Shannon Airport Feasibility Study

Commissioned by Irish Aid

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Daniel Dieckhaus, Project Manager
Graham Heaslip, Humanitarian expert
Ian Heigh, Director *Everywhere* - Supply Chain Management expert
Hetty van Doorn, General Manager *Everywhere*

Index

Appendices

Executive Summary

This study, commissioned by Irish Aid, evaluates the feasibility of a potential humanitarian hub at Shannon Airport. To achieve this end, the report 1) establishes the central question to be answered, 2) compares the current humanitarian landscape and functions with Shannon Airport's main capabilities to determine potential roles for the airport, 3) investigates these potential roles by examining risks and benefits, costs, and viability, 4) based off findings from this investigation, analyses each role's main advantages and drawbacks and 5) uses the analysis to provide final recommendations. The report is based on findings from document research and interviews with 42 stakeholders from 27 different organizations.

Study question
Using the Terms of Reference and in consultation with the Minister of State for Trade and Cooperation, the Irish Aid Director General and the Irish Aid Emergency Recovery Section, the central question to be answered was established as: **'Is there a role for Shannon Airport and its facilities in the international humanitarian relief effort?'**

Strategic humanitarian landscape, Shannon Airport and potential roles
A survey of the strategic humanitarian landscape showed a decline in funding relative to demand and rising costs along with a related push toward greater consolidation, effectiveness, efficiency and value for money. In particular, humanitarian actors increasingly use external service providers to improve responsiveness to disasters, achieve lower costs (through avoiding overhead, pooling services, and higher operating efficiencies), and tap into external expertise. For services that entail physical locations such as storage of relief items, proximity to disaster affected areas, lower transport/storage costs and ease of access is emphasized.

An examination of the various humanitarian functions and most common externally sourced services did not reveal substantial gaps; the majority of externally sourced services appear to have fairly saturated markets with few substantial concerns from users.

As a potential external service provider, Shannon Airport's capabilities fall into three main categories of strengths: (i) The physical facilities, services, operational capabilities and location of Shannon Airport, (ii) Local governmental and commercial support to Shannon Airport and, (iii) Complementary actors/services located in the vicinity of Shannon Airport, such as third party logistics providers and medical industry leaders.

Given these strengths and the current humanitarian environment the study identified four potential humanitarian roles for Shannon Airport:
1) Prepositioning of relief items,
2) Prepositioning of medical items,
3) Training centre, and
4) EU civil protection.

Role investigation and analysis

For each role, the project team examined current service providers and spoke to a variety of key stakeholders - from users to donors and network managers.

Benefits and risks for each option were assessed by answering three main questions:

1) Does the role for Shannon Airport make sense given the reasoning behind that humanitarian function?
2) Does the role for Shannon Airport fit into on-going trends for that function?
3) Does the role for Shannon Airport help fill any gaps or contribute an added value?

Then the team calculated estimated costs per option for start-up and annual operation and assessed the viability as the combination of three variables: confidence ("Can Shannon Airport adequately perform the role?"), implementation costs ("How much investment is required for start-up of this role?"), and likelihood of use ("Will organisations use/fund Shannon Airport in this role?").

Risk/benefit

Analysis and assessment of the information collected through these steps showed that the roles related to the prepositioning of medical or general relief items show poor risk/benefit ratios because they run counter to the logic of locating stocks close to disaster response sites and/or suppliers, counter to on-going trends moving stocks away from Europe and toward sub-regional locations, and do not fill or address any gaps in existing prepositioning networks.

The role of training centre shows a marginally better risk/benefit ratio due to its potential use as a neutral site, but presents an inconvenient travel destination for aid agencies and runs counter to current trends pushing for greater training held in regional and sub-regional locations in Africa and Asia.

Value for money

The study shows low relative value for money for the potential roles of Shannon Airport, given the associated operation and transport costs, low likelihood of usage or regular funding, uncertainty of specific services offered (for the training centre role), and the pre-existence of relatively well-functioning service providers. For example, the estimated costs of running a prepositioning site at Shannon Airport for just one year represents the equivalent of providing humanitarian aid to over 23,000 people; a provision of aid that can and has been done using existing prepositioning networks.[i]

Viability

Due to the risk/benefit issues addressed above and the fact that there are no major gaps in existing structures, stakeholders consulted did not see Shannon Airport as a strong site to fill a humanitarian role nor did they believe their organisations would use, manage, or fund such a role.

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[i] See inset box in section 4.1 for further information.

They did not have a clear favourable impression of the viability of Shannon Airport in any of the proposed humanitarian roles and showed a minimal degree of interest. In an environment of tight funding, the humanitarian roles for Shannon Airport – fraught with expected high cost and uncertainty - do not present a superior alternative to current service providers.

Recommendations

This analysis led the team to conclude that it **does not presently see a role for Shannon Airport that adds clear value to the international humanitarian relief effort.**

However, the study does provide a potential opening for a role for Shannon Airport in EU Civil Protection. While not specifically part of humanitarian relief nor under the remit of Irish Aid, some commonalities do exist, such as at the EU level where a Directorate General (DG-ECHO) exists for "Humanitarian Aid and Civil Protection."[ii]

An EU civil protection role for Shannon Airport presents a more attractive risk/benefit ratio than the other three roles because (i) the potential European disaster sites are closer, (ii) Shannon's neutral, peripheral site could be useful in certain circumstances, and (ii) it could fit into ongoing trends at the EU level to strengthen civil protection coordination and response capabilities.
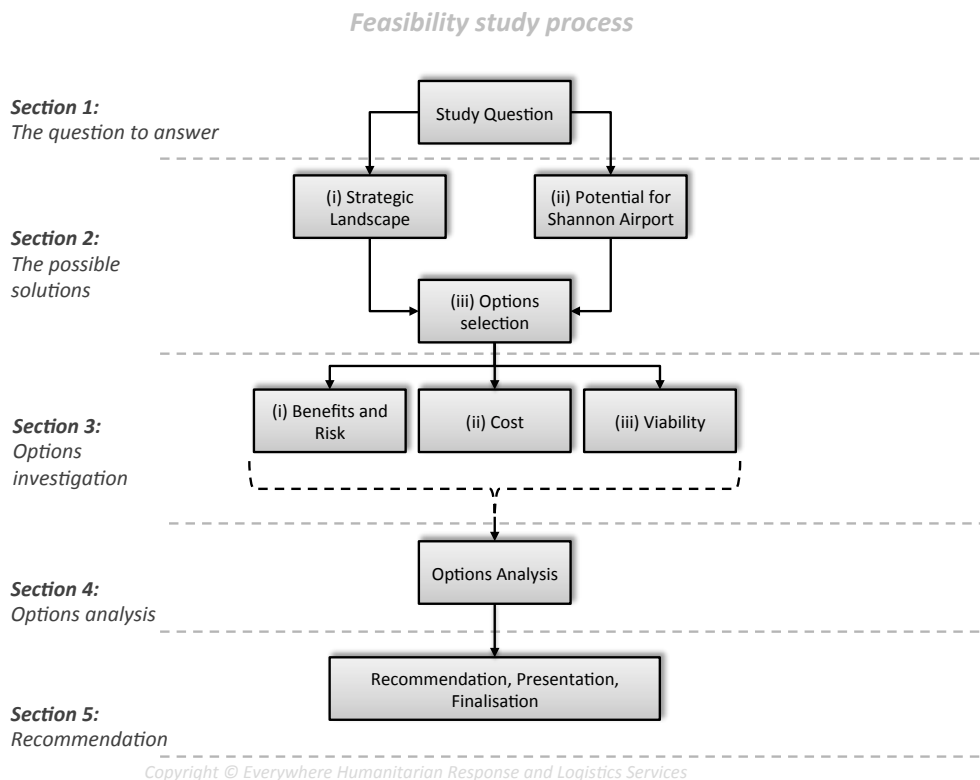
EU civil protection also shows higher viability than other roles because ECHO has not yet defined its civil protection policy direction and is exploring various options, including the potential establishment of warehousing sites – of particular interest to Shannon Airport. While the specifics are by no means decided, an EU civil protection role for Shannon Airport may potentially represent better value for money, particularly because there are no clear service providers with whom to compete.

In conclusion, it should be noted that there is little to doubt about the commitment of Shannon Airport and its various stakeholders to developing a new role for the site. Unfortunately, geography, costs, and existing structures do not make Shannon Airport an ideal location for humanitarian functions. **This study therefore recommends against further pursuit of a humanitarian role for Shannon Airport and instead advocates further focus and effort to be placed on developing the possibilities – though uncertain and potentially limited – of a role related to civil protection at the EU level.**

[ii] This study considered the EU civil protection role for Shannon Airport because: (i) the specific study objectives in the Irish Aid Terms of Reference (Appendix 1) requested an examination of a humanitarian hub in the context of the EEAS, (ii) the Minister of State for Trade and Cooperation requested the study to explore as many options as possible at the EU level, and (iii) Irish Aid listed for consultation stakeholders at EU level that specialize in civil protection.

Introduction

The purpose of a feasibility study is to identify and evaluate particular courses of action for an organisation, supported by the analysis of its benefits, costs, and risks. This report presents a study on the feasibility of the use of Shannon Airport in the global humanitarian system.

Feasibility study process

Section 1:
The question to answer

Study Question

Section 2:
The possible solutions

(i) Strategic Landscape

(ii) Potential for Shannon Airport

(iii) Options selection

Section 3:
Options investigation

(i) Benefits and Risk

(ii) Cost

(iii) Viability

Section 4:
Options analysis

Options Analysis

Section 5:
Recommendation

Recommendation, Presentation, Finalisation

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The methodology used to create the feasibility study is shown in the figure above. The report is compiled from the outputs of the individual process steps. After establishing the <u>study question</u> in section one, section two describes how the <u>possible roles for Shannon Airport</u> were selected. Section three describes the results of the <u>investigation</u> of the validity of the roles. Section four's <u>analysis</u> of these results is then used to create a <u>recommendation</u> in section five.

In completing this report 42 stakeholders were contacted from 27 different organisations, including Irish Aid, UN agencies, the EU, international humanitarian organisations, Irish NGOs, commercial entities and relevant stakeholders in the Shannon area. Appendix 7 – '*Stakeholders/Organisations consulted'* provides an overview of organisations and stakeholders consulted.

1. The question to be answered

'Is there a role for Shannon Airport and its facilities in the international humanitarian relief effort?'

This feasibility study has been commissioned by Irish Aid to address the points noted in the study terms of reference (Appendix 1) as well as answer the question noted above. This study question was jointly set after consultations with the Minister of State for Trade and Development, the Irish Aid Director General and the Irish Aid Emergency Recovery Section.

In addition to the question and the terms of reference, the feasibility study team were asked to keep in mind the following points:

- 'Please ensure that the study is broad enough so as not to be limited solely to Irish Aid activities nor to be focused only on logistics.'
- 'We would also expect your report to put forward concrete options and recommendations on how best such an outcome might be achieved.'

Important Notes

- We interpret Shannon Airport's role as an external service provider; in other words, Shannon Airport's humanitarian activities will neither be self-funded, self-directed, nor completely funded or directed by the Irish government. Rather, Shannon Airport's role would be to provide facilities and services to humanitarian actors, who would in turn choose which facilities or services to utilize. Humanitarian donors would also choose which of these facilities or services to fund.

- Humanitarian relief efforts are interpreted as encompassing the international responses (in personnel, goods, equipment, and services) to natural and complex disasters[1].

2.   Development of the possible roles for Shannon Airport

A short-list of possible roles for Shannon Airport has been created to answer the feasibility study question. This section explains how and why these roles were selected.

The possible roles for investigation have been selected in three distinct steps. First, the strategic environment has been analysed to establish what already happens and possible gaps or areas for improvement in humanitarian response. Secondly an analysis has been made of the facilities and services Shannon Airport has to offer. The third step was then to cross reference the potential gaps with the possible services to establish realistic potential roles that deserved further scrutiny.

2.1.   Strategic Landscape

This strategic landscape consists of two elements: the general environment in which services are delivered and identification of specific functions performed in the humanitarian sector.

2.1.1.   The environment in which humanitarian services are managed and delivered

This humanitarian environment is described in four main areas: the demand (needs to be fulfilled), funding (ability to meet needs), actors (who is using funding) and the trends resulting from the interaction of demand and funding. The main findings are summarized below, with Appendix 2 – '*The humanitarian environment*' providing additional information.

- Total donations for international humanitarian response are at record highs, with the bulk of donations coming from governments. Top donors have been constant for the last ten years[2].
- Yet despite record funding, the gap between met and unmet needs increased between 2007-2011, in part due to increased food and fuel costs[3]. This means a decline in "relative" funding.
- The destination of humanitarian assistance has been relatively constant, with Africa and Asia receiving the bulk of funding between 2006-2010[4].
- The decrease in relative funding and governmental budgetary concerns have increased humanitarian actors' focus on efficiency, coordination, and consolidation in order to maximize the value for money of donor funding[5].

2.1.2.   Humanitarian functions

The humanitarian relief effort is the international response (in personnel, goods, equipment, and services) to natural and complex disasters[6].

Humanitarian actors perform a variety of functions as part of this response, many of which are sourced externally[7]. In order to form a general idea of potential roles for Shannon Airport, this study examined the more common externally sourced services.

Two of these services (**headquarters and training**) are internal goals for humanitarian actors; four (**procurement, warehousing, medical supplies, and transport**) revolve around operational/supply chain issues; and a final function deals with **civil protection issues[8]**. While not specifically part of humanitarian relief, this study considered the civil protection role for Shannon Airport because: (i) the specific study objectives in the Irish Aid Terms of Reference (Appendix 1) requested an examination of a humanitarian hub in the context of the EEAS, (ii) the Minister of State for Trade and Cooperation requested the study to explore as many options as possible at the EU level, and (iii) Irish Aid listed for consultation stakeholders at EU level that specialize in civil protection.

The main findings are:

- Humanitarian organisations "outsource" functions in order to improve responsiveness to disasters and to lower costs - avoiding overhead (such as warehouse maintenance), pooling services with other humanitarian actors, and capitalizing upon the higher operating efficiencies of external providers[9].
- Humanitarian actors seek to tap into the expertise offered by external providers, improving both efficiency and effectiveness. An example is supplier relationship management[10].
- Physical locations are primarily chosen due to cost, ease of access, and proximity (distance/travel time) to disaster affected areas or utilizing organisations[11].
- The majority of externally sourced services appear to have fairly saturated markets with few substantial complaints from users. In other words, few true gaps are apparent. One possible exception is civil protection in the EU as roles, objectives and strategy are not yet formally decided upon (Interviews with UNHRD, UNICEF, OCHA, ECHO, EEAS).

Appendix 3 – '*Humanitarian functions'* addresses humanitarian functions in detail, but a brief snapshot of each is provided below.

Headquarters
The headquarters of humanitarian organisations provide support to the field, manage donor relationships, develop strategies, and house subject matter expertise such as programming, logistics, and internal business functions[12]. To house these functions, humanitarian actors need external services similar to corporate entities: office buildings with sufficient information and communication technology (ICT) resources[13].

<u>Existing Service Providers and Trends</u>
The majority of humanitarian headquarters are located in or near major donor capitals or other strategic cities.

There are little to no signs of movement in these headquarters locations. UNHRD, for example, did not envision moving its headquarters from Brindisi, UNICEF reported, "there is no need to move our headquarters. We have just invested in new facilities in Copenhagen including a state of the art training facilities."

Training/Capacity development

Regardless of size or scope, every humanitarian organisation needs quality personnel to deliver their objectives. Many organisations do not have the time, resources, expertise or appropriate facilities to provide this training and often rely on outside consultants or other humanitarian actors to provide training personnel, instruction, or locations[14].

Existing Service Providers and Trends

Three groups provide external training services: (i) commercial consultants, (ii) other humanitarian actors such as WFP (as the logistics cluster lead agency, WFP hosts Logistics Response Team scenario-based training close to the UNHRD hub in Brindisi) and (iii) academic institutions such as Fritz Institute, INSEAD in France, Lund University in Sweden and Massachusetts Institute of Technology in the USA. Trends include a push to streamline career training pipelines for humanitarian logisticians and shifting training focus from European/American regions to Africa and Asia[15].

Procurement services

Organisations need procurement expertise - including market intelligence, supplier relationships, and buying power - to source a variety of relief goods and services[16]. Smaller actors often lack capacity to effectively procure, while larger purchasers have capacity but often end up competing against other humanitarian actors. Therefore, some organisations utilize the procurement services of other humanitarian actors in exchange for a service fee[17].

Existing Service Providers and Trends

Though several others exist, four major organisations offer shared procurement services that are utilized by hundreds of actors, including NGOs, UN agencies, and Red Cross/Red Crescent National Societies. These organisations are (i) the UNHRD network, coordinated from Brindisi - Italy, (ii) IFRC and (iii) WHO in Geneva - Switzerland, and (iv) UNICEF in Copenhagen, Denmark. Within organisations and the humanitarian industry itself, procurement is being centralized, increasing market analysis and advancing supplier collaboration[18].

Warehousing/Storage

Many humanitarian actors preposition supplies close to commonly affected areas to enable faster response time and less expenditure on transportation costs. Most of these organisations use external providers to maintain relief stocks in order to avoid overhead and labour investments and to take advantage of others' inventory management expertise, lower warehousing costs, and the ability to share stocks among multiple organisations[19]. These external providers can be either commercial entities or other humanitarian actors that charge a service fee[20].

Existing Service Providers and Trends

Major shared service prepositioning warehouse networks – with stocks sufficient for hundreds of thousands of families – are maintained by the UNHRD and IFRC and are utilized by a large number of humanitarian actors. Additional organisations with stocks around the world include UNICEF, WHO, Oxfam, JICA, USAID, MSF, and AusAID. Trends for prepositioning networks demonstrate a move to sub-regional warehousing, reduction of storage in Europe, a push for self-sustainment and competition for limited funding[21].

Medical item procurement and storage

The procurement and storage of essential relief medicines is a specialized area because of the high risks involved and requirements for specific procedures such as cold chain, in the selection, procurement, distribution, storage, rational use and disposal of unfit medicines[22]. Organisations utilize external service providers for reasons similar to those described in the procurement and warehousing sections above; to lower cost and utilize external expertise, particularly in the area of quality control and assurance[23].

Existing Service Providers and Trends

WHO and ECHO have certified nine Humanitarian Procurement Centres (HPCs) specialised in buying emergency and health supplies, including medical procurement[24].

Most of the major prepositioning warehouse networks and specialized medical NGOs - IFRC, UNHRD UNICEF, MSF – have designated specific storage space for cold chain/medicine storage, generally consolidating medicine storage in one central location. For UNICEF and UNHRD this is Dubai, for MSF Bordeaux and Brussels. MSF stated that "a large number of medicines used in humanitarian response are generics and are often sourced from lower cost manufacturing sites in India and Asia." Other humanitarian organisations pointed to an increased use of vendor-managed inventory as part of stocks due to low turnover and short product life-cycle of medicines.

Transportation

To avoid costs, few humanitarian organisations own or operate their own transportation assets. Instead, these services are commercially contracted either by framework agreement or on an ad hoc basis with shippers and third party logistics providers (3PLs)[25]. Transportation needs can also be consolidated to save cost and fully utilize capacity, with larger humanitarian actors offering their contracted transportation services to smaller organisations in exchange for a service fee[26].

Existing Service Providers and Trends

Transportation services are offered by the major actors in procurement and prepositioning previously outlined (UNHRD/WFP, IFRC). Standard leaders in the 3PL industry also provide commercially contracted transportation services, for example Kuehne & Nagel, Panalpina, DHL and Chapman[27]. As with other areas, humanitarian actors are under pressure to increase efficiency and coordination, particularly with rising fuel costs. Efforts include coordination and consolidation of requests[28].

Civil Protection for EU

ECHO and the European External Action Service (EEAS) define civil protection in different ways. Whereas ECHO describes civil protection "as being a function of Civil Defence," the EEAS describes it as more a military function. The main role of civil protection within the EU is to "support and complement Member States' action at national, regional and local level. Within the European Union this includes work in the area of risk prevention, preparing civil-protection personnel and in responding to natural or man made disasters, and promoting swift, effective operational cooperation between national civil protection services; It also encompasses to promote consistency in international civil-protection work."[29]

The key instrument for European civil protection is the Civil Protection Mechanism (CPM) established in 2001 that facilitates co-operation in civil protection assistance interventions in the event of major emergencies. With 27 EU and 5 other member states, the CPM offers tools to facilitate adequate preparedness and effective disaster response at a community level.[30] Signed in 2007, the Lisbon Treaty strengthened coordination capabilities by providing a legal basis for both the mechanism and for financing or co-financing of operational costs, such as transportation of assets between cooperating countries.

Though the EU has not yet legally defined civil protection it is examining 5 areas: 1) prevention, preparedness & response, 2) information, 3) intervention, 4) post-disaster analysis and recovery and 5) community tools for civil protection[31]. The external services required for effective civil protection could be similar to many of those discussed for humanitarian actors (e.g. procurement, prepositioning and transportation) with similar considerations such as cost, expertise and proximity.

Civil protection in Ireland

Civil protection in Ireland encompasses the efforts of various organizations and functions, including police, fire services, military, health services, agriculture and other departments, to ensure people's physical well-being and protection from events such as disease, flooding, fires and unrest. Domestically, civil protection is organized and coordinated through the Department of Defence's Office of Emergency Planning. The Department of Environment, Community and Local Government, led by the National Directorate for Fire and Emergency Management, represents Ireland at EU level on various civil protection committees.

Ireland has provided some resources, such as flood management experts, in response to requests from other EU member states, though the National Directorate describes Ireland as "not a major player" relative to larger states such as Germany, France or the UK. Correspondingly, Ireland also has had less involvement at on-going EU policy discussions.

At the same time, the National Directorate is well aware of the current proposal to establish logistics hubs and co-finance stored materials and assets. However, in its estimation, such a proposal is far from certain, with many member states seeing hubs and storage of assets as either threats to the control of national assets or simply poor use of European taxpayer money.

Existing Service Providers and Trends

ECHO stated that currently civil protection assets are moved from one country to another, following the disaster requirements. In interviews, ECHO staff also mentioned that depending on scenario studies and political movement at EU, "civil protection hubs could be considered, though no political consensus is expected before 2013" and that potential room for improvement exists for training programs and exercises designed to strengthen intra-European coordination of civil protection.

2.2. Potential for Shannon Airport

As part of the data collection process, interviews were conducted with several stakeholders interested in the development of a humanitarian role for Shannon Airport, including Shannon Airport Authority, Shannon Development, Mid Western Regional Authority and Clare County Council (see Appendix 7 – *'Stakeholders/Organisations consulted'* for further details). Interviewees were asked to outline (i) the various strengths of Shannon Airport and (ii) how they thought Shannon Airport could best fit in the humanitarian response sector.

Below is a description of the characteristics that Shannon Airport has to offer. In general, Shannon Airport's strengths fall into three categories:
1) The physical facilities, services, operational capabilities and location of Shannon Airport
2) Local importance and support to Shannon Airport
3) Complementary actors/services located in the vicinity of Shannon Airport

2.2.3. Physical facilities, services, operational capabilities and location

Strengths identified for this category are:

*   Airport capacity. Shannon Airport is a well-equipped, uncongested airport with considerable unutilized capacity. In recent years, recessionary pressure and other factors have led to a 50-55% decline in both passenger and cargo traffic at Shannon Airport[32]. Therefore Shannon Airport now has significant capacity to offer to the humanitarian sector.

*   Flexibility. The Shannon Airport Authority mentioned that "Shannon Airport's runway length can accommodate almost the entire range of cargo and passenger aircrafts" and the Head of Operations and Services at Shannon Airport emphasised "that Shannon Airport can engage in airport operations 24 hours a day, 365 days a year and it has rapid refuelling capacity."

*   Easy access to several on-site maintenance services. In April 2012, the Russian firm TransAero acquired an Shannon Airport-based aircraft maintenance firm and Shannon Aerospace Ltd., a subsidiary of Lufthansa, continues to provide overhaul services to over 50 different airlines[33].

- Substantial security capabilities. The Shannon Airport Authority mentioned that "Shannon Airport has substantial security capabilities, stemming from previous arrangements facilitating US military landings." These US landings are now largely discontinued.

- Storage capacity. The Shannon Airport area has significant storage capacity, with up to 30,000 square metres available, including limited cold storage for up to 4 PMC pallets (roughly 50 square metres).

- Global location. Shannon Airport Authority stressed that:
  - Shannon Airport is located at a key midway point on transatlantic shipping routes.
  - Approximately 70% of all European aviation traffic to US uses Shannon air space.
  - Shannon Airport is located within 2 hours flying time of most major destinations in Europe.

An overview of the main characteristics of Shannon Airport is listed in the table below.

Shannon Airport capacities	
Runway Length	3,199 m
Operational hours	24h
Noise/curfew restrictions	None
Refuel Services	Hydrant and mobile refueling; 11 million gallon capacity
Warehouse facilities	30,000 sqm
Cold room storage	4 PMC pallets; +2 C to + 8 C

2.2.2   Local importance and support to Shannon Airport

Strengths identified for this category are:

- Economic impact. Shannon Airport is commonly recognized as a driver for County and regional economic development. Therefore development of additional roles, such as a humanitarian function, has substantial support from local government and economic development organisations.

- Clare County Council support. In their County Development Plan[34], Clare County Council included as a key goal that "Shannon Airport must continue to maximise its competitive advantages in terms of aviation and aviation related activity." The Clare County Manager and Director of Services at Clare County Council outlined that the County Development Plan "seeks to provide a platform to ensure the growth and development of Shannon Airport and harness its full potential." A key component of the County Development Plan is "to facilitate the economic development and expansion of Shannon International Airport to include an International Air Freight Cargo Hub and innovative initiatives such as a global logistics centre for humanitarian aid." The Development Plan is the single most important policy document for the County as it represents an agreed economic, social, cultural and environmental blueprint for the future planning, growth and development of County Clare. Development of a humanitarian role for Shannon Airport therefore not only has support but also is being actively planned for by local governments.

- Innovative image. The County Development Plan[35] further outlined that Shannon Airport has "always been innovative in maximising its strategic location, being historically renowned for transatlantic flights, the invention of duty free and, more recently, the first Customs and Border Protection located outside the USA." The Shannon Airport Authority stressed this innovativeness in outlining its willingness and flexibility to accommodate humanitarian functions at Shannon Airport.

2.2.3. Complementary actors/services located in the vicinity of Shannon Airport

Three main groups could complement a potential humanitarian role for Shannon Airport.

a) Presence of aviation services. Over half of all aircraft-leasing firms in the world are located in Shannon or Dublin[36]. Humanitarian operations often involve air cargo transport, almost entirely handled on a contracted basis. Co-located leasing firms could therefore offer potential benefits in smoothing or speeding processes for humanitarian functions in Shannon Airport.

b) Presence of third party logistics providers. Nine of the world's top ten freight forwarding organisations - TNT, DHL, UPS, FedEx, Ceva, C.H. Robinson, DB Schenker, Panalpina, and Khuene+Nagel – have offices or operations in the vicinity of Shannon Airport. Most of these organisations are already involved in facilitating logistics – including customs clearance, warehousing, transport, and freight forwarding – for humanitarian organisations (interviews with UNHRD, IFRC, UNICEF). The addition of Shannon Airport to the humanitarian support structure could be smoothed by these commercial actors.

c) Presence of commercial medicine firms. Shannon Airport is located amongst a variety of industry clusters. Interviewees like the Midwestern Regional Authority believe the Shannon Airport area brings "more than just logistics" to the table, pointing to a local concentration of medical, engineering, ICT, environmental/clean tech and universities. An extensive cluster of pharmaceutical (such as Pfizer) and biomedical facilities (such as Boston Scientific, Medtronic) are based within a short distance of Shannon Airport and could be mobilised in the event of a humanitarian incident. Partnerships between these commercial actors and humanitarian organisations already exist, particularly in the specialized field of medicines (outlined in Appendix 3 – *'Humanitarian functions'*). Therefore, many interviewees felt that clusters of relevant industries could strengthen an argument for a humanitarian role, pointing to gains from tighter coordination and shared learning.

What else should be considered?

Additional comments and considerations provided by stakeholders included the following points:

- Cost. A clear and structured mechanism for airport and storage cost would be required. Interviewees mentioned the need for flexible costing models, depending on volumes and customer usage.

- Market conformity. Shannon Airport Authority realises that costing and efficiency should be in line with common standards in the humanitarian sector and with those services currently offered by the UNHRD network, IFRC or other providers.

- Potential development of global air freight hub by Lynxs. Shannon Airport Authority mentioned that US international cargo group Lynxs has "agreed to a deal to start the process of developing a global air freight hub at Shannon Airport." Lynxs will construct a new temperature-controlled freight logistics facility at Shannon with infrastructural support from the Dublin Airport Authority. The state-of-the-art cargo facility, projected at 19,000 square metres at a cost of $15 million, is designed to bring new freight opportunities to Shannon from transport and logistics companies both in Ireland and abroad[37]. Ray Brimble, CEO of Lynxs, explained "the new venture will include chilled frozen and heated areas for cargo, which would enable Shannon to bid for more high value high volume freight business." The Lynxs initiative aims to take advantage of the airport's 2,000 acres of developable land and the various nearby real estate offerings, including business parks and office space.

2.3. Option Selection

This section addresses the following question: "Given the current environment and trends, and what Shannon Airport has to offer, what are the best options to analyse?" The below table cross-references common externally sourced humanitarian functions with the strengths that Shannon Airport brings to the table.

Shannon Airport Benefits	Facilities & Services	Operational Capabilities	Location	Local support	Complementary Actors
Humanitarian Function					
Headquarters	√			√	
Training/Capacity Building	√		√	√	√
Procurement	√			√	
Warehousing	√	√		√	√
Medical Items	√	√		√	√
Transportation	√	√		√	√
EU Civil Protection	√	√	√	√	√

The large number of humanitarian actors and functions could result in an even larger number of alternatives to explore. In order to keep this number manageable, two main rules are applied. **First, the humanitarian function should be one for which organisations tend to rely on external providers – either commercial or other humanitarian actors.** In other words, the function should not be one that most organisations consider a core-competency and therefore handle in-house. **Second, the function should be one that roughly corresponds to at least one of the three main strengths of Shannon Airport: its physical facilities and services, local importance and support or its nearby complementary partners.**

Three of the above listed functions are not included in the final analysis. Transportation is not analysed because it is largely included as part of prepositioning networks/warehouses, since network managers normally arrange transportation of clients' goods from depots to disaster sites. Headquarters and procurement are not analysed because their facility requirements (simply an office building) do not clearly match Shannon Airport's unique strengths.[iii]

Each of the below roles notes potential users, managers, and donors. It is critical to emphasize these three points, as any role for Shannon Airport and its facilities directly depends on its services actually being funded, managed and used by the humanitarian sector.

Role	Potential Users	Potential Managers	Potential Donors
1. Prepositioning of Relief Items	NGOs, UN agencies, IFRC	UNHRD, UN Agencies, NGOs, IFRC	ECHO
2. Prepositioning of Medical Items	NGOs, UN Agencies, IFRC	UNHRD, UN Agencies, NGOs, IFRC	ECHO
3. Training Centre	NGOs, Clusters, Commercial	NGOs, Cluster Lead, Academic, Commercial	ECHO
4. EU Civil Protection	ECHO	ECHO	ECHO

Role 1 - Prepositioning of Relief Items: Shannon Airport warehouse space is utilized to store humanitarian relief items that can be quickly deployed via Shannon Airport to disaster sites located either globally or in closer specific regions (Eastern Europe or North Africa). Potential users can be any humanitarian actor (as with current use of existing networks). This site can be managed as one of the existing prepositioning networks or as a new standalone location, most likely by commercial entities. Donors can be ECHO, large UN agencies, or even private organisations/individuals. Funding would be expected to establish initial operations until the location becomes self-sustaining.

Role 2 – Prepositioning Medical Items: Shannon Airport warehouse space – emphasizing cold chain storage – utilized to store medical items (pharmaceuticals, equipment) that can be quickly deployed via Shannon Airport to disaster sites located either globally or in closer specific regions (Eastern Europe or North Africa).

[iii] The case for a specific company (e.g. a 3PL) offering procurement services to humanitarian actors is a separate issue from our main question: **'Is there a role for Shannon Airport and its facilities in the international humanitarian relief effort?'**

Potential users can be any humanitarian actor that normally handles medical items in humanitarian response. This site can be managed as one of the existing prepositioning networks or as a new standalone location, most likely by commercial entities. Donors can be ECHO, large UN agencies, or private organisations/individuals. Nearby commercial pharmaceutical companies could also act as partial donors of medical items. Funding would be expected to establish initial operations until the location becomes self-sustaining.

Role 3 – Training Centre: Shannon Airport office space, hangar bays, barracks, runways and other facilities utilized for a variety of trainings from standard lectures to scenario-based engagements. Potential users can be NGOs or clusters (e.g. logistics cluster, WASH cluster) looking for joint and/or impartial training, or commercial actors looking for training as part of corporate social responsibility. Managers could be an NGO, cluster lead, neutral commercial entity, or academic institution. Donors contributing to site start-up can be ECHO, governments, or private contributors.

Role 4 – EU Civil Protection: This role envisions Shannon Airport warehouse space utilized (i) to preposition specialized civil protection gear and/or (ii) as a staging/consolidation point for civil protection personnel and equipment coming from multiple European countries and deploying to disasters globally. Equipment could include such items as chemical, biological, radiological, nuclear and explosive (CBRNE) response and clean-up gear. The potential users would be participating EU member states, ECHO could handle management, and funding would come from ECHO and/or member states[38].

It should be noted that civil protection falls outside the scope of traditional humanitarian action[39]. UN agencies participating in this study reinforced this view, reporting that civil protection was seen "as a role outside of the sphere of activity for humanitarian organisations." At EU level this role sits between ECHO and EEAS (see Appendix 3 – 'Humanitarian functions'), while in the Irish context, civil protection is outside the remit of Irish Aid, falling under the remit of the Department of Environment, Community and Local Government. As noted in section 2, this study included EU civil protection following the objectives of the ToR, requests from the Minister for Trade and Cooperation, and stakeholder selection by Irish Aid.

3   Options investigation

'What are the benefits, risks, costs and viability for each possible role?'

The possible roles have been assessed in terms of the benefits and risks, costs and viability of implementation. The results are presented in the following section.

3.1.   Benefits and Risks

The benefits and risks associated with each role for Shannon Airport and its facilities have been assessed. The table below shows how well each role fits the logic and trends and fills the gaps identified in section 2.1 and supporting appendices. In other words, it answers three questions:

- Does the role for Shannon Airport make sense given the reasoning behind that humanitarian function?
- Does the role for Shannon Airport fit into on-going trends for that function?
- Does the role for Shannon Airport help fill any gaps or contribute an added value?

This feasibility study report's authors assessed these areas using data obtained through research of the humanitarian environment and humanitarian functions (Appendices 1 and 2), the capabilities offered by Shannon Airport (section 2.2), and feedback collected from stakeholder interviews (section 3.3).

For each of the categories, a significance value of 1-5 was applied to identified risks and benefits. Since risks and benefits are essentially trade-offs, risks were subtracted from benefits and the resulting score described as a percentage of the maximum total points. A sliding scale is thus used, where a score of 100% signifies no risk and maximum benefit and a score of 0% signifies maximum risk and no benefit. Scores less than 50% signify that risks outweigh benefits, and scores greater than 50% show that benefits outweigh risks.

An explanation of the methodology and more detailed findings can be found in Appendix 4 - *'Benefit and risk Analysis.'*

Role	Overall Rating	Logic	Trend	Gap
1. Prepositioning of Relief Items	31%	30%	26%	38%
2. Prepositioning of Medical Items	39%	34%	38%	44%
3. Training Centre	53%	60%	50%	50%
4. EU Civil Protection	57%	64%	52%	56%

3.2.   Costs

Calculation of costing information for this feasibility study requires use of assumptions; for example, it is challenging to estimate storage requirements when usage volume is uncertain. However, rough data from current humanitarian activity allow an estimate of annual operating costs. For each of the proposed roles, research was conducted into the scope, scale, and cost structure of existing service providers (e.g. UNHRD for the proposed role "Prepositioning of Relief Items"). Desktop research and interviews helped establish an approximate industry average cost per unit. An estimate was then made for volume of annual activity at Shannon Airport in order to calculate end cost.

Training centre costs are highly dependent on the types and number of training sessions offered. Stakeholder interviews and desktop research provided setup costs for a training centre/centre of excellence. As a reference point and based off this research, the assumption is made here that a training centre at Shannon Airport would annually offer a mix of technical training, management courses, and scenario-based training. It is important to note that these training offerings would be made by a training provider (not Shannon Airport itself) and so operational costs would largely be covered between the training provider and participants – not Shannon Airport itself.

EU civil protection costs are also highly dependent on the types and scale of the services offered – these could range from storage of water purification equipment to prepositioning of helicopters. Nevertheless, a general approximation can be made based off figures calculated for prepositioning of relief items (role 1).

For roles 1, 2, and 4 (prepositioning of relief and medical items, EU civil protection), costs are also calculated for "deployment costs," the latter signifying the cost to actually "use" the facility in an emergency. This use is interpreted as air cargo transport to common response sites, as reported by Irish Aid (for roles 1 and 2) and ECHO (for role 4). The air cargo cost per tonne originating from Shannon Airport is measured against the air cargo cost per tonne originating from existing or potential future humanitarian/civil protection sites, giving the percentage difference between cost of Shannon Airport and cost of cheapest location.

Further details and methodologies for cost of all four roles are available in Appendix 5 – *'Cost analysis.'*

Note: Start-up costs are not included in this section of the report in order to give an indicative comparison of Shannon's potential cost with the cost of current humanitarian activities. Including start-up costs would make the comparison unfair; they are instead included in section 3.3, *Viability*.

Role	Annual operating costs
1. Prepositioning of Relief Items	$790,522
2. Prepositioning of Medical Items	$1,196,185
3. Training Centre	($1,675,458)[iv]
4. EU Civil Protection	$627,375

Air Cost per Tonne by Destination	Deployment Costs – Roles 1 and 2						
	Shannon Airport	% Difference Cheapest Option	Brindisi, Italy	Accra, Ghana	Dubai, UAE	Subang, Malaysia	Panama City, Panama
Cameroon	$2,883	337%	$2,082	**$659**	$2,641	$5,366	$5,038
Pakistan	$3,330	243%	$2,455	$4,073	**$970**	$2,838	$7,306
Myanmar	$4,800	248%	$3,940	$5,265	$2,177	**$1,380**	$8,652
Haiti	$3,317	389%	$4,379	$3,975	$6,300	$9,340	**$678**

Air Cost per Tonne by Destination	Deployment Costs – Role 4			
	Shannon Airport	% Difference Cheapest Option	Brussels, Belgium	Frankfurt, Germany	Paris, France
Cyprus	$1,911	47%	$1,438	**$1,301**	$1,466
Bosnia	$1,126	111%	$657	**$534**	$677
Hungary	$1,038	150%	$565	**$416**	$628

3.3. Viability

This study describes role viability as the combination of three variables: confidence ("Can Shannon Airport adequately perform the role?"), implementation costs ("How much investment is required for start-up of this role?"), and likelihood of use ("Will organisations use/fund Shannon Airport in this role?").

Confidence and likelihood questions were posed to three categories of stakeholders: potential users, potential managers/service providers, and potential donors. Their feedback was assigned a quantitative ranking from 1 through 5, with 1 being very weak and 5 being very strong; for example, a user ranking of 5 in likelihood signifies that user is highly likely to utilize Shannon Airport in that role.

The methodology explanation and more detailed findings (including median and mode values) can be found in Appendix 6 – '*Viability analysis.*'

Implementation costs are estimated based off existing humanitarian organisational activities, similar to operating costs in section 3.2. Further explanation is provided in Appendix 5 – '*Cost analysis.*'

[iv] All costs could largely be covered between the training provider and participants – not Shannon Airport itself.

The results are summarised in the tables below. This quantitative summary is followed by a qualitative narrative summary of stakeholder reactions to each of the proposed roles.

Confidence – "Can Shannon Airport adequately perform the role?"

Role	User average	Manager average	Donor average
1. Prepositioning of Relief Items	1.2	1	1
2. Prepositioning of Medical Items	1.1	1	1
3. Training Centre	1.6	1	2
4. EU Civil Protection	2.5	2.5	3

Implementation – "How much investment is required for start-up of this role?"

Role	Implementation costs
1. Prepositioning of Relief Items	$625,000
2. Prepositioning of Medical Items	$631,641
3. Training Centre	$83,210
4. EU Civil Protection	$378,100

Likelihood – "Will organisations use/fund Shannon Airport in this role?"

Role	User average	Manager average	Donor average
1. Prepositioning of Relief Items	1.8	1	1
2. Prepositioning of Medical Items	1.1	1	1
3. Training Centre	2.0	1	2
4. EU Civil Protection	2.5	2.5	2.5

In general, potential managers and donors did not have a clear favourable impression of the viability of Shannon Airport in any of the proposed roles, nor are they likely to utilize Shannon Airport if these roles were established. One possible exception is the EU civil protection role, in part due to ECHO acknowledging that its own policy and direction in this area is still to be defined. Potential users were slightly more optimistic and many noted that they would be more likely to utilize Shannon Airport in such areas as prepositioning or training "if someone else was paying."

Note: Implementation costs for prepositioning and EU civil protection roles assume that setup will involve use of existing warehouse space. Setup costs do not include cost of supplies. Training centre implementation costs do not reflect other potential funding requirements such as ICT wiring or refurbishment of buildings used for scenario-based training. More detailed costing will require further detailing of the specific requirement and formal quotes from commercial service providers.

3.3.1. Narrative summary of stakeholder reactions to proposed roles

3.3.1.1 Prepositioning of Relief Items

Contacted NGOs regularly used or had at least some experience with the UNHRD prepositioning system. These organisations had largely good things to say about their UNHRD interaction, mentioning a few isolated incidents.

Among those NGOs utilizing Irish Aid stocks in the UNHRD system, two had concerns that other NGOs dictated what types of items Irish Aid held at the depots, while another two were generally quite satisfied, noting that though they "do not have a direct say in what is stocked, Irish Aid is learning what we need and generally has it available." In general, all NGOs appreciated the UNHRD depots' proximity to common disaster sites and the flexibility to be able to share stocks among different UNHRD users.

None of the interviewed NGOs saw a clear rationale – beyond media exposure for Ireland – for using Shannon Airport as a prepositioning site. Pointing to the high transportation costs of flying items from Shannon Airport to Africa or Asia, one NGO stated that the idea "doesn't make sense." Several of the interviewees stated they would be unlikely to use a site at Shannon Airport over an existing hub like Dubai that will have cheaper transport costs, both outgoing (to disaster sites) and incoming (restocking from suppliers, many of which are based in Asia). One NGO said that it would use a potential site at Shannon Airport, but only if Irish Aid or another donor paid for the transport costs. This NGO noted though that in the long run, Irish Aid funding of these transport costs would result in less total funds available for the humanitarian relief effort – a disservice to beneficiary populations.

Similar to the NGOs, UN agencies like UNICEF, WFP, UNHCR, and WHO did not see any logic in locating a prepositioning site in Shannon Airport, again noting the prohibitive cost of air transport and the preference for pre-existing network sites. What little gaps were noted largely pertained to geographic coverage of Southeast Asia. Therefore, none of these organisations expressed any interest in using Shannon Airport in this capacity. OCHA did not "see real value in the use of Shannon" and stated it generally advised other organisations to utilize the UNHRD network.

The UNHRD system expressly stated that it "could not see a role for Shannon within its network." Along with the above-mentioned concerns, UNHRD noted that in 2006 Irish Aid requested it open a small warehouse in the military camp of Curragh, storing approximately 14-16 metric tonnes of relief items. After a few years of non-stock rotation and non-operations the site was closed due to cost (low turnover meant low revenue from service fees). It is interesting to note that the Brindisi depot (South Italy), the first established UNHRD depot, is changing focus from physical warehousing to training, procurement, and overall UNHRD coordination.

This shift away from physical warehousing reflects similar considerations of low turnover and a preference for more forward based sites. IFRC, managers of another depot network, also stated they saw no potential use for a prepositioning site at Shannon Airport.

ECHO expressed the same thoughts as other organisations, pointing to Shannon Airport's distance from populations commonly affected by disasters. Moreover, ECHO was fairly emphatic in that its funding of the international humanitarian relief effort was looking to reduce fragmentation and improving coordination. In particular, ECHO stated that, "above all, we want to avoid duplication and use existing capacity – there is no need to reinvent the wheel." ECHO continued by saying, "for Shannon to be involved in a humanitarian network it requires a big partner such as WFP, IFRC, Oxfam or others, but not ECHO."

ECHO has provided start-up funding for two large prepositioning networks (UNHRD and IFRC) that it now expects to become self-sustaining. It is therefore unlikely for ECHO to fund the establishment of an additional hub, particularly one that may not be able to sustain itself.

3.3.1.2 Prepositioning of Medical Items

NGOs, UN agencies, and IFRC personnel all pointed to increasing consolidation in the emergency medical area, primarily due to cost, complexity, and required bureaucracy (e.g. inspections, customs approval). In general this meant a reduction in the number of agencies involved in medical relief and the use of existing networks such as cold chain storage at UNHRD, IFRC, UNICEF, or MSF sites. Most importantly, several interviewees were not convinced that prepositioning of medical items was as attractive a concept as the prepositioning of other relief items. Medical stocks in actual storage represented the minimum necessary to cover the initial stages of response, with the majority of supplies then flowing direct from pre-approved medical companies. Humanitarian actors preferred such "virtual stocks" and vendor-arrangements due to the storage cost and short product lifecycle of medicines; in other words, it is easier and cheaper to flow goods from suppliers when turnover of these expiring items is low or variable (not every emergency requires medicine). Interviewees were not enthusiastic about adding a node to the existing stockpile network.

Potential users and network managers in general disagreed with the notion that proximity to Irish medical companies gave Shannon Airport an advantage. The majority of medicines utilized for international humanitarian relief - primarily intended to treat malaria, sleeping sickness, and water-borne illnesses - are made in generic format and are sourced from China and India. Interviewees doubted the ability or willingness of high-end Irish medical companies to compete with the generic manufacturers, and generally did not believe their organisations would utilize Shannon Airport in this capacity. Further complicating medical storage were various requirements for certification and customs arrangement. As one NGO stated, "Supplying medicines/drugs is too complicated to get involved in. There is no need for more drug procurement [or staging]." Potential donors echoed these sentiments.

3.3.1.3 Training Centre

Three of the organisations surveyed used the e-learning training provided by the Fritz Institute/Certified Institute of Logistics and Transport (CILT) and the training events organised by WFP at the UNHRD in Brindisi such as the Logistics Response Team training (LRT). The LRT training in Brindisi was particularly valued because of its links to the logistics cluster, of which several organisations were supportive. A few organisations stated they often handled staff training as in-house and on-the-job in order to save money.

NGOs had a significantly higher opinion of the potential role of Shannon Airport as a training centre, though this opinion was still somewhat cautious. Possible training could include emergency logistics, gender-based violence, UN cluster training, or experts delivering regular lectures/courses. The two main criteria for use of Shannon Airport in this role were a) training had to be relevant, and b) funding had to be available, either externally or internally. One interviewee suggested his organisation would be more likely to use Shannon Airport if some sort of "exception visa" could be used to ease international participant travel in and out of Shannon Airport. As a disadvantage, NGOs noted that Shannon Airport training only made sense for European personnel, and that Shannon Airport was poorly connected to regular transit routes, even in Ireland.

UN agencies were not enthusiastic about a training centre role for Shannon, with many preferring to use existing training options (e.g. Fritz, WFP training in Brindisi) or handle training internally. UNICEF noted that it was building a training and innovation centre at Copenhagen – modelled on the UNHRD location in Brindisi – to provide a range of classroom and simulation logistics training. In other areas of training, such as procurement, agencies are pushing to conduct training at the regional and country level in order to better develop partner capacity. IFRC, for its part, has a similar focus on the development of National Societies, and did not express an interest in use of Shannon Airport as a training site.

ECHO noted that it was always supportive of training and capacity development, but that it is no longer providing regular, annual funding to support organisations' training budgets. As for a training role at Shannon, ECHO stated that training location was not as important as training content and also expressed its opinion that "there already are plenty of training sites." Any training offered at Shannon Airport would have to be relevant and provide a value-added.

3.3.1.4 EU Civil Protection

ECHO envisages civil protection as tasks being performed "by the civil defence capabilities of member states." This is distinctive from the EEAS and their view of civil protection as tasks being performed by military assets of member states[40].

ECHO defines the role of civil protection at EU level as "facilitating coordination of assets, teams and means within and outside the EU."[41]

This coordinated activity will involve deployment of people and expert teams in response to emergency, natural disasters, manmade disasters, disease and threats. The exploration of civil protection at the EU level has raised the question "Does ECHO expand or add capacity to the UNHRD network to accommodate civil protection, or develop a parallel network?" These options are yet undecided.

Currently, the EU is engaging in discussions over possible caveats in EU legislation that will develop future roles and financing arrangements for civil protection activities. EU civil protection is in its infancy and most member states "are not yet fully on board" with civil protection. However ECHO has indicated that "if legislation is adopted it will define the implementing rules and will identify who pays." civil protection is at the core of an EU debate over roles and responsibilities and ECHO has said that "there is not yet a political consensus for a formal role and a mechanism for assets to be deployed, this requires a political decision which has not been talked through."

While the coordination role and activities are still to be defined, the EU stated that for now, civil protection assets are moved from one country to another depending on the requirements of the disaster. In the future, member states may instead pre-position equipment close/proximity to common disaster areas, though this is not yet certain.

ECHO was receptive to further exploring Shannon Airport, but noted that "Shannon must provide irresistible factors to attract ECHO." On the downside, presently a feeling exists within ECHO that "Irish civil protection may not be geared for EU level of proposed interaction, as there are no natural flows of civil protection assets in Ireland." ECHO's impressions is that the current offering of Irish civil protection assets is more related to use of Irish Military assets. As other EU member states are making strong pitches for warehousing facilities for civil protection, ECHO suggests "that Ireland gets involved in the conversation on civil protection and support the idea at EU council."

4 Options analysis

'What are the main issues to consider for each role option?'

Based off findings from the options investigation, the following section analyses each role's main advantages and drawbacks in relation to the case question. The summary results are shown in the below table:

	Risk / Benefit	Operate Cost	Viability						
			Confidence (1-5)			Implement Cost[v]	Likelihood of Use (1-5)		
			User	Mgr	Donor		User	Mgr	Donor
1. Prepositioning of Relief Items	31%	$790,522	1.2	1	1	$625,000	1.8	1	1
2. Prepositioning of Medical Items	39%	$1,196,185	1.1	1	1	$631,641	1.1	1	1
3. Training Centre	53%	$1,675,458[vi]	1.6	1	2	$83,210	2.0	1	2
4. EU Civil Protection	57%	$627,375	2.5	2.5	3	$312,500	2.5	2.5	2.5

4.1. Role 1: Prepositioning of Relief Items

It is estimated that this role only delivers 31% of potential benefits, making it the least attractive option for Shannon Airport and its facilities. The main advantages of this role would be:

- A prepositioning node would have relatively unrestricted use of a high capacity airport located in a supportive local environment.
- The Shannon Airport location would mean higher visibility for Ireland in the humanitarian aid sector – though it should be noted that this study has evaluated Shannon Airport's potential roles in terms of benefits/risks for the *international humanitarian relief effort*, not necessarily for any particular country or actor.

On the other hand, the shortcomings are:

- Almost every actor sees Shannon Airport's distance from the most common disaster response sites as a disqualifying factor (greater time, distance, cost) for prepositioning of supplies, regardless of facility qualities; features such as runway length, maintenance, and refuelling are seen as "order qualifiers" or assumed characteristics of any major airfield.

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[v] Implementation costs for prepositioning and EU civil protection roles assume that setup will involve use of existing warehouse space. Setup costs do not include cost of supplies. Training centre implementation costs do not reflect other potential funding requirements such as ICT wiring or refurbishment of buildings used for scenario-based training. More detailed costing will require further detailing of the specific requirement and formal quotes from commercial service providers.

[vi] All costs could largely be covered between the training provider and participants – not Shannon Airport itself.

- With low confidence (1-1.2) and likelihood of use (1-1.8), and high implementation costs ($625,000), potential humanitarian users, managers, and donors do not regard Shannon Airport as an ideal site for this role and are unlikely to use/fund it in the future. They prefer instead to concentrate on existing networks.
- As seen in section 3.2, deployment costs are not competitive, with air cargo costs ranging from 243% to 389% more expensive than the cheapest existing alternative.
- Implementation costs are also second most expensive, affecting its viability.

Putting costs in perspective

In response to the 2010 Haiti earthquake a major international humanitarian organization provided a standard five-person family package of blankets, hygiene kits, mosquito nets, and other items with a total cost of around $170. Using this figure, Shannon Airport's estimated start-up and annual operating costs represent 3,676 and 4,650 family kits respectively.

Air transport from Shannon Airport costs an estimated 389% more than transport from the most cost efficient location, Panama. Using an estimate of 170 tonnes (the figure provided by Irish Aid to the Haiti response out of its UNHRD stocks), the additional cost of using Shannon Airport represents the equivalent of 2,639 family kits.

In total, start-up and just one year of operation of Shannon Airport as a prepositioning site with a response to an operation such as the Haiti earthquake would cost the equivalent of aid to nearly 11,000 families, or 55,000 people. Therefore, funding for Shannon Airport as a prepositioning site could have a much larger impact when applied elsewhere, such as the existing prepositioning networks.

	Costs	Family kit equivalent	People assisted equivalent
Start-up	$625,000	3,676	18,380
Annual operating	$790,522	4,650	23,250
Transport Shannon	$563,890		
Transport Panama	$115,260		
Transport difference	$448,630	2,639	13,195
TOTAL		10,965	54,825

The key implications in deciding on this role are:
- With low turnover and hence low service fees, a prepositioning site at Shannon Airport is unlikely to be self-sustaining and would therefore require regular donor funding.
- Expenditure on prepositioning at Shannon Airport is unlikely to lead to gains in efficiency or cost effectiveness; rather, in an environment of tightened relative funding, it will lead to an overall lower humanitarian response capability, with less money available for more efficient/effective prepositioning networks.

4.2.   Role 2: Prepositioning of Medical Items

It is estimated that this role only delivers 39% of potential benefits making it the second least attractive option for Shannon Airport and its facilities. The main advantages of this role would be:

- A prepositioning node would have relatively unrestricted use of a high capacity airport located in a supportive local environment.
- Shannon Airport's proximity to medical industry leaders could improve supplier collaboration.

On the other hand, the shortcomings are:

- Shannon Airport's distance from the most common disaster response sites remains an inhibiting factor, as does its distance from existing suppliers of humanitarian actors that deal with medical items.
- With low confidence (1-1.1) and likelihood of use (1-1.1), potential humanitarian users, managers, and donors do not regard Shannon Airport as an ideal site for this role and are unlikely to use/fund it in the future. While these survey results are in part due to the fact that many stakeholders do not normally deal with medical items, those that do specialize in medical relief prefer instead to concentrate on existing networks.
- More importantly, potential users and network managers are increasingly utilizing framework agreements and "virtual stocks" in place of physically prepositioned stocks due to high cost and low turnover.
- Annual operating costs for this role make it the most expensive option, considering that role 3's operating costs can be borne by external parties. High storage costs make alternative arrangements, such as vendor managed inventory, more attractive. The perspective on cost outlined in section 4.1, noting that funds can be more usefully spent elsewhere, applies even more so with respect to the prepositioning of medical items.
- Two thirds of all medicines are generic and supplied by China and India directly to affected sites, largely negating the potential advantages of Shannon Airport's proximity to Irish medical companies.
- Supplying medicines to humanitarian organisations requires certification (WHO/ECHO), adding time and cost to implementation.
- As seen in section 3.2, deployment costs are not competitive, with air cargo costs ranging from 243% to 389% more expensive than the cheapest existing alternative.

The key implications in deciding on this role are:

- With low turnover and hence low service fees, the prepositioning of medical items at Shannon Airport is unlikely to be self-sustaining and would therefore require regular donor funding.
- Shannon Airport would need to be certified as a HPC before any medical supplies will be accepted by WHO.

- Expenditure on prepositioning at Shannon Airport is unlikely to lead to gains in efficiency or cost-effectiveness; rather, in an environment of tightened relative funding, it will lead to an overall lower humanitarian response capability, with less money available for more efficient/effective prepositioning networks.

4.3. Role 3: Training Centre

It is estimated that the benefits outweigh the risks of this role (53% benefit), but only marginally. The main advantages of this role would be:

- A neutral training centre at Shannon Airport could appeal to a wide variety of humanitarian actors, including NGOS, UN agencies, clusters, and others.
- While these training options would not necessarily take advantage of the explicit aviation services offered by Shannon Airport, they would benefit from ample room and flexibility (such as in hangars and runways) as well as the controlled environment offered by an airport (e.g. set perimeters, security).
- The training provider and/or participants will largely cover annual expenses, potentially making this role the least expensive option.
- EU is examining training requirements for volunteer corps, which may provide additional attractiveness for Shannon Airport as training centre.
- Depending on the training manager, services can be offered on an ad-hoc basis, making this role attractive to those reluctant to be locked into funding commitments.

On the other hand, the shortcomings are:

- Many humanitarian actors see Shannon Airport's distance from major commercial traffic routes as inconvenient for participant travel.
- Shannon Airport's location seems redundant to established training centres in Europe and counter to trends of greater focus on local training in Africa and Asia.
- Beyond the physical space and control offered by the airport, training courses would not utilize the aviation related capabilities of Shannon Airport, meaning the airport does not present a clear and unique value proposition.
- Though amongst the three specifically humanitarian options a training centre role has the highest likelihood of use/funding (1-2.0), this likelihood is still quite low overall. Many existing humanitarian training providers/managers do not regard Shannon Airport as an ideal site for this role and it does not appear there is large interest or available funding for another training location or centre of excellence.
- This lack of interest in turn may make it difficult to attract a training provider to utilize and market Shannon Airport to potential training participants.

The key implications in deciding on this role are:

- Establishment of a training centre at Shannon Airport would require an entity – either humanitarian or commercial entity – to host training services and attract participants (paying customers).

- Stakeholders for the development of a humanitarian role for Shannon Airport would need to focus their efforts in attracting an external training provider to use the airport.
- Start-up costs (e.g. investment in ICT) would require internal investment at Shannon Airport or external funding. Operational costs for training would largely be borne by training participants and their host organisations. Because potential client organisations do not currently show large eagerness for training services at Shannon Airport, some annual costs would need to be covered. It is unclear what organisation – within or outside of Ireland – would be willing to cover these annual costs. ECHO, for example, views regular training funds as the responsibility of organisations themselves. Therefore, the long term sustainability of a training centre at Shannon Airport is questionable.

4.4. Role 4: EU Civil Protection

It is estimated that this role delivers 57% of possible benefits, making it the most attractive option for Shannon Airport and its facilities. However, it should be noted that within the Irish context civil protection falls outside of the remit of Irish Aid and is located within the Department of Environment, Community and Local Government[42]. Within the humanitarian space, civil protection is seen as being outside of the function of humanitarian organisations[43]. Nevertheless, the main advantages of this role would be:

- A prepositioning civil protection node would have relatively unrestricted use of a secure, high capacity airport located in a supportive local environment with co-located 3PLs, offering increased responsiveness and flexibility over more congested alternatives in Europe.
- Shannon Airport's peripheral, neutral location can offer benefits for certain scenarios such as political disputes, contamination of high density population areas on Continent.
- This role has the highest ratings for confidence (2.5-3) and likelihood of use (2.5), in part because ECHO has not yet defined its policy direction in the civil protection area. At the very least, room exists for further exploration of this role.
- This role has the second lowest start-up costs ($378,100), strengthening its viability.
- Annual operating costs ($627,000) are potentially the second lowest of all four options.

On the other hand, the shortcomings are:
- Travel to Shannon Airport's peripheral location might be inconvenient or costly for Member State civil protection units
- Shannon Airport's location makes its deployment costs to common EU civil protection sites 47% to 150% more expensive than other potential sites.
- While ECHO's on-going clarification of its civil protection policy allows room for a possible role for Shannon Airport, it can also easily leave room for non-Shannon Airport alternatives: ad-hoc arrangements or warehousing in other member states more deeply involved in EU civil protection policy decision-making.

The key implications in deciding on this role are:

- A civil protection site at Shannon Airport is unlikely to be self-sustaining and will therefore require regular donor funding.
- Establishment of a civil protection site at Shannon Airport will require greater Irish political involvement in policy decision-making and advocacy efforts at ECHO and EU levels.

5   Recommendation

'What is the best role, if any, for Shannon Airport?'

This feasibility study addresses the question: **'Is there a role for Shannon Airport and its facilities in the international humanitarian relief effort?'**

Four of the most likely roles were considered for Shannon Airport. Two of these roles relate to prepositioning of humanitarian relief or medical items. These roles, frankly put, do not add value to the international humanitarian relief effort. Despite Shannon Airport's inherent qualities, its location far away from likely disaster sites does not fit into the humanitarian sector's logic and trends that seek to minimize travel time and cost during responses to natural and man-made disasters. Nor, on the medical side, does it reflect trends of consolidation and minimization of on-hand physical stock. Costs of setting up and implementing these roles are also significant and likely to require sustained funding from donors for many years to come. Shannon Airport would also present significantly higher transportation costs than existing sites.

For these and other reasons potential donors, users and managers were quite explicit in stating their lack of interest in Shannon Airport as a humanitarian prepositioning site. Shannon Airport does not present a superior alternative to existing sites and trends and is unlikely to be funded or used in a humanitarian prepositioning function. **This study therefore recommends against the development of roles 1 and 2.** It is advised that stakeholders' intent on establishing a humanitarian role for Shannon Airport move away from a logistics-centric approach.

Role 3, Shannon Airport as a training centre, ranked slightly higher than the prepositioning roles. As a neutral site with capabilities similar to those offered by the centre of excellence in Brindisi, Shannon Airport does present certain strengths as a potential training site. It potentially is also the cheapest of the four considered options. Yet a lot of uncertainty surrounds this role: what types of training would be offered to whom by whom and who would fund? Donor and user interest in this role, though slightly higher than the prepositioning options, is nevertheless fairly limited.

Shannon Airport would find itself in the uncomfortable position of marketing Shannon Airport to a training provider who in turn would market its services to potential training participants, all in an environment of low demand and lack of clarity on services required.

Furthermore, training providers like the UNHRD in Brindisi, UNICEF in Copenhagen, and academic institutions already exist as competitors and Shannon Airport does not appear to offer a clear unique service provision for training that distinguishes itself amongst this field.

While it is true that the humanitarian industry would certainly benefit from clearer career paths and training opportunities for its staff, it is not clear that humanitarian actors favour establishment of more training sites or instead prefer refinement or expansion of existing training institutions to historically underserved regional and local areas in Africa and Asia.

At any rate, in an environment of tightening and consolidating efforts, attracting training providers and participants to a new site would be difficult. If Shannon Airport must be utilized in a humanitarian role, a training centre is more feasible than a humanitarian prepositioning site. **Ultimately, however, this study did not find strong arguments to recommend role 3 and therefore does not presently see a role for Shannon Airport that adds clear value to the international humanitarian relief effort.**

However, this study does provide a potential opening for role 4, EU civil protection.
As noted, civil protection does not specifically fall under the remit of humanitarian relief, but was still considered as part of this study. A portion of the attractiveness of role 4 is due to the fact that the EU has not yet made decisions regarding civil protection policy, including the funding and establishment of a "civil protection hub." Shannon Airport has several clear strengths for performing future potential functions in this field. For example, its peripheral, neutral location could be highly useful for certain types of responses to the European Continent while its high flexibility and lack of congestion might strengthen its case relative to other sites such as Frankfurt or Paris. Perhaps most importantly, the potential user and donor (ECHO) is open to further exploring and discussing this role for Shannon Airport depending upon policy decisions that should be made by the end of 2013. **In short, though still uncertain, role 4 presents the most viable choice and this study therefore recommends Shannon Airport focus its efforts to explore the full potential of its role in EU civil protection.**

Follow-on actions for this role include:
- Coordinate Irish Government internal stakeholders to consolidate needs, resources and strategy, such as the Department of the Environment, Community and Local Government.
- Active Irish Government involvement at EU level for civil protection policy making.
- Active marketing of Shannon Airport and facilities as civil protection centre at EU level.

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