drawings were prepared by specialized firm / consultants						
2	Participation/consultation in project design process						
3	Orientation workshops were held before start reconstruction process						
4	House reconstructed by general contractor						
5	Availability of technical team						
6	House reconstructed by skilled workers						
7	Ready mix concrete used for main structural elements						
8	High quality materials were used						
9	Participation in material selection						
10	Sufficient tools / machinery on site						
11	Comments were taken into consideration during implementation process						
12	Quality control / assurance arrangements were done (testing, etc)						
13	Adequate technical assistance was provided by implementing agency on site						
14	Comfortable housing unit (internal design / quality)						
15	Adequate children protection (Electricity, handrail, etc)						
16	Healthy housing unit (location, sunlight, air, etc)						
17	Observable problems in housing unit (Cracks, leakage, etc						
18	New reconstruction area is similar to demolished one						

2. Time

#	.	Strongly Agree	Agree	Average	Disagree	Strongly disagree	Not applicable
1	Reconstruction started in proper time after the war						
2	Implementation was well scheduled						
3	Reconstruction was completed according to the agreed date and time						
4	Payments were transferred on time						
5	Project phases /milestones were completed as per plan						
6	Timely assistance from the implementing agency						

3. Cost

#	Factor	Strongly Agree	Agree	Average	Disagree	Strongly disagree	Not applicable
1	Allocated money covered total loss of the original housing unit						
2	Allocated money was sufficient for reconstruction process of the new housing unit						
3	Installments were sufficient						
4	Suitable linkage of installments with reconstruction progress / phases						
5	Procedure of transferring installments was efficient (Cash, cheque, bank transfer, etc)						
6	Currency gain/loss had negative effect on implementation process						
7	Usage of demolished house materials in reconstruction						

4. Accountability and transparency

#	Factor	Strongly Agree	Agree	Average	Disagree	Strongly disagree	Not applicable
1	Clear contract with implementing agency was signed before staring reconstruction process						
2	Usage of bank accounts in transferring cash						
3	Availability of maintenance bonds / certificates on works done						
4	Regular follow up / monitoring by implementing agency on site						
5	Reconstruction approach was chosen transparently by the implementing agency						
6	Clear complaint system was adopted						
7	Information dissemination regarding reconstruction process was sufficient						
8	Availability of solid control system to avoid any manipulation						
9	All contracted items were completed						
10	Regular visits of governmental bodies to the site (Ministry of public works, municipality)						

5. Flexibility to make changes in the future

#	Factor	Strongly Agree	Agree	Average	Disagree	Strongly disagree	Not applicable
1	Adequate rooms for family members						
2	Design of housing unit foundations was taken into consideration future vertical expansion						
3	Efficiency / Flexibility internal design of the housing unit						
4	Flexibility in re-locating / shifting walls and other internal elements						
5	Suitable location of the housing unit inside the whole land						
6	Essential services were sufficient for all family members						
7	Adaptation of different internal networks (water, wastewater, electricity, etc) for any changes						
8	People with disability needs were taken into consideration						

6. Satisfaction

#	Factor	Very satisfied	Satisfied	Average	Unsatisfied	Very unsatisfied
1	Work quality / durability					
2	Housing unit total area					
3	Efficiency of design / space availability					
4	Reconstruction process starting time					
5	Reconstruction duration					
6	Reconstruction cost					
7	Future expansion / making future changes					
8	Reconstruction approach (donor-driven / owner-driven)					
9	Overall building appearance					
10	Availability of all requirements					
11	Overall satisfaction					

Section III: Other questions

Are there any differences between the old and the new housing unit?

☐ Yes ☐ No

If yes, please list the most important differences:

_____

Did you participate in the reconstruction process?

☐ Yes ☐ No

If yes:

☐ Financially ☐ Non-financially

Estimated value of participation: _____

In case of extra fund for completing reconstruction, how do you prefer to be?

☐ Provide financial assistance and I will manage the reconstruction process
☐ Provide ready housing units / works finalized by consultants / contractors
☐ Other, please specify: _____

Annex IV: Criterion-related validity test results

1. Quality and durability

#	Factor	Pearson correlation coefficient	Significant (2 tailed)
1	Design and drawings were prepared by specialized firm / consultants	-0.0314	0.001
2	Participation/consultation in project design process	0.7420	0.000
3	Orientation workshops were held before start reconstruction process	0.2770	0.003
4	House reconstructed by traditional way / general contractor	-0.3800	0.000
5	Availability of technical team of the general contractor	0.5050	0.000
6	House reconstructed by sub-contractors / skilled workers	0.8370	0.000
7	Ready mix concrete used for main structural elements	-0.3590	0.000
8	High quality materials were used	0.7490	0.000
9	Participation in material selection	0.8330	0.000
10	Sufficient tools / machinery on site	0.7360	0.000
11	Comments were taken into consideration during implementation process	0.8520	0.000
12	Quality control / assurance arrangements were done (testing, etc)	0.4810	0.000
13	Adequate technical assistance was provided by implementing agency on site	0.5800	0.000
14	Comfortable housing unit (internal design / quality)	0.7930	0.000
15	Adequate children protection (Electricity, handrail, etc)	0.6650	0.000
16	Healthy housing unit (location, sunlight, air, etc)	0.5530	0.000
17	Observable problems in housing unit (Cracks, leakage, etc	0.4430	0.000
18	New reconstruction area is similar to demolished one	0.5220	0.000

2. Time

#	Factor	Pearson correlation coefficient	Significant (2 tailed)
1	Reconstruction started in proper time after the war	0.371	0.000
2	Implementation was well scheduled	0.890	0.000
3	Reconstruction was completed according to the agreed date and time	0.905	0.000
4	Payments were transferred on time	0.740	0.000
5	Project phases /milestones were completed as per plan	0.935	0.000
6	Timely assistance from the implementing agency	0.740	0.000

3. Cost

#	Factor	Pearson correlation coefficient	Significant (2 tailed)
1	Allocated money covered total loss of the original housing unit	0.626	0.000
2	Allocated money was sufficient for reconstruction process of the new housing unit	0.660	0.000
3	Installments were sufficient	0.728	0.000
4	Suitable linkage of installments with reconstruction progress / phases	0.754	0.000
5	Procedure of transferring installments was efficient (Cash, cheque, bank transfer, etc)	0.708	0.000
6	Currency gain/loss had negative effect on implementation process	0.588	0.000
7	Usage of demolished house materials in reconstruction	-0.160	0.088

4. Accountability and transparency

#	Factor	Pearson correlation coefficient	Significant (2 tailed)
1	Clear contract with implementing agency was signed before staring reconstruction process	-0.249	0.007
2	Usage of bank accounts in transferring cash	0.472	0.000
3	Availability of maintenance bonds / certificates on works done	0.602	0.000
4	Regular follow up / monitoring by implementing agency on site	0.432	0.000
5	Reconstruction approach was chosen transparently by the implementing agency	0.144	0.124
6	Clear complaint system was adopted	0.732	0.000
7	Information dissemination regarding reconstruction process was sufficient	0.192	0.039
8	Availability of solid control system to avoid any manipulation	0.631	0.000
9	All contracted items were completed	0.431	0.000
10	Regular visits of governmental bodies to the site (Ministry of public works, municipality)	0.266	0.004

5. Flexibility to make changes in the future

#	Factor	Pearson correlation coefficient	Significant (2 tailed)
1	Adequate rooms for family members	0.803	0.000
2	Design of housing unit foundations was taken into consideration future vertical expansion	0.765	0.000
3	Efficiency / Flexibility internal design of the housing unit	0.913	0.000
4	Flexibility in re-locating / shifting walls and other internal elements	0.811	0.000
5	Suitable location of the housing unit inside the whole land	0.830	0.000
6	Essential services were sufficient for all family members	0.820	0.000
7	Adaptation of different internal networks (water, wastewater, electricity, etc) for any changes	0.699	0.000
8	People with disability needs were taken into consideration	0.389	0.100

6. Satisfaction

#	Factor	Pearson correlation coefficient	Significant (2 tailed)
1	Work quality / durability	0.754	0.000
2	Housing unit total area	0.803	0.000
3	Efficiency of design / space availability	0.842	0.000
4	Reconstruction process starting time	0.183	0.050
5	Reconstruction duration	0.715	0.000
6	Reconstruction cost	0.511	0.000
7	Future expansion / making future changes	0.696	0.000
8	Reconstruction approach (donor-driven / owner-driven)	0.837	0.000
9	Overall building appearance	0.655	0.000
10	Availability of all requirements	0.652	0.000
11	Overall satisfaction	0.878	0.000

Annex V: Questionnaires statistical results

Section I: General information

Geographical distribution of the sample

Governorate	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
North Gaza	7	15.91	42	59.15	49	42.61
Gaza	8	18.18	19	26.76	27	23.48
Middle Area	0	-	1	1.41	1	0.87
Khan Younis	15	34.09	1	1.41	16	13.91
Rafah	14	31.82	8	11.27	22	19.13
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	40.25	Sig.	0.000

Households' educational level

Educational level	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
12th Grade or	31	70.45	56	78.87	87	75.65
Diploma	4	9.09	3	4.23	7	6.09
University	9	20.45	12	16.90	21	18.26
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	1.5	Sig.	0.473

No. of family members

Members	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
Less than 5	1	2.27	12	16.90	13	11.30
5 - 8	19	43.18	27	38.03	46	40.00
9 - 12	20	45.45	23	32.39	43	37.39
More than 13	4	9.09	9	12.68	13	11.30
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Mean	9.20		8.50		8.75
Std deviation	2.65		4.936		4.209
Chi-square test	Value	0.824		Sig.	0.412

Description of the totally demolished housing unit

Original unit	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
Ground floor with non-concrete ceiling	30	68.18	21	29.58	51	44.35
Ground floor with concrete ceiling	12	27.27	18	25.35	30	26.09
Multi-floor building	2	4.55	28	39.44	30	26.09
Apartment	0	-	4	5.63	4	3.48
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	24.32	Sig.	0.000

Total area of demolished housing unit

Original area	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
Less than 100 m²	3	6.82	8	11.27	11	9.57
100 – 150 m²	15	34.09	15	21.13	30	26.09
150 – 200 m²	11	25.00	16	22.54	27	23.48
more than 200 m²	15	34.09	32	45.07	47	40.87
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	3.18	Sig.	0.364

Donor

Donor	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
Government	1	2.27	5	7.04	6	5.22
UN agencies / International organizations	30	68.18	66	92.96	96	83.48
Local organizations	13	29.55	0	-	13	11.30
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	24.16	Sig.	0.000

Reconstruction process started in year

Year started	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
2009	1	2.27	0	-	1	0.87
2010	2	4.55	1	1.41	3	2.61
2011	41	93.18	36	50.70	77	66.96
2012	0	-	31	43.66	31	26.96
2013	0	-	3	4.23	3	2.61
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	**Value**	**31.03**	**Sig.**	**0.000**

Reconstruction process duration

Duration	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
1 - 4 months	10	22.73	13	18.31	23	20.00
5 - 8 months	3	6.82	38	53.52	41	35.65
9 - 12 months	18	40.91	20	28.17	38	33.04
More than 13 months	13	29.55	0	-	13	11.30
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Mean	**11.45**		**7.11**		
Chi-square test	**Value**	**4.988**		**Sig.**	**0.000**

Section II: Factors affecting the reconstruction process

Quality and durability

Factors	Reconstruction approaches								t-test		
	Donor-driven				Owner-driven						
	Mean	Std error	%	Scale	Mean	Std error	%	Scale	t-value	Df	sig.
Design and drawings were prepared by specialized firm / consultants	5.00	0.000	100.00	Strongly agree	4.76	0.051	95.20	Strongly agree	4.694	70	0.000
Participation/consultation in project design process	1.45	0.124	29.00	Strongly disagree	4.20	0.159	84.00	Strongly agree	13.632	113	0.000
Orientation workshops were held before start reconstruction process	1.61	0.146	32.20	Strongly disagree	1.94	0.165	38.80	Disagree	1.496	111	0.138
House reconstructed by general contractor	4.16	0.056	83.20	Agree	2.52	0.195	50.40	Disagree	8.061	81	0.000
Availability of technical team	1.86	0.186	37.20	Disagree	3.24	0.168	64.80	Average	5.490	101	0.000
House reconstructed by skilled workers	1.39	0.093	27.80	Strongly disagree	4.63	0.078	92.60	Strongly agree	26.678	96	0.000
Ready mix concrete used for main structural elements	4.89	0.093	97.80	Strongly Agree	2.93	0.194	58.60	Average	9.000	98	0.000
High quality materials were used	2.64	0.166	52.80	Average	4.35	0.114	87.00	Strongly agree	8.526	82	0.000
Participation in material selection	1.30	0.106	26.00	Strongly disagree	4.41	0.103	88.20	Strongly agree	21.046	105	0.000
Sufficient tools / machinery on site	2.55	0.173	51.00	Average	4.28	0.073	85.60	Strongly agree	9.230	58	0.000
Comments were taken into consideration during implementation process	1.16	0.065	23.20	Strongly disagree	4.75	0.056	95.00	Strongly agree	42.062	98	0.000
Quality control / assurance arrangements were done (testing, etc)	2.39	0.201	47.80	Disagree	3.35	0.205	67.00	Average	3.367	107	0.001
Adequate technical assistance was provided by implementing agency on site	2.41	0.182	48.20	Disagree	3.44	0.152	68.80	Agree	4.329	96	0.000

Factors	Reconstruction approaches								t-test		
	Donor-driven				Owner-driven						
	Mean	**Std error**	**%**	**Scale**	**Mean**	**Std error**	**%**	**Scale**	**t-value**	**Df**	**sig.**
Comfortable housing unit (internal design / quality)	2.18	0.160	43.60	Disagree	4.48	0.066	89.60	Strongly agree	13.256	58	0.000
Adequate children protection (Electricity, handrail, etc)	1.34	0.145	26.80	Strongly disagree	3.31	0.183	66.20	Average	8.417	113	0.000
Healthy housing unit (location, sunlight, air, etc)	3.86	0.168	77.20	Agree	4.65	0.057	93.00	Strongly agree	4.428	53	0.000
Observable problems in housing unit (Cracks, leakage, etc	3.80	0.240	76.00	Agree	2.50	0.177	50.00	Disagree	4.371	87	0.000
New reconstruction area is similar to demolished one	2.02	0.214	40.00	Disagree	3.54	0.168	70.80	Agree	5.557	91	0.000
Total	**2.48**	**0.617**	**49.60**	**Disagree**	**3.81**	**0.360**	**76.20**	**Agree**	**18.572**	**72**	**0.000**

Time

Factors	Reconstruction approaches								t-test		
	Donor-driven				Owner-driven						
	Mean	**Std error**	**%**	**Scale**	**Mean**	**Std error**	**%**	**Scale**	**t-value**	**Df**	**sig.**
Reconstruction started in proper time after the war	1.45	0.147	29.00	Strongly disagree	1.48	0.085	29.60	Strongly disagree	0.143	71	0.886
Implementation was well scheduled	2.02	0.224	40.40	Disagree	3.56	0.128	71.20	Agree	5.970	71	0.000
Reconstruction was completed according to the agreed date and time	2.02	0.224	40.40	Disagree	3.62	0.129	72.40	Agree	6.177	71	0.000
Payments were transferred on time	NA	NA	NA	NA	3.25	0.166	65.00	Average	NA	NA	NA
Project phases /milestones were completed as per plan	1.86	0.210	37.20	Disagree	3.63	0.129	72.60	Agree	7.193	75	0.000
Timely assistance from the implementing agency	1.23	0.117	24.60	Strongly disagree	2.97	0.171	59.40	Average	8.417	111	0.000
Total	**1.72**	**0.157**	**34.40**	**Strongly disagree**	**3.08**	**0.094**	**61.60**	**Average**	**7.455**	**73**	**0.000**

Cost

Factors	Reconstruction approaches								t-test		
	Donor-driven				Owner-driven						
	Mean	Std error	%	Scale	Mean	Std error	%	Scale	t-value	Df	sig.
Allocated money covered total loss of the original housing unit	1.09	0.091	21.80	Strongly disagree	2.35	0.163	47.00	Disagree	6.755	104	0.000
Allocated money was sufficient for reconstruction process of the new housing unit	NA	NA	NA	NA	3.85	0.148	77.00	Agree	NA	NA	NA
Installments were sufficient	NA	NA	NA	NA	3.17	0.165	63.40	Average	NA	NA	NA
Suitable linkage of installments with reconstruction progress / phases	NA	NA	NA	NA	3.83	0.113	76.60	Agree	NA	NA	NA
Procedure of transferring installments was efficient (Cash, cheque, bank transfer, etc)	NA	NA	NA	NA	3.69	0.157	73.80	Agree	NA	NA	NA
Currency gain/loss had negative effect on implementation process	NA	NA	NA	NA	2.97	0.208	59.40	Average	NA	NA	NA
Usage of demolished house materials in reconstruction	1.05	0.000	20.00	Strongly disagree	1.09	0.097	22.00	Strongly disagree	3.787	70	0.004
Total	**3.05**	**0.045**	**61.00**	**Average**	**3.50**	**0.738**	**70.00**	**Agree**	**4.593**	**101**	**0.000**

Accountability and transparency

Factors	Reconstruction approaches								t-test		
	Donor-driven				Owner-driven						
	Mean	Std error	%	Scale	Mean	Std error	%	Scale	t-value	Df	sig.
Clear contract with implementing agency was signed before staring reconstruction process	5.00	0.000	100.00	Strongly agree	4.83	0.045	96.60	Strongly agree	3.775	70	0.004
Usage of bank accounts in transferring money	NA	NA	NA	NA	1.76	0.148	35.20	Strongly disagree	NA	NA	NA
Availability of maintenance bonds / certificates on works done	1.18	0.075	23.60	Strongly disagree	2.10	0.166	42.00	Disagree	5.047	95	0.000
Regular follow up / monitoring by implementing agency on site	2.16	0.203	43.20	Disagree	3.85	0.105	77.00	Agree	7.373	66	0.000
Reconstruction approach was chosen transparently by the implementing agency	4.36	0.223	87.20	Strongly agree	1.89	0.160	37.80	Disagree	9.021	85	0.000
Clear complaint system was adopted	1.91	0.112	38.20	Disagree	2.87	0.142	57.40	Average	5.341	113	0.000
Information dissemination regarding reconstruction process was sufficient	4.36	0.149	87.20	Strongly agree	3.28	0.150	65.60	Average	5.106	107	0.000
Availability of solid control system to avoid any manipulation	1.98	0.161	39.60	Disagree	3.21	0.128	64.20	Average	5.996	92	0.000
All contracted items were completed	3.27	0.182	65.40	Average	4.39	0.095	87.80	Strongly agree	5.460	67	0.000
Regular visits of governmental bodies to the site (Ministry of public works, municipality, etc)	1.30	0.132	26.00	Strongly disagree	2.18	0.167	43.60	Disagree	3.752	113	0.000
Total	**2.84**	**0.042**	**56.80**	**Average**	**3.04**	**0.062**	**60.80**	**Average**	**2.667**	**111**	**0.009**

Flexibility to make changes in the future

Factors	Reconstruction approaches								t-test		
	Donor-driven				Owner-driven						
	Mean	Std error	%	Scale	Mean	Std error	%	Scale	t-value	Df	sig.
rooms for family members Adequate	1.80	0.158	36.00	Disagree	4.03	0.139	80.60	Agree	10.616	99	0.000
Design of housing unit foundations was taken consideration future vertical expansion into	3.18	0.196	63.60	Average	4.59	0.068	91.80	Strongly agree	6.798	54	0.000
Efficiency / Flexibility internal design of the unit housing	2.45	0.188	49.00	Disagree	4.39	0.089	87.80	Strongly agree	9.333	62	0.000
Flexibility in re-locating / shifting walls and internal elements other	2.73	0.176	54.60	Average	3.80	0.113	76.00	Agree	5.141	77	0.000
Suitable location of the housing unit inside the whole land	3.16	0.175	63.20	Average	4.41	0.103	88.20	Strongly agree	6.148	73	0.000
Essential services were sufficient for all family members	3.34	0.145	66.80	Average	4.37	0.101	87.40	Strongly agree	5.801	83	0.000
‘Adaptation of different internal networks (water wastewater, electricity, etc) for any changes	2.89	0.198	57.80	Average	4.37	0.097	87.40	Strongly agree	6.706	64	0.000
People with disability needs were taken into consideration	1.00	0.000	20.00	Strongly disagree	2.80	0.355	56.00	Average	5.077	14	0.020
Total	**2.77**	**0.113**	**55.40**	**Average**	**4.24**	**0.076**	**84.80**	**Strongly agree**	**10.795**	**81**	**0.000**

Satisfaction

Factors	Reconstruction approaches								t-test		
	Donor-driven				Owner-driven						
	Mean	Std error	%	Scale	Mean	Std error	%	Scale	t-value	Df	sig.
Work quality / durability	2.23	0.175	44.60	Unsatisfied	4.15	0.143	83.00	Satisfied	8.545	94	0.000
Housing unit total area	2.07	0.164	41.40	Unsatisfied	4.00	0.128	80.00	Satisfied	9.279	91	0.000
Efficiency of design / space availability	2.25	0.172	45.00	Unsatisfied	4.52	0.063	90.40	Very satisfied	12.372	55	0.000
Reconstruction process starting time	1.64	0.142	32.80	Very unsatisfied	1.83	0.127	36.60	Unsatisfied	1.022	100	0.309
Reconstruction duration	1.66	0.134	33.20	Very unsatisfied	3.39	0.143	67.80	Average	8.876	109	0.000
Reconstruction cost	1.43	0.429	28.60	Very unsatisfied	2.46	0.168	49.20	Unsatisfied	2.252	8	0.055
Future expansion / making future changes	3.30	0.147	66.00	Average	4.25	0.074	85.00	Very satisfied	5.801	65	0.000
Reconstruction approach (donor-driven / owner-driven)	1.61	0.139	32.20	Very unsatisfied	4.08	0.152	81.60	Satisfied	11.986	111	0.000
Overall building appearance	3.66	0.162	73.20	Satisfied	4.45	0.063	89.00	Very satisfied	4.547	56	0.000
Availability of all requirements	3.89	0.109	77.80	Satisfied	4.56	0.072	91.20	Very satisfied	5.196	79	0.000
Overall satisfaction	1.50	0.115	30.00	Very unsatisfied	3.52	0.136	70.40	Satisfied	11.358	112	0.000
Total	**2.37**	**0.834**	**47.40**	**Unsatisfied**	**3.75**	**0.062**	**75.00**	**Satisfied**	**13.199**	**88**	**0.000**

Section III: Other questions

Differences between the old and the new housing unit

Differ?	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
Yes	44	100.00	60	84.51	104	90.43
No	0	-	11	15.49	11	9.57
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	7.54	Sig.	0.006

Participation in the reconstruction process

Participated?	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
Yes	13	29.55	63	88.73	76	66.09
No	31	70.45	8	11.27	39	33.91
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	42.46	Sig.	0.000

Future allocation, best approach

The best	Reconstruction approaches				Total	
	Donor-driven		Owner-driven			
	No.	%	No.	%	No.	%
Owner-driven	40	90.91	63	88.73	103	89.57
Donor-driven	4	9.09	8	11.27	12	10.43
Total	**44**	**100.00**	**71**	**100.00**	**115**	**100.00**

Chi-square test	Value	0.11	Sig.	0.740