



THE ABS
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A COMMON IT BASED PERMIT APPLICATIONS AND MONITORING SYSTEM IN KENYA FOR ACCESS TO GENETIC RESOURCES AND BENEFIT SHARING (ABS)

Business Requirements Document Final Report

December, 2017



National Commission for Science,
Technology and Innovation

FOREWARD

The Government of Kenya (GOK) is currently implementing Vision 2030, the country's development blueprint covering the period 2008 to 2030. The aim of Vision 2030 is to transform Kenya into a newly industrialized middle-income country, providing high quality of life to all its citizens by the year 2030. This Vision 2030 aspires for a country with high quality Research and Development (R & D) services and facilities to promote research related services within Kenya. In this regard The Kenyan Government recognizes and appreciates the technical and financial support offered by the multi-donor ABS Initiative, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, to actualize this process and fully supports the country's Research and Development agenda particularly as relates to Access and Benefit Sharing (ABS). This arrangement will therefore, offer an opportunity for the country to attract more researchers to come and carry-out their research in Kenya, thus promoting our Research and Development facilities in Kenya while at the same time enable the country realize the financial benefits that accompany Research and Development

The Government of Kenya is, therefore, committed to providing an enabling environment for Access and Benefit Sharing by having a strong political will, robust legal and institutional framework, as well as strengthening public sector capabilities to effectively and successfully implement R & D projects.

Previous research related to R & D have occurred without a specific policy, legal and regulatory framework for ABS. As a result, most of these research permits, have taken longer time to be prepared and approved, while key realization regarding benefits (financial or otherwise) of the research to GOK have been lost. In addition, there has also been uncertainty about the legal processes by which permits and contracts should be negotiated and approved. With increased momentum of delivering Vision 2030 flagship projects, there is renewed interest in the realization of ABS IT system by various Government institutions.

The development and implementation of the ABS IT Online system is seen as the first step by The Government of Kenya in addressing the constraints and challenges faced by researchers when applying for research permits in Kenya and also actualization of Research and Development benefits to Kenya. The Kenya Government, therefore, looks forward to closer collaboration between ABS Initiative and the stakeholder Government institutions to realize this very noble objective.

PROFESSOR. JUDY WAKHUNGU, OGW

CABINET SECRETARY, ENVIRONMENT AND NATURAL RESOURCES

PREFACE

The Nagoya Protocol on Access to Genetic Resources and the fair equitable Sharing of Benefits arising from their Utilization is a supplementary agreement to the Convention on Biological Diversity (CBD) and Nagoya Protocol. It provides a transparent legal framework for the effective implementation of the objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources thereby contributing to the conservation and sustainable use of biodiversity. The CBD entered into force on 12 October 2014, 90 days after the date of deposit of the fiftieth instrument of ratification.

Kenya has sovereign rights over the genetic resources found within its' territory. When benefits arise from research or development on these genetic resources, including when it leads to the commercial use of a developed product, these benefits should be shared fairly and equitably with The Kenyan Government which has not been the case due to lack of regulation before 2006, insufficient enforcement and compliance with the ASB Regulations, or ineffective ABS contracts, the return of benefits remains low until today.

Both Foreign and local researchers working with genetic resources and associated data will now require greater attention since the Nagoya Protocol on Access and Benefit Sharing (ABS) came into force in October 2014. Researchers must now ensure that they have legal clarity in how they can and cannot use the Kenyan genetic resources on which they carry out research. Not only must they work within the spirit in the Convention on Biological Diversity (CBD) but also they may have legal and regulatory, requirements to meet. Although the Nagoya Protocol was negotiated and agreed globally, it is the responsibility of the Kenyan Government to introduce its' individual implementing procedures and practices

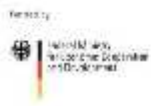
Streamlining permitting on access to genetic resources and associated information, utilization and equitable sharing of resultant benefits is one of the key components of Aichi Target 16, which is an indicator for the global progress to implement the Nagoya Protocol.

Nagoya Protocol article 6 on access to genetic resources obliges parties to establish domestic legislations, policies and institutional arrangement for access procedures, aiming at granting Prior Informed Consent (PIC). The frameworks should have legal clarity and certainty, simple with no arbitrary rules

This report is a first step towards development of a software system that will lead to a harmonized permitting platform; enhance efficiency and service delivery and encouraging transparency, monitoring and compliance therefore promoting related R&D in Kenya.

About the multi donor ABS Initiative

The ABS Initiative aims to contribute to poverty reduction, food security, technology transfer, social development including equity and rights, and biodiversity conservation through implementing the Nagoya Protocol (NP) on ABS and the third objective of the Convention on Biological Diversity (CBD) in its entirety. Established in 2006, the ABS Initiative is implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and currently funded by the governments of Germany and Norway, the Institut de la Francophonie pour le développement durable (IFDD) and the 11th European Development Fund (through the ACP-EU Partnership Agreement).



ACKNOWLEDGEMENTS

A lot of dedicated effort and commitment has gone into the development of this Business Requirements Document (BRD). We therefore wish to take this opportunity to express our gratitude to The Kenyan Government, The Ministry of Environment and Natural Resources, all key institution stakeholders (DVS, KALRO, KEFRI, KENTRADE, KEPHIS, KFS, KWS, NACOSTI, NBA, NEMA, NMK and UoN.) for their effective participation and involvement. We wish to particularly recognize and acknowledge the core team members, led by the Environment Principal Secretary Charles Sunkuli; Director General NEMA Prof. Geoffrey Wahungu, David Ongare, Abednego Marube, Jane Nyandika, Beatrice Chebet, Joseph Masinde, Diana Mbugua, Joyce Imende and Teddy Lenga of NEMA; Dr. Esther Kimani, Simeon Kibet, Dr. Isaac Macharia, James Aboge, Pamela Kibwage, Bernard Odanga, Jared Onsando and Ricky Ruttoh of KEPHIS; Kitili Mbathi, Julius Kimani, Dr Samuel Kasiki, Dr Thadeus Obari, Lucy Mwita, Dr. Francis Gakuya, Michael Odhiambo, Mukonyi, Kabaka Watai, Priscillar Mutungi, Grace Naitore and Peter Maina of KWS; Emilio Mugo, Jamleck Ndambiri, James Mwang'ombe and Joseph Kamau of KFS; Dr. Moses Rugutt, Godfrey Kalerwa, Dr. Benson Mburu, Cyrus Kamau, Teresia Nyawira and Komen Chepkonga of NACOSTI; Dr. Kisa Juma Ngeiywa, Dr. Obadiah Njagi and Dr. Naftaly Mwaniki of DVS; Dr. Mzalendo Kibunja, Prof. Mary Gikungu and Dr. Taita Terer of NMK; Amos Wangora, Daniel Kiange, John Mbithi and Danson Maina of KENTRADE; Prof. Peter Mbithi, Prof Gideon Nyamasyo of UoN; Dr. Eliud Kireger, Dr. Felister Makini and Dr. Desterios Nyamongo of KALRO; Dr. Ben Chikamai and Dr. William Omondi of KEFRI; Dr. Willy Tonui, Prof. Dorrington Ogoyi and Josphat Muchiri of NBA and Dr. Erustus Kanga and Jane Otieno from the Ministry of Environment and Natural Resources for their unwavering commitment and teamwork.

Special thanks go to the Cabinet Secretary for Environment and Natural Resources, Professor Judy Wakhungu, OGW, for her leadership and support in the development of the BRD. We specifically thank her for mapping out the strategic direction for the Ministry in order to effectively execute its mandate of coordinating Research and Development as regards to Nagoya protocol specifically Access and Benefit Sharing. In the same breath, we also wish to thank all the heads of Ministry Directorates for their invaluable contribution and unwavering support to the development of this BRD.

We would also like to further extend our appreciation to multi-donor ABS Initiative, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, for their invaluable support. We particularly wish to recognize the ABS Initiative Capacity and GIZ Country Office Nairobi for the financial, technical and logistical support they provided to the Ministry of Environment and NEMA during the workshops held to prepare the BRD as well as its publication.

Last but not least, we acknowledge Dr. Hartmut Meyer and Dr. Paul Oldham of ABS Initiative for their facilitative role and expert services provided during the preparation of this BRD and Dr.

Salesio Kiura, Jonathan Sangoro, Sammy Nyasente, Jecton Tocho and Anthony Ahuya of AMBAND for all the work put in to develop this Business Requirements Document.

EXECUTIVE SUMMARY

The ABS Initiative was tasked by its donors and the African steering committee to focus on African partner countries to support them in the implementation of the Nagoya Protocol and further development of the domestic ABS systems. Kenya was chosen to be one of the partner countries in the current work plan of the ABS Initiative which runs from April 2015 to March 2018.

An initial country assessment was done in September 2015 and a resultant work plan for Kenya was adopted in April 2016. One major element of the work plan is the development of a one-stop IT-based online portal to manage ABS applications and permits and to enable Kenyan authorities to perform a targeted monitoring of the utilisation of Kenyan genetic resources and associated knowledge by national and foreign researchers. Researchers planning to carry out research in Kenya or with material from Kenya must seek research permits from NACOSTI, KWS, KFS and other designated national resource providers. For certain types of research with genetic resources and associated traditional knowledge, an ABS permit by NEMA is required. This ABS permit is evidence that the researchers and the resource providers have entered into Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT). Moreover, in specific cases, an export permit is required and other agencies such as KEFRI, KEPHIS, DVS, and KWS export licensing office are involved. There is a certain level of cooperation in the administration of permits, particularly where a permit is required from one authority before another authority is able to grant a permit. A shared online system would increase compliance with the Kenyan ABS regulations, reduce duplication of effort, reduce the workload for authorities, improve the quality of service to applicants, and finally facilitate research and development as basis for any benefit sharing.

As the first phase of developing the IT online system, AMBAND was contracted by GIZ Country Office Nairobi to come up with a Business Requirements Document and a System Requirements Specification (SRS) to enable development and testing of the system. The process has involved identification of NEMA, KWS, KFS, KEPHIS and NACOSTI core permit processes, detailed study and analysis of current processes (As-Is), and design of the To-Be processes flow. This was done in a participative and inclusive manner through consultative meetings and workshops. Other players that were also brought in the project include KALRO, DVS, and the National Museums of Kenya (NMK), UoN, NBA and KEFRI. Various documents generated were shared with all the relevant shareholders who have given invaluable input.

As a result of the exercise, the involved Government stakeholder institutions and the consultants propose an integrated and web based ABS system to support the permit application processes. The consultants as well benchmarked with KENTRADE (specifically the Trade Net system). Valuable lessons were captured from KENTRADE's recent implementation of the single window automated system.

Based on the findings in this study, this report captures specific proposals for a web based ABS automated system at these organizations. A detailed Software Requirements Specification (SRS)

document has been prepared. Moreover, detailed software design diagrams have been developed in the form of: process flow narrations, context diagrams, document flow diagrams, use case diagrams, swim lanes and flow charts. These outputs form a solid basis for moving to the next step of development, testing and implementation of a web based integrated ABS system that will greatly enhance permit process operational efficiency.

ABBREVIATIONS AND ACRONYMS

ABS	Access and Benefit Sharing
ABS-CH	Access and Benefit Sharing Clearing House
BIP	Biological Import Permit
BPR	Business Process Reengineering
BRD	Business Requirement Document
CBD	Convention on Biological Diversity
CNA	Competent National Authority
DFD	Document Flow Diagram
DFD	Data Flow Diagram
DG	Director General
DVS	Directorate of Veterinary Services
ECS	Electronic Certification System
EIA	Environment Impact Assessment
EMCA	Environmental Management and Coordination Act
ERD	Entity Relationship Diagram
FP	Focal Point
GOK	Government of Kenya
ICT	Information and Communication Technology
IT	Information Technology
KALRO	Kenya Agricultural and Livestock Research Organization
KEFRI	Kenya Forestry Research Institute
KENTRADE	Kenya Trade Network Agency
KEPHIS	Kenya Plant Health Inspectorate Service
KFS	Kenya Forest Service
KSTCIE	Kenya Standing Technical Committee on Imports and Exports
KWS	Kenya Wildlife Service
MAT	Mutually Agreed Terms
MTA	Materials Transfer Agreement

NACOSTI	National Commission for Science, Technology and Innovation
NBA	National Biosafety Authority
NEMA	National Environment Management Authority
NMK	National Museums of Kenya
ORIS	Online Research Information System
PA	Publishing Authority
PIC	Prior Informed Consent
PIP	Prohibited Import Permit
PIQRS	Plant Import and Quarantine Regulatory system
R & D	Research and Development
SMS	Short Messaging Service
SRS	Software Requirements Specification
TBD	To Be Decided
UoN	University of Nairobi

Table of Contents

ACKNOWLEDGEMENTS	5
EXECUTIVE SUMMARY	7
ABBREVIATIONS AND ACRONYMS.....	9
1.0 BACKGROUND	14
1.1 Introduction.....	14
1.1.1 Convention on Biological Diversity (CBD)	14
1.1.2 Nagoya Protocol	15
1.2 Online Portal for ABS.....	20
1.3 Problem Statement.....	21
1.4 Justification for development of the ABS permitting portal.....	21
1.5 Objectives of the current Analysis.....	24
1.6 The Assignment.....	25
1.7 Methodology	25
2.0 CURRENT PERMITTING PROCESS IN EACH ORGANIZATION (“AS-IS”)	29
2.1. Laws and Institutional Mandates (Acts of Parliament).....	29
2.1.1 Kenya Wildlife Service (KWS)	29
2.1.2 National Environment Management Authority (NEMA)	30
2.1.3 Kenya Forest Service (KFS).....	31
2.1.4 The Kenya Plant Health Inspectorate Service (KEPHIS)	32
2.1.5 The National Commission for Science, Technology and Innovation (NACOSTI)	32
2.2. Narrative of NEMA AS-IS	35
2.3. Document Flow Diagram.....	37
2.4. Context Diagram	38
2.5. Data Flow Diagram.....	39
2.6. Swim Lanes.....	40
2.7. Use cases.....	41
2.8. Narrative of KWS AS-IS	44
2.9. Document Flow Diagram.....	48
2.10. Context Diagram	49
2.11. Data Flow Diagram.....	50
2.12. Swim Lanes.....	51

2.13.	Use cases.....	52
2.14.	Narrative of KFS AS-IS.....	57
2.15.	Document Flow Diagram.....	59
2.16.	Context Diagram.....	60
2.17.	Data Flow Diagram.....	61
2.18.	Swim Lanes.....	62
2.19.	Use cases.....	63
2.20.	Narrative of NACOSTI AS-IS	65
2.21.	Document Flow Diagram.....	67
2.22.	Context Diagram.....	68
2.23.	Data Flow Diagram.....	69
2.24.	Swim Lanes.....	70
2.25.	Use cases.....	71
2.26.	Narrative of KEPHIS AS-IS	74
2.27.	Document Flow Diagram.....	79
2.28.	Context Diagram.....	80
2.29.	Data Flow Diagram.....	81
2.30.	Swim Lanes.....	82
2.31.	Use cases.....	83
3.	ANALYSIS OF AS-IS.....	87
3.1.	Activity Based Analysis of the Processes.....	87
3.2.	Administrative Improvements	88
3.3.	Departmental Self-Assessment.....	88
3.3.1.	Staffing.....	89
3.4	Other research institutions.....	89
4.	DESIGN of TO-BE SCENARIO	90
4.1.	PROPOSED ABS PORTAL PROCESSES: DESCRIPTION OF THE GENERAL FLOW	90
4.2.	PROPOSED FLOW CHART DESCRIPTION.....	101
4.3	RESEARCH APPLICATION PROCESS STAGES	110
5.	BENCHMARKING AND CHANGE MANAGEMENT	114
5.1.	Ken Trade Single window system summary.....	114

5.2.	Benchmarking Guide at KENTRADE	115
5.3.	Benchmarking Exercise	115
5.4	Change Management – Lessons Learnt	117
6.	FIRST CEO’s BREAKFAST MEETING	118
7.	CONCLUSION AND RECOMMENDATIONS	119
7.1	Conclusion	119
7.2	Recommendation.....	120
7.3	Summary of the Steering Committee Meeting on 5thMay 2017.....	122
8.	APPENDICES	124
8.1	Software Requirements Specification	124

1.0 BACKGROUND

1.1 Introduction

Kenya is a signatory to various international treaties and conventions among them the Convention on Biological Diversity as well as the Nagoya protocol. Kenya's rich heritage is known world over especially for the advanced tourists attractions, natural resources, host to the big five, etc.

Kenya's efforts in natural resources and biodiversity conservation, management utilization are anchored in law in the Kenyan constitution that recognizes the importance of the environment and natural resources.

As a signatory to the international conventions, Kenya has a responsibility to manage her national processes and activities which may threaten biological diversity, regardless of where their effects occur. Further to that Kenya is also obligated to co-operate in the implementation of the Convention, particularly on matters of mutual interest. As national action plans, Kenya is implementing the conventions and treaties through national strategies, plans and programs, integration of conservation and sustainable use of biodiversity into plans, programs and policies across sectors such as agriculture, forestry, wildlife, etc.

This current work is especially anchored in the details of the convention on biological diversity and the Nagoya protocol.

1.1.1 Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) is an international agreement (negotiated under the guidance of the United Nations) adopted at the Earth Summit, in Rio de Janeiro, in 1992. It has three main objectives:

- to promote the conservation of biodiversity
- to use its components in a sustainable way
- to share fairly and equitably the benefits arising from the use of genetic resources.

As one of the most widely ratified international treaties on environmental issues it has generated an enormous amount of interest in biodiversity, both in developed and developing countries. Biodiversity is now seen as a critically important environment and development issue.

The CBD addresses measures geared towards identification, understanding and monitoring of biological diversity and the impacts on it. Part of these efforts relate to research and that is why research in Kenya is regulated and the current work has an objective to support researchers in a transparent and certain process as they adhere to the acts, mandates and legal notices in the established institutions they require research permits/ certificates from.

1.1.2 Nagoya Protocol

To further advance the implementation of the third objective, the World Summit on Sustainable Development (Johannesburg, September 2002) called for the negotiation of an international regime, within the framework of the Convention, to promote and safeguard the fair and equitable sharing of benefits arising from the utilisation of genetic resources. The Convention's Conference of the Parties responded at its seventh meeting, in 2004, by mandating its Ad Hoc Open-ended Working Group on Access and Benefit-sharing to elaborate and negotiate an international regime on access to genetic resources and benefit-sharing in order to effectively implement Articles 15 (Access to Genetic Resources) and 8(j) (Traditional Knowledge) of the Convention and its three objectives.

After six years of negotiation, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity was adopted at the tenth meeting of the Conference of the Parties on 29 October 2010, in Nagoya, Japan.

The Protocol significantly advances the Convention's third objective by providing a strong basis for greater legal certainty and transparency for both providers and users of genetic resources. Specific obligations to support compliance with domestic legislation or regulatory requirements of the Party providing genetic resources and contractual obligations reflected in mutually agreed terms are a significant innovation of the Protocol. These compliance provisions as well as provisions establishing more predictable conditions for access to genetic resources will contribute to ensuring the sharing of benefits when genetic resources leave a Party providing genetic resources. In addition, the Protocol's provisions on access to traditional knowledge held by indigenous and local communities when it is associated with genetic resources will strengthen the ability of these communities to benefit from the use of their knowledge, innovations and practices.

By promoting the use of genetic resources and associated traditional knowledge, and by strengthening the opportunities for fair and equitable sharing of benefits from their use, the Protocol will create incentives to conserve biological diversity, sustainably use its components, and further enhance the contribution of biological diversity to sustainable development and human well-being.

Finally Nagoya Protocol **article 6** on access to genetic resources obliges parties to establish domestic legislations, policies and institutional arrangement for access procedures, aiming at granting Prior Informed Consent (PIC). The frameworks should have legal clarity and certainty, simple with no arbitrary rules.

Nagoya Protocol Institutional Arrangements

The Nagoya Protocol gives effects to CBD (**article 15**) and its objectives, specifically on equitable share of the resultant benefit of utilization to support conservation and sustainability. The focus of Nagoya protocol is on R&D as seen from its objectives and definition of terms and scope.

It gives effect on access to genetic resources and associated knowledge and calls for streamlining access procedures (**article 6**). This is through effective domestic legislations, policy and institutional arrangements. The interpretations are subject to domestic measures of each country. The domestic measures should have legal clarity and certainty with clear institutional roles and responsibilities. Therefore, R&D value chain needs to be well defined from access, research, development and market to benefit sharing thus clear institution placement at each point with clear mandate. There are about four to five institutional arrangements in Nagoya, key being National Focal Point (NFP), Competent National authorities (CNA) (**article 1**), ABS clearing house (**article 14**), Checkpoints points (**article 17**), Compliance (**article 30**), and further Publishing Authority. Some of these have clear functionalities as defined in the protocol but Parties need to designate them according to their domestic situations for effective implementation.

In some countries all these functions are within the ministries, while in other countries they have been domesticated through Agencies and others through Independent Institutions as set out in respective laws. Kenya does not have a substantive ABS law but there are arrangements which may not have been consultatively informed but have been working and can be improved. Some guidance have been provided in CBD, Nagoya Protocol, IUCN explanatory guidelines, and the AU-ABS guidelines. Further guidelines can be obtained from various countries' domestic measures such as the EU-ABS law, Brazil ABS law, Ethiopia ABS law, and Costa Rica ABS law among others.

Currently in Kenya there is no clear legal framework that has established substantive ABS laws which have been passed by an act of parliament, this means that currently the relevant institutions that issue permits operate on a grey area. The said permitting institutions issue permits in regards to powers conferred to them by Acts of parliament that formed them, mandates stated within the constitution as regards to them, legal notices etc.

INSTITUTIONAL ARRANGEMENTS IN KENYA AND THEIR FUNCTIONS

Table 1: Institutional Arrangements in Kenya and their functions

Institutional designation	Definition and Functions	Institutional arrangement in Kenya	Comments
National Focal Point (NFP)	<p>Defined in article 13</p> <ul style="list-style-type: none"> -Link with secretariat -Guidance on criteria and procedure for PIC and MAT in the country -Guidance on relevant competent authorities for genetic resources and indigenous communities -accreditation on access and publishing rights on ABS-CH -Link/and control to ABS-CH 	PS Ministry of Environment.	<p>No Current domestic measures defining the roles and functions in Kenya.</p> <ul style="list-style-type: none"> -This is a technical office -In some countries its hosted under Ministry of environment, or its in National Environment Agency -In Agencies responsible for genetic resources -Sometime this is combined with Competent National authority as one function
Competent National Authority(ies)	<p>This can be one or many depending mandate and responsibility in genetic resource management</p> <ul style="list-style-type: none"> -Competent Authority (ies) at National and Competent Authorities for IPLCs. -For granting access permits, PIC, MAT <p>More than one allowed depending on Nature of genetic resources e.g. protected area.</p>	NEMA.	<p>-Currently Kenya does not have a domestic legislation policy defining these institutional arrangements. It is assumed as the old legal notice 160 of 2006. Some country's designated protected area systems and IPLC competent authorities to grant PIC and MAT while Access permit is granted by NFP.</p> <p>In Kenya KWS, KFS, IPLC qualify for CNA as guided in the ABS toolkit and KALRO Gene Bank qualify for CNA on annex 1 species under FAO treaty</p> <p>Legal Notice mentions lead agency as one that grants PIC MAT and MTA. Lead agency should be equivalent to Competent National Authority.</p> <p>The current institutional Permits are not clearly realigned to access permit. For example Wildlife Act permit granted as evidence of PIC and MAT can easily pass as an access permit and its' recognized by an Act of parliament. Need to review and establish clear flow chat defined under the Act of parliament for legal clarity.</p>

Institutional designation	Definition and Functions	Institutional arrangement in Kenya	Comments
ABS-Clearing house	One ABS-CH article 14 Guidance on responsibilities given and link with NFP and Competent National Authorities and stakeholders. -Information portal -share country information on ABS -information by parties on implementation of the protocol	NEMA	-Positioning or designation on relevancy may be subject to stakeholders. Should it be at Ministry or NEMA?
Publishing Authority (PA)	This did not feature much in Protocol but came out from party discussions and where countries' have designated PA as quality control to information that goes to ABS-CH	NEMA	This needs to be assigned to institution /agency separate from the ABS-CH Also a committee
Checkpoints	Established as per article 17. For monitoring the utilization of genetic resources in Kenya as per PIC and MAT	The following have been designated – KIPI, KEPHIS, KFS, NMK, KWS	No domestic measures in the country. Although roles and functions of the current checkpoints are not anchored in law. Guidance for check points has been given in AU and IUCN explanatory notes including Nagoya –They can be many as possible. Regulatory –NEMA, KWS, KFS, NACOSTI, GERR, KEPHIS, KEBS, NRF, KEFRI, University graduate/IP, KRA, NBA
Compliance	This established under COP in line with article 30 but necessary at party level for example users have established Compliance and enforcement /due diligence measures/ checkpoints	N/A	Must Be established.

These are the key issues linking these institutional arrangements with IT Based online permitting is roles and functions.

1.2 Online Portal for ABS

The ABS Initiative was tasked by its donors and the African steering committee to focus on African partner countries to support them in the implementation of the Nagoya Protocol and the further development of the domestic ABS systems. Kenya was chosen to be one of the partner countries in the current work plan of the ABS Initiative which runs from April 2015 to March 2018.

In collaboration and with authorization of the Kenyan Government and Ministry of Environment and Natural Resources the ABS Initiative team conducted a **country assessment** and convened a **first workshop with NEMA, KWS and other ABS stakeholders in September 2015** in Nairobi to develop a work plan for Kenya. During a **second workshop in April 2016**, the work plan was adapted and refined. It was decided that one major element of the work plan should be the **development of a one-stop IT-based online portal** to manage ABS applications and permits and to enable Kenyan authorities to perform a targeted compliance and monitoring of the utilisation of Kenyan genetic resources and associated knowledge by national and foreign users.

In **August 2016**, IT specialists and permit officers from NEMA, NACOSTI, KWS, KFS and KEPHIS met with the ABS Initiative team in Nairobi to discuss **concrete steps towards the creation of the online portal**. Researchers planning to carry out research involving genetic material and associated traditional knowledge from Kenya must seek research permits from at least NACOSTI. In specific cases, an ABS permit and export permits are needed as well. In practice, there is a certain level of cooperation in the administration of permits, particularly where a permit is required from one authority before another authority is able to grant a permit. Nevertheless, there was consensus that a **shared online system would increase compliance with the Kenyan ABS regulations, reduce duplication of effort, reduce the workload for authorities, improve the quality of service to applicants, and finally facilitate research and development as basis for any benefit sharing while at the same time enforce compliance and monitoring of the issued permits**.

It was agreed that the first step to the realization of the entire project is development of a Business Requirements Document (BRD) to capture the current permit issuance scenario as well as propose a model that can inform the development of the online portal. Further, the workshop agreed that the contractors would work under the lead of NEMA in close cooperation with the other authorities.

The Business Requirement Document (BRD) is the first phase of the development of a one-stop IT-based portal to administer and monitor applications for access permits. The online portal is required to ensure the process meets the requirements by the Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006 and associated relevant permits issued by other Kenyan institutions.

1.3 Problem Statement

Researchers planning to carry out research involving genetic material and associated traditional knowledge from Kenya must seek research license from at least NACOSTI. In specific cases, an ABS permit and export permits are needed as well. Several independent government institutions (each with its' own mandate, laws, policy, acts and legal policies) are involved in the permitting process at different level. Whereas there is a certain level of cooperation in the administration of permits, particularly where a permit is required from one authority before another authority is able to grant a permit, the various institutions largely operate independently (in silos) thus lacking co-ordination and clear communication structure. A researcher is therefore faced with a situation whereby he/she needs to visit multiple offices, make multiple applications and with uncertainty await for longer periods of time before getting a requisite research permit. In some cases, a researcher who unknowingly fails to have applied and gotten a permit from one agency is forced to cut short a phase of the research since he/she must then secure the missing permit before proceeding.

Frustrations to researchers serve to discourage research, relocation of research project funds to other destinations, making Kenyan researchers uncompetitive (from longer periods taken) and in some cases illegal transfer of genetic resources taking place. In some cases, Kenya has lost benefits arising from the use of genetic resources collected in Kenya. Examples include: Soda Lake microbes from Lake Bogoria, and others. Moreover, there is duplication of research efforts since there is no single window portal of research in Kenya that would serve as a reference point in monitoring what research is being carried out where and what genetic resources or associated knowledge are being accessed.

After research permits have been issued there are no mechanisms to enforce compliance and to allow for monitoring of the issued permits. This is due to lack of policies and laws in place to regulate research.

Kenya lacks an online central electronic research permit and monitoring system to facilitate national implementation of access, benefit sharing, monitoring and reporting provisions of the Nagoya Protocol on Access to Genetic Resources and the fair and equitable sharing of benefits arising from their utilization. Instead each stakeholder is operating solo creating various stop shops for research permits, which has led to confusion and frustration of researchers due to the back and forth between the different institutions involved in granting permits.

1.4 Justification for development of the ABS permitting portal

The Kenyan constitution 2010 in chapter 5 (Land and Environment) specifically part 2 (Environment and Natural Resources) in article 69 covers the obligation of the state in respect of the environment (see the article as captioned in the table 1 below.). The current efforts in Kenya towards a system that fosters certainty, transparency and clarity in the access and use of genetic resources are founded in this law.

Table 2: Article 69 of Kenyan Constitution, 2010

Kenyan Constitution article 69
<p>69. (1) The State shall—</p> <p>(a) ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;</p> <p>(b) work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya;</p> <p>(c) protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;</p> <p>(d) encourage public participation in the management, protection and conservation of the environment;</p> <p>(e) protect genetic resources and biological diversity;</p> <p>(f) establish systems of environmental impact assessment, environmental audit and monitoring of the environment;</p> <p>(g) eliminate processes and activities that are likely to endanger the environment; and</p> <p>(h) Utilize the environment and natural resources for the benefit of the people of Kenya.</p> <p>(2) Every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.</p>

As a country Kenya stands to gain by having a system that facilitates national implementation of the access, benefits sharing, monitoring and reporting provisions of the Nagoya protocol. These efforts are in line with Kenya's vision 2030, the global Sustainable Development Goals (SDGs) and other mid-term targets in environment management and conservation.

Genetic resources are our heritage with a great economic impact as benefits are shared. The benefits include enhancing Research and Development (R&D), technology transfer, capacity building and trainings of researchers as well as prevention of bio-piracy. An example to demonstrate the prospects of bio prospecting is the Kenya Wildlife Service – Novozymes Partnership.

In May 2007, the Kenya Wildlife Service and Novozymes entered into a five year partnership for the collection, identification, and characterization of microorganisms from Kenya's national parks. The agreement grew out of pre-CBD collections that Novozymes received, and their subsequent efforts to address the absence of an agreement associated with these collections after they led to the development of a commercial product, Pulpzyme. Pulpzyme reduces the amount of chlorine needed to bleach wood pulp (Odhiambo, 2007¹). It remains unclear who collected the samples, or where, and they may have been the result of a staff person collecting while on holiday, a practice common in the years prior to the CBD. Within the company's database, however, the country of origin – Kenya - was clear. It was assumed that collections took place in a protected area, and thus under the management of KWS, so the company approached KWS to reach an agreement. Commercial sales of Pulpzyme have been modest, but Novozymes sought to

¹ Odhiambo, Zablon. 2007. Kenya signs deal to exploit microbial goldmine. Science and Development Network, 5 July 2007.

develop a benefit-sharing agreement for proceeds from this product in order to “make things straight... in the spirit of the CBD” (Ole Kirk, Novozymes, pers comm., 2007). A deal was negotiated to pay an accumulated royalty on past sales (the exact amount is not available), and running royalties on any future sales, as well as to build a new partnership around microorganism collection, identification, and characterization. Novozymes will train Kenyan students in taxonomy, isolation and identification of microorganisms, and will transfer advanced technology to Kenya, including knowledge of how to collect and isolate micro-organisms and how to characterize microbial diversity. The new agreement also grants Novozymes “rights on similar terms to commercially make use of specific strains isolated in Kenya which are already in Novozymes’ possession.” (Novozymes/KWS press release, 2007). The 2007 Novozymes-KWS agreement did not result from a particular interest in bioprospecting partnerships in the region on the part of Novozymes, and instead resulted from commercialization of much earlier collections, and a desire to negotiate a benefit-sharing agreement. However, the microbial diversity available in Kenya is of interest to the company, which stands to benefit from access to novel genetic resources. It is the case, however, that the company is not as dependent upon collections from nature as it was even 10 years ago. Advances in science and technology, in particular genomic science, have made it possible to access the enormous biodiversity in Denmark alone, and most of their products derive from Danish biodiversity. The company also has access to increasing numbers of genomes placed in the public domain (on average, one new microbial genome is published a week), and they are able to generate ‘artificial evolution’ and “diversity” in the laboratory (Ole Kirk, pers. comm., 2007).

From this case, it is clear the importance of having PIC and MAT (negotiated contract) in the research process. As a country we could have lost benefits before and there is a chance to lose even more.

There have been several efforts to support implementation of the Nagoya protocol in Kenya. One output of those efforts and processes is the ABS toolkit. This toolkit documents the requisite process for accessing the Genetic resources in Kenya. The ABS toolkit document identifies some ABS challenges in Kenya such as: that individuals have trouble while seeking to access the genetic resources or the associated knowledge for research or commercial purposes due to various licenses/permits issued in the country by various government institutions. In most instances one does not know where to start and end or get information on requirements of obtaining such licenses/permits. The toolkit further lists the following as some general challenges from the ABS permitting process: uncoordinated ABS legal framework; lack of ABS policy framework, and lack of awareness on the existing ABS Regulations among the various stakeholders.

The Government of Kenya in collaboration with The Ministry of Environment and Natural Resources and the relevant national institutions (initially bringing together with NEMA NACOSTI, KWS, KFS, KEPHIS, DVS, NMK, UoN, KALRO, NBA and KEFRI set out a major agenda of work being to develop an online portal that will act as a one stop window for

application, processing and reporting on research related to access of genetic resources. As a first step towards the system, the current work has developed a business requirements document with financial, technical and logistical support from ABS Initiative and GiZ Country Office in Nairobi. This work has achieved, among other achievements:

- Collection of all necessary information and documents required by the relevant institutions from the applicant
- Documentation of progression of permitting procedures by institutions
- Facilitation of information sharing among relevant institutions
- Modeling of a proposed system to support issuance of permits to the applicant and monitoring the permitted access, research and export.

1.5 Objectives of the current Analysis

The BRD provides a thorough description of what the ABS Online IT system should do to meet the permitting procedures of the institutions involved, the rationale behind the decision to develop the Online IT system and the high-level factors that impact the ability of the organization to develop and deploy the Online IT system. The BRD will synthesize input from all relevant institutions involved by analyzing their current business processes to provide a technology-neutral description of what the ABS Online IT system to be developed should do. To communicate this, the BRD is based on IT concepts and approaches including data flow or process diagrams that illustrate how the current state, or “As-Is”, processes occur, as well as high level diagrams that show how the future state will operate, “To-Be”.

The Government of Kenya in collaboration with The Ministry of Environment and Natural Resources with support from ABS Initiative and working with biodiversity/ bio prospecting experts and ICT managers of NEMA NACOSTI, KWS, KFS, KEPHIS, DVS, NMK, UoN, KALRO, NBA and KEFRI undertook the analysis with the following objectives:

1. Carrying out an in-depth analysis of relevant institutions’ current workflows and processes
2. Comparing the permit processes in various institutions
3. Develop (or to model) an integrated permit administration process (a single model workflow process acceptable by all the different relevant institutions).
4. Benchmark with other government agencies operating on one stop platforms such as the Kenya National Electronic Single Window System.
5. Prepare a Business Requirements Document (BRD) and Software Requirements Specification (SRS) document

1.6 The Assignment

Government stakeholder institutions and the consultants facilitated development of the BRD in an inclusive and participatory process. Workshops with relevant government stakeholders were held to get input on their entire permit application processes.

Specifically, the development of the BRD involved:

1. Analysis and interpretation of the permitting processes
2. Permit systems comparative analysis across all involved institutions
3. Identify processes to be redesigned/reengineered (BPR)
4. Preparation of the Business Requirement Document (BRD) with baseline data on current ICT systems in the relevant institutions, proposed model of a single window permitting system, etc.

1.7 Methodology

To carry out the task, the consultants approached the task using a process framework in the same way such frameworks are used to manage a Business Process Re-engineering task. The following steps are standard in such an exercise:

Step 1: Identify core Business Processes



Core processes are those that are key to organizational effectiveness, provide value to clients and establish a competitive advantage. Within the permit framework of NEMA, KWS, KFS, NACOSTI, KEPHIS, DVS, NMK, NBA, KEFRI, UoN and KALRO work and mandate, several key permit processes were mapped.

Step 2: Study As-Is

Once the core permit processes were identified, the project team mapped the current way of working into a process map. This is called the “AS-IS” process. The purpose of *as-is-process-map* was to gain an understanding of the quality and efficiency of current operations and the existing performance. The benefits of this mapping include:

- i. Development of a common understanding of the current processes

- ii. Description of the inputs, sequence (work flow) of steps, hand-offs/transfers, approvals, people, technology, and business rules involved in producing permits
- iii. Identification of opportunities for improvement
- iv. Creation of a “baseline” of measures (e.g., process time, costs, resources, etc.) that describe current permit process performance
- v. Identification of the gaps between expected permit process needs and current performance
- vi. Identification of parts of the current permit processes that are not adding value from the NEMA, KWS, KFS, NACOSTI, KEPHIS, DVS, NMK, NBA, UoN and KALRO perspective

Step 3: Analyze As-Is

With the current processes mapped, the team focussed on determining the baseline and possible improvement opportunities. The baseline of the as-is process was determined through:

- i. Process time analysis – determining how much time each step in the process takes including time in between steps due to system requirements.
- ii. Approvals and handoffs – assessing the number and purpose of the approvals and hand-offs (such payment and interaction with the different organizations in permit application process)
- iii. Value-added analysis – assessing the process from stakeholders’ perspective i.e. what are the values added activities for which NEMA, KWS, KFS, NACOSTI, KEPHIS, DVS, NMK, NBA, KEFRI and KALRO are to invest in.
- iv. Benchmarking – we compared current performance with “peers” e.g. KENTRADE. A comparative study of experiences at KENTRADE with recommendations as shared in the validation and below was done.

The last step in the analysis phase was to validate the as-is process model with stakeholder groups as was done during the project teams retreat at Maanzoni Lodge.

Step 4: Design To-Be

When conducting Business Process Re-engineering it was important to stay focused on the goal, i.e. improving the processes, making them more efficient and effective. The result of the process reengineering has been conceptualization of an integrated web based ABS system to support NEMA, KWS, KFS, NACOSTI, KEPHIS, DVS, NMK, NBA, UoN, KEFRI and KALRO permit application processes.

Step 5: Test and communicate

Communicating changes and indicators of change to the way permit application process is to be done in NEMA, KWS, KFS, NACOSTI, KEPHIS, KEFRI, DVS, NMK, NBA, UoN and KALRO (i.e. managing change) was an integral part of the task. AMBAND facilitated the process such that the envisioned changes are clear to all NEMA, KWS, KFS, NACOSTI, KEPHIS, DVS, NMK, NBA, UoN, KEFRI and KALRO staff so that the implied changes to the job design are incorporated into the overall change implementation.

Re-Engineering Model

To carry out the above methodological approach, the consultants used the widely accepted CONDOR Business Process Re-engineering Model (figure 1). In the Condor business process re-engineering model, re-engineering is a complex process that involves not only technical but also human and organizational aspects. The model proposes a multi-view methodology. In this model once NEMA, KWS, KFS, NACOSTI, KEPHIS, DVS, KEFRI, NMK, NBA, UoN and KALRO have committed to permit process change, innovative use of IT and human resources are used as enablers. Empirical evidence based on the model emphasizes the importance of addressing BPR implementation within the broader context of organizational change in a complex socio technical environment. This model is an eight (8) stage approach that depicts BPR as a cycle of successive steps. The steps are:

1. Stage 1: Develop Business Vision and Process
2. Stage 2: Understand existing processes.
3. Stage 3: Identify Processes for Re-design.
4. Stage 4: Identify Change Levers.
5. Stage 5: Implement the new processes.
6. Stage 6: Operationalize new processes

AMBAND expects that post this task, this will be the second phase of the project which is the actual realization of the ABS system.

7. Stage 7: Evaluate the new processes
8. Stage 8: Plan for and execute ongoing continuous improvement

The condor business process re-engineering model is summarized in the Figure below:

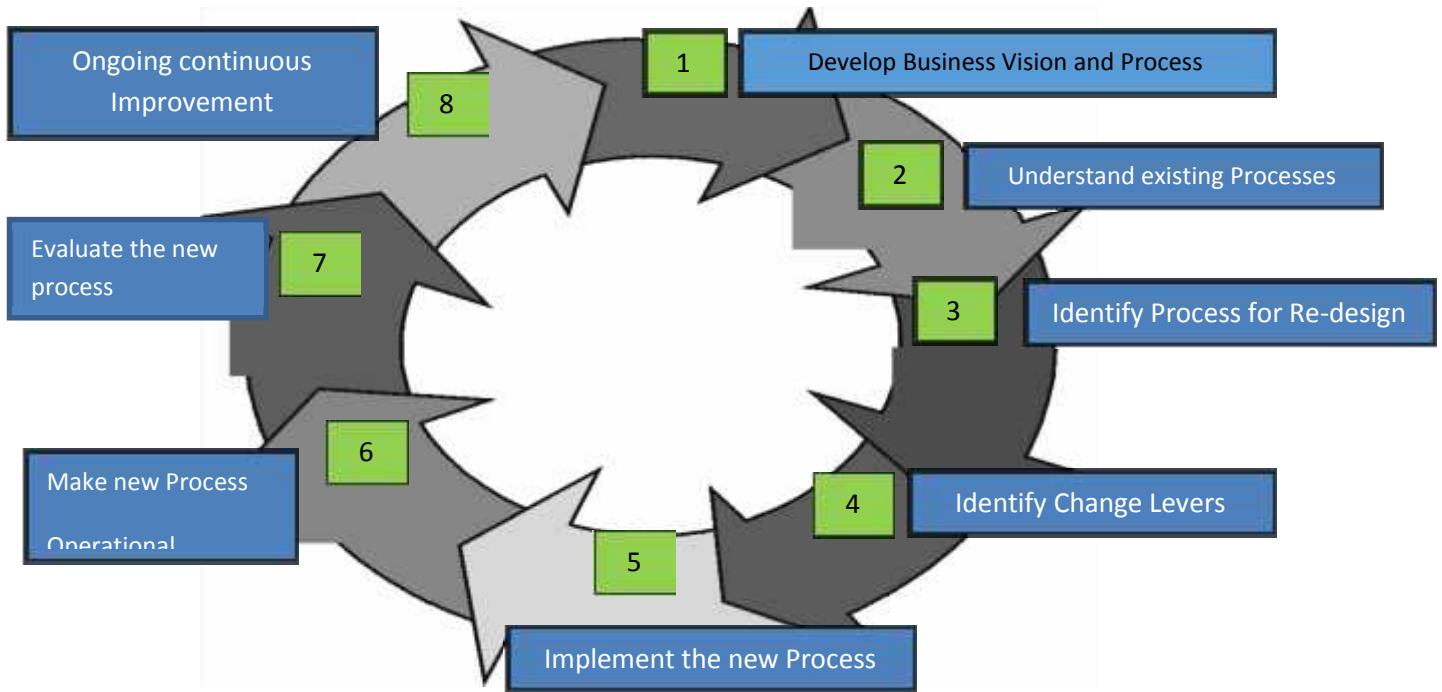


Figure 1 Condor business process re-engineering model

2.0 CURRENT PERMITTING PROCESS IN EACH ORGANIZATION (“AS-IS”)

This was done through consultations with NEMA, KWS, KFS, NACOSTI and KEPHIS. During this step, the project team was taken through the permit application process of all the involved institutions. As a result the following were developed: A narration detailing the current processes, a document flow diagram, a context diagram of the processes, data flow diagrams, use cases and Swim lanes that depict the activities, processes and the actors involved.

2.1. Laws and Institutional Mandates (Acts of Parliament)

2.1.1 Kenya Wildlife Service (KWS)

The Kenya Wildlife Service (KWS) is established under section 6 of the Wildlife Conservation and Management Act, 2013. Among the nineteen functions of KWS listed under section 7 of the Act, there are those functions that relate to aspects relevant to the Nagoya protocol and these include:

- promote or undertake commercial and other activities for the purpose of achieving sustainable wildlife conservation;
- develop mechanisms for benefit sharing with communities living in wildlife areas;
- conduct and co-ordinate, all research activities in the field of wildlife conservation and management and ensure application of research findings in conservation planning, implementation and decision making;
- grant permits;
- monitor the compliance of terms and conditions of licenses;

Under section 22, the act covers matters relating to bio-prospecting. Specifically the Act empowers KWS as the advisor in the permit granting process to persons intending to engage in bio-prospecting involving any wildlife resources; or the export from Kenya any wildlife resources for the purpose of bio-prospecting or any other kind of research. The section details that the process will involve consultations with the stakeholders who have interests to the resource such communities, prior informed consent of stakeholders after the applicant has disclosed all material information relating to the bio prospecting. Further the section describes the need for a material transfer agreement that regulates the provision of or access to such resources; and a benefit-sharing agreement that provides for sharing by the stakeholders in any future benefits that may be derived from the relevant bio-prospecting. The section further requires that KWS be a joint partner on behalf of the people of Kenya, in all bio-prospecting involving any wildlife resources. Section 85 of the Act grants KWS the mandate to issue permits for the import, export, re- export, or otherwise trade in any wildlife species.

This summary shows that KWS has a direct mandate on matters relating to research and specifically to the implementation of the Nagoya protocol for purposes of Access to genetic resources and Benefits sharing.

2.1.2 National Environment Management Authority (NEMA)

The National Environment Management Authority (NEMA) is established under section 7 of the Environmental Management and Coordination Act (EMCA). While the said Act was passed in 1999, there is the Environmental Management and Co-ordination (Amendment) Act, 2015 that not only aligned the previous act to the Kenya Constitution 2010 but also includes other amendments such as insertion of the definition of indigenous Knowledge to mean “any traditional knowledge of sources, components, capabilities, practices and uses of, and processes of preparation, use and storage of plant and animal species and their genetic resources;”

The Act stipulates the functions of NEMA under section 9 which states that “the object and purpose for which the Authority is established is to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment

Among the listed functions in the act, those that relate to this study include:

- co-ordinate the various environmental management activities being undertaken by the lead agencies and promote the integration of environmental considerations into development policies, plans, programmes and projects with a view to ensuring the proper management and rational utilization of environmental resources on a sustainable yield basis for the improvement of the quality of human life in Kenya;
- advise the Government on legislative and other measures for the management of the environment or the implementation of relevant international conventions, treaties and agreements in the field of environment, as the case may be;
- advise the Government on regional and international environmental conventions, treaties and agreements to which Kenya should be a party and follow up the implementation of such agreements where Kenya is a party;
- undertake and co-ordinate research, investigation and surveys in the field of environment and collect, collate and disseminate information about the findings of such research, investigation or survey;

In part V the act covers conservation of biological diversity (section 50), conservation of biological resources *in situ*.(section 51) and conservation of biological resources *ex situ* (section 52). Under section 53 the Act covers access to genetic resources of Kenya. This section directly relates the focus of this work and we have captioned it below for reference (reflecting the amendment of 2015).

Table 3: NEMA Act guidelines and measures

53.(1) The Cabinet Secretary shall, on the recommendation of the Authority", issue guidelines and prescribe measures for the sustainable management and utilisation of genetic resources of Kenya for the benefit of the people of Kenya.

(2) Without prejudice to the general effect of subsection (1), the guidelines issued or measures prescribed under that subsection shall specify –

- (a) appropriate arrangements for access to biological resources, genetic resources and ecological services of Kenya by noncitizens, including the issue of licences and fees to be paid for that access";
- (b) measures for regulating the import or export of germplasm;
- (c) the sharing of benefits derived from genetic resources of Kenya;
- (d) biosafety measures necessary to regulate biotechnology;
- (e) measures necessary to regulate the development, access to and transfer of biotechnology; and
- (f) measures necessary for the recognition, protection and enhancement of indigenous knowledge and associated practices in the conservation of the environment and natural resources;
- (g) measures necessary for the protection of indigenous knowledge of biodiversity and genetic resources of communities;
- (h) any other matter that the Cabinet Secretary considers necessary for the better management of the genetic resources of Kenya.

Further, in section 54, the Act specifies that NEMA will work in accordance with the Constitution, the Convention on Biological Diversity and other treaties. This demonstrates that NEMA has a central role in the current work which makes reference to the Convention on Biological Diversity

2.1.3 Kenya Forest Service (KFS)

The Kenya Forest Service (KFS) is established under section 7 of the Forest Conservation and Management Act, 2016. Some of the specified functions of KFS that are relevant to this work include:

- receive and consider applications for licenses or permits in relation to forest resources or management of forests or any other relevant matter in accordance with this Act;
- establish and implement benefit sharing arrangements in accordance with the provisions of this Act;
- implement and enforce rules and regulations governing importation, exportation and trade in forest produce;

According to the Forest Conservation and Management Act, 2016 section 22, the Kenya Forestry Research Institute, as established under the Science, Technology and Innovation Act, 2013, shall be the agency in forestry research and development.

In section 67 subsection (8)d, the Forest Conservation and Management Act, 2016 specifies as an offence any person who extracts, removes, or causes to be removed, any tree, shrub or part thereof for export;. This in a way mandates KFS to be involved in the management of genetic resources to be found in the natural resources under KFS management.

2.1.4 The Kenya Plant Health Inspectorate Service (KEPHIS)

The Kenya Plant Health Inspectorate Service Act, 2012 in section 3 Section 3 of the The Kenya Plant Health Inspectorate Service Act, 2012, established the The Kenya Plant Health Inspectorate Service (KEPHIS).administer and enforce sanitary and phytosanitary measures;

- undertake plant variety testing and description, seed certification and plant quarantine control;
- undertake inspection and grading of plants and plant produce at the ports of entry and exit;
- implement and enforce national biosafety regulations on the introduction and use of genetically or living modified species of plants, insects and micro-organisms, plant products and other related species;
- regulate import and export of plants and plant materials;
- in consultation with other relevant agencies, regulate the commercial exploitation of naturally occurring plants and plant-related micro-organisms;
- be the liason office for international conventions relating to plant variety protection, plant protection, seed certification and dealing with endangered species or any other related conventions

Further functions of KEPHIS can be derived from the following Acts of parliament since section 6 of the Kenya Plant Health Inspectorate Service Act, 2012 provides that KEPHIS shall, in the performance of its functions implement the provisions of these laws:

- The Plant Protection Act, (Cap. 324);
- The Seeds and Plant Varieties Act, (Cap. 326)
- The Agricultural Produce (Export) Act (Cap. 319)
- The Suppression of Noxious Weeds Act, (Cap. 325)

2.1.5 The National Commission for Science, Technology and Innovation (NACOSTI)

The National Commission for Science, Technology and Innovation (NACOSTI) is established under section 3 of the Science, Technology and Innovation Act, 2013 with the objective to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto. Some of the functions of the commission relevant to this work as stated in section 6 of the Act include:

- accredit research institutes and approve all Scientific research in Kenya;
- assure relevance and quality of science, technology and innovation programmes in research institutes;
- co-ordinate, monitor and evaluate, as appropriate, activities relating to scientific research and technology development;

Part IV of the Science, Technology and Innovation Act, 2013 is on Licensing of research. In section 12, the Act is clear that a person shall not undertake scientific research in Kenya without obtaining a license. Further the same section in the subsections requires any person undertaking or intending to undertake research in science and technology in the country, or who accesses, handles, or transfers any material or technology or moves it within, from or into the country, shall apply to the Commission for the grant of a license, except in cases where the cabinet secretary exempts such a person.

Section 15 of the Act is also relevant to this work since it touches on access, handling and transfer of technology or material for scientific research. We have captioned the section below.

Table 4: NACOSTI Section 15 Act

15. Offences

(1) Any person who—

(a) accesses, handles, transacts, transfers or moves any specified technology or any material necessary for scientific research within, into or from Kenya without a licence issued under this Act; or

(b) contravenes the provisions of section 12, commits an offence and shall, in addition to any other penalty which may be provided for in this Act or any other written law, be liable on conviction to a fine not exceeding five million shillings or to imprisonment for a term not exceeding four years, or both.

(2) The Court convicting a person under subsection (1) may in addition to any penalty imposed thereunder, order the confiscation of the materials in respect of which the offence is committed, and may bar the person so convicted from undertaking any further research in the country or transferring or moving any substance or material in or out of the country.

(3) For the avoidance of doubt, the technologies or materials imported into or exported out of Kenya and declared under—

(a) the Industrial Property Act (Cap. 509);

(b) the Seeds and Plant Varieties Act (Cap. 326);

(c) the Wildlife (Conservation and Management) Act (Cap. 376);

(d) the Customs and Excise Act (Cap. 472);

(e) the Biosafety Act (Cap. 321A);

or any other written law shall be deemed to be technologies or materials to which this section

applies.

From this, the role of NACOSTI is clear for an effective Access to Genetic resources and Benefits Sharing regime in the country.

In the next sections, we describe the processes as was studied through interviews and demonstrations of the research permitting processes in the institutions,

2.2. Narrative of NEMA AS-IS

The National Environment Management Authority (NEMA), is established under the Environmental Management and Co-ordination Act No. 8 of 1999 (EMCA) as the principal instrument of Government for the implementation of all policies relating to environment.

Individuals or organizations wishing to access genetic resources and/or associated information in Kenya are required to obtain an access permit from NEMA. This is governed by EMCA 1999, the “Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006.

To apply for an access permit, an applicant accesses the NEMA licensing system through the NEMA web site: www.nema.go.ke, and creates a user account, or logs-in if they are returning users. A new applicant creates an account, by filling an online registration form. The applicant fills in personal details (name and email), and account details (user name and password), and submits the form. After submitting the registration form, the system emails the applicant a confirmation of the new account, and account activation instructions.

After logging in the applicant is required to submit a fully completed application i.e. a duly filled online application form with all required documents—as attachments. The documents to be attached by the applicant include:

- Bank slip (application fees to be deposited to the NEMA Revenue account)
- A copy of a valid research permit from National Commission for Science, Technology and Innovation
- A comprehensive research proposal
- A signed Prior Informed Consent (PIC) with written Mutually Agreed Terms (MAT) from designated lead agency and local communities.
- A signed Material Transfer Agreement (MTA) executed with relevant government institution if the genetic resource will be taken outside Kenya
- Permit under CITIES (if applicable)
- A copy of Memorandum of Understanding (collaborative agreements) if the applicant is in collaboration with other partners-This is usually the MAT
- Letter of affiliation
- Letter from academic/research institute
- Copies of curriculum vitae for all personnel to be involved in the project
- Copy of ID/Passport/PIN,
- Copy of public notice form (Kenya gazette, wide circulating newspaper)
- Any other requirement

All applications are received by a Desk officer—Biodiversity, who reviews them for completeness, against a review sheet. If the application is not complete, the desk officer notifies the applicant through email to submit missing details/documents.

The desk officer prepares a gazette/advert to receive comments from members of the public. The advertisement is posted on the NEMA website. The fully completed applications together with any comments from the public are then forwarded to the Authority’s Access to Genetic

Resources and Benefit Sharing (ABS) technical Committee for determination.

The ABS technical committee may:

- Approve the issuance of an access permit with conditions for approval of the proposed project. In this case, the access permit is issued after the applicant has accepted in writing to the conditions of approval.
- Pend approval until certain issues have been addressed to the satisfaction of the Authority, during which the Access permitting processing time stops running.
- Reject an application with reasons.

The ABS technical committee issues Records of Decision (RoD) of the Authority (approval, rejection, issues to be addressed), to the desk officer—who fills in a review sheet. If the "pend approval" decision is arrived at, the issues to be addressed are sent to the applicant, who must address the issues and resubmit the proposal, which has to go through the ABS Committee.

On the other hand, if the issuance of an access permit is approved, the desk officer sends conditions of approval to the applicant. The applicant is required to send a letter agreeing to the stipulated conditions to the desk officer. The desk officer then prepares the permit and prints it. The printed permit is forwarded to the Director Compliance and Enforcement (DC & E) for approval. Most of the times, the DC & E signs the access permit on behalf of the Director General (DG) NEMA—under delegated powers. After signing the permit, it is sent back to the Desk officer for dispatch. The applicant receives the original copy. Copies of the permit are sent to other relevant agencies (e.g. KWS, KFS...), another copy is filed by the desk officer. Lastly, if the "Reject" decision was arrived at, the desk officer prepares a rejection letter and sends it to the applicant.

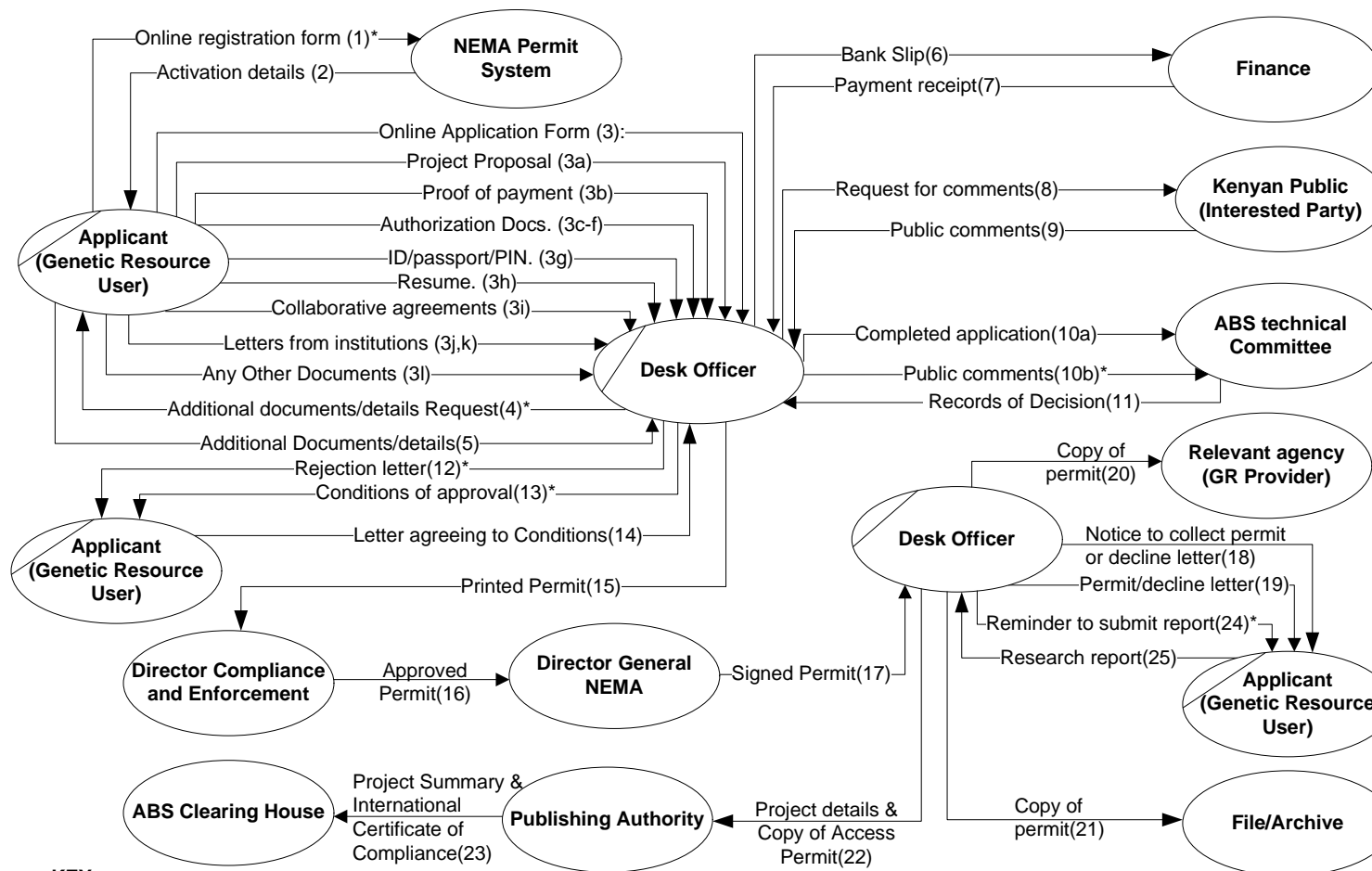
The desk officer forwards also a copy of the issued access permit and project details to the publishing authority, who publishes the project summary and International certificate of compliance to the Access and Benefits Sharing clearing house website.

The applicant is also required to file a quarterly report to NEMA and a final report at the completion of the project. The desk officer sends a reminder to the applicant, if he/she does not file a report within the stipulated time.

2.3. Document Flow Diagram

From the narrative above, we identified the various documents in the permit application process and show how they flow in the course of carrying out a permit application process. This is summarized in the following diagram below.

PROCESS OF ACQUIRING AN ACCESS PERMIT FROM NEMA: DOCUMENT FLOW



KEY:

* Indicates conditional flow of information

Authorization Documents Include:

3c: NACOSTI permit

3d: PIC with Written MAT

3e: Signed MTA (where applicable)

3f: Permit under CITIES (where applicable)

Letters from institutions include:

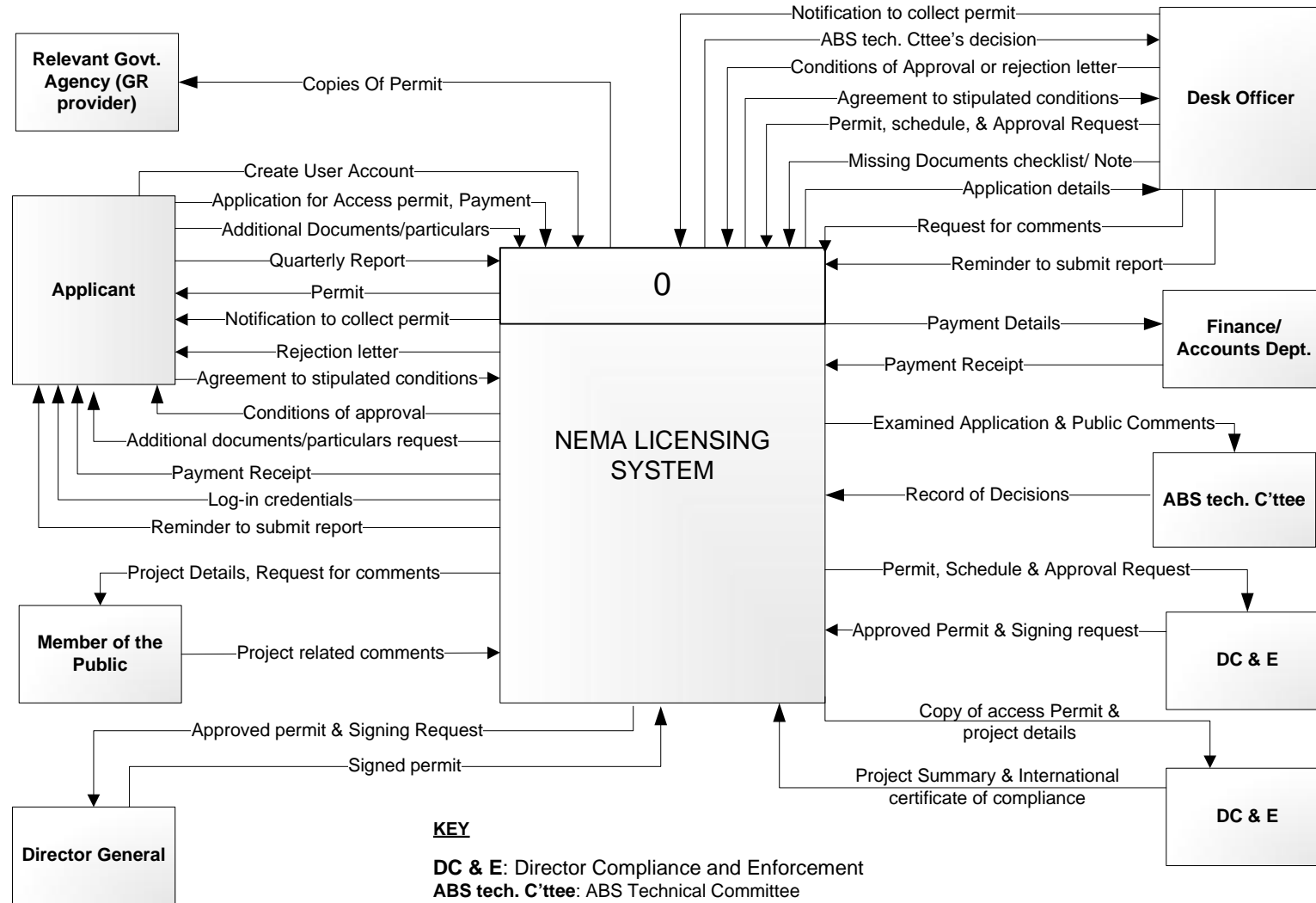
3j: Letter of affiliation

3k: Letter from academic/research institute

2.4. Context Diagram

Further to the document flow diagram, we can schematically view the interaction of the various users (both internal staff and external (permit applicants)) as well as the various departments in the form of a context diagram as shown below.

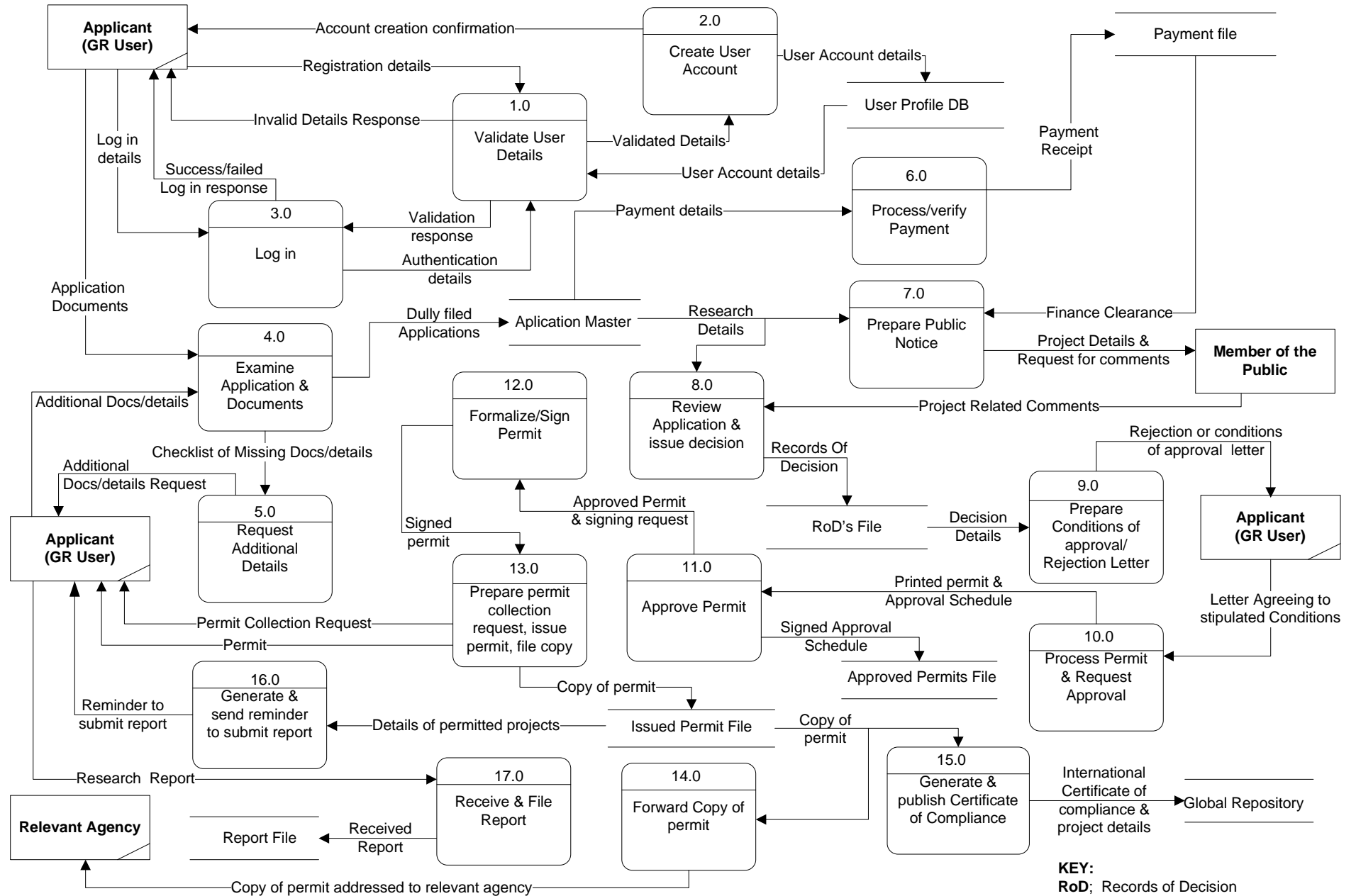
PROCESS OF ACQUIRING AN ACCESS PERMIT FROM NEMA: CONTEXT DIAGRAM



2.5. Data Flow Diagram

Another representation is one that takes into account the flow of data/information in the permit application process. This is summarized in the following figures below

Process of Acquiring an Access Permit From NEMA: Data Flow Diagram

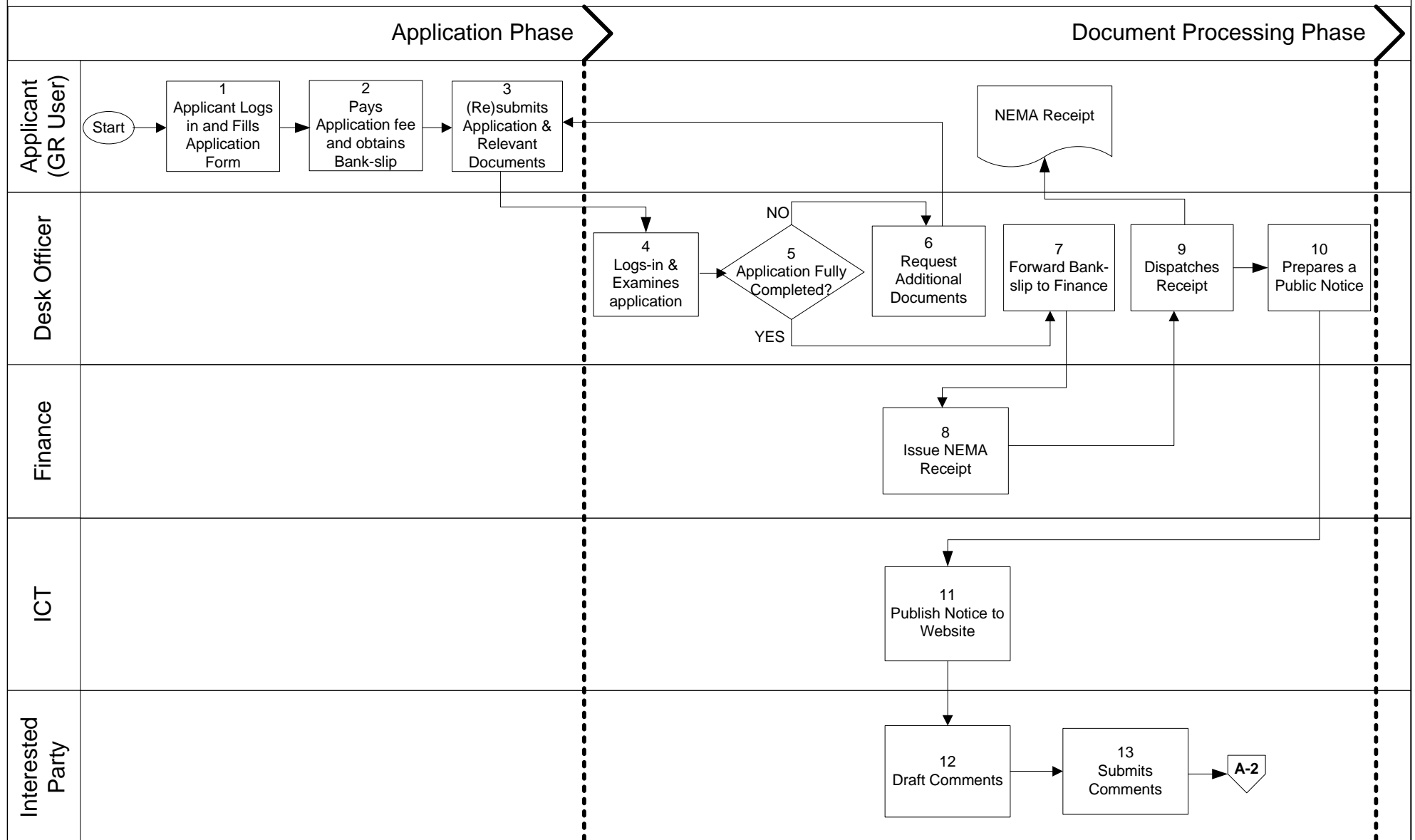


2.6. Swim Lanes

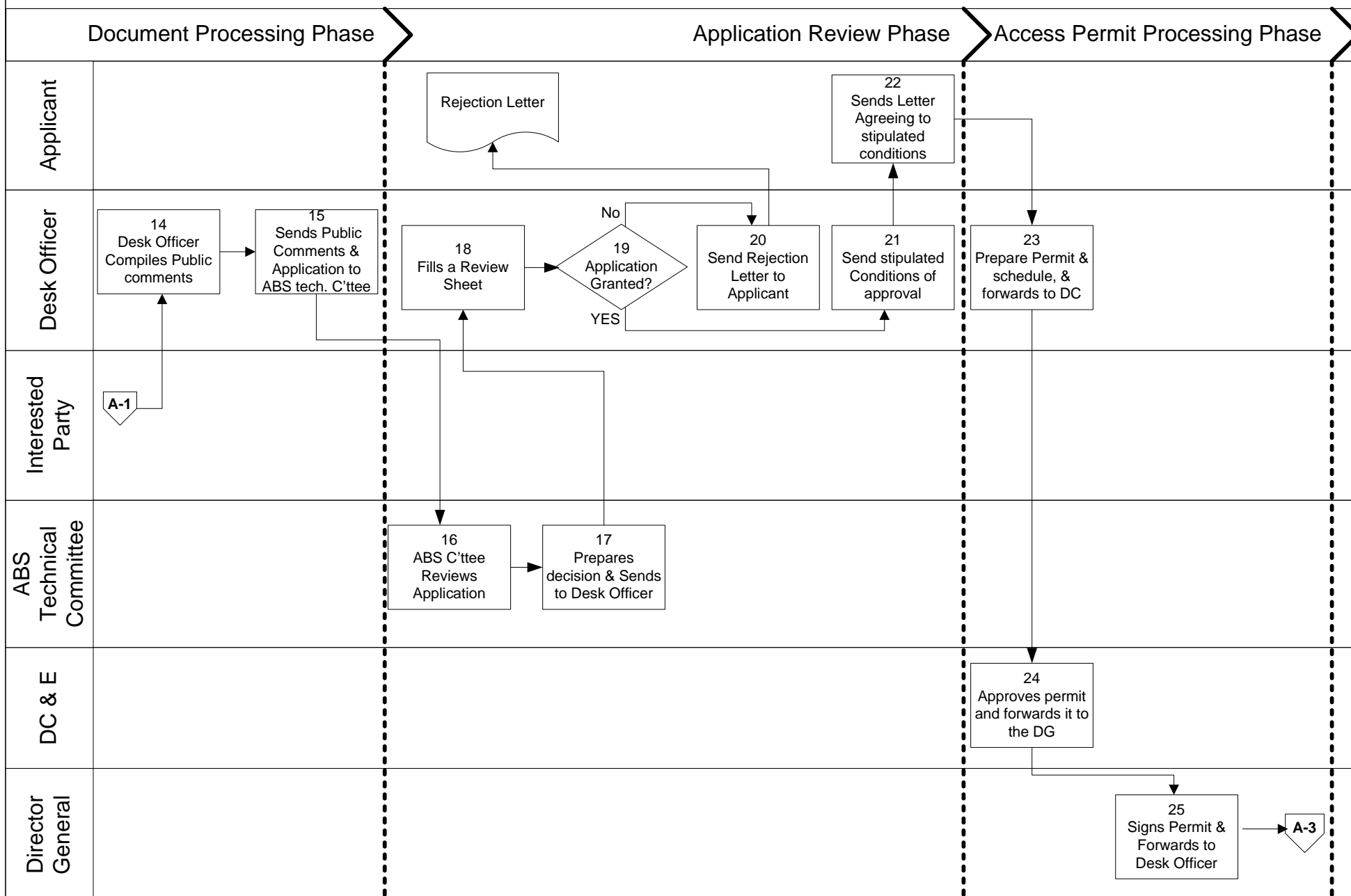
A swim lane (or swim lane diagram) is a visual element used in process flow diagrams, or flowcharts that visually distinguishes job sharing and responsibilities for sub-processes of a permit process. Swim lanes may be arranged either horizontally or vertically. In this document we chose the vertical representation. Each column represents either the officer, or department or entity that is plays a role in carrying out a permit process at NEMA.

In this section we show detailed activities that are involved as sub-processes of the core business processes identified. Visually, the swim lanes are cross-functional and they show the sharing of responsibilities in a given permit process. Below are the sub-processes that were identified from the as-is study of permit application process at NEMA.

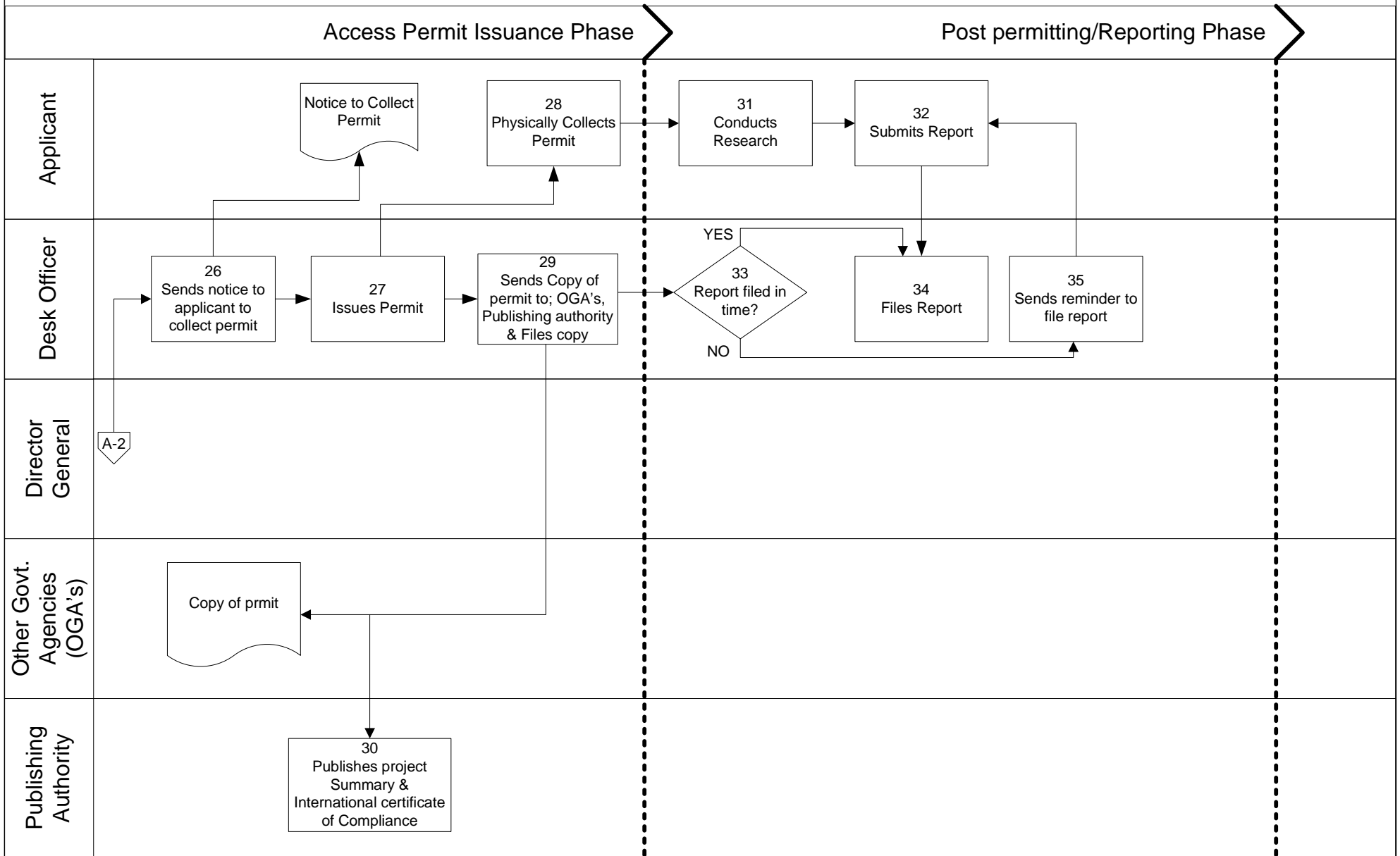
Process of Acquiring an Access Permit From NEMA



Process of Acquiring an Access Permit From NEMA



Process of Acquiring an Access Permit From NEMA



2.7. Use cases

NEMA AS IS LICENSING SYSTEM USE CASE SUMMARY

Sn	Use case name	Purpose	Input	Source of input	Output	Output recipient(s)
01	Create account	Allows the User to create a login account and become a Registered User.	<ul style="list-style-type: none"> Registration form/details. Attachments (pp. photo, ID/passport) 	New Applicant	Log-in credentials & login instructions	New User
02	Log in	To gain access to the NEMA online permitting system	<ul style="list-style-type: none"> User name Password 	Registered user	<ul style="list-style-type: none"> Invalid log-in credentials notification System access 	Registered user
03	Examine application/ documents	To verify whether the application is complete	Application form and relevant attachments	Applicant	Complete or incomplete application status, & checklist of missing details	<ul style="list-style-type: none"> Desk officer
04	Request additional details	To enable the desk officer request for any missing details	Checklist of missing details	Desk officer	Additional details/documents request	Applicant
05	Process/verify payment	To ensure whether the applicant has paid the requisite fee	payment details (Bank-slip)	Desk officer BD	NEMA receipt	<ul style="list-style-type: none"> Applicant Desk officer
06	Prepare public notice	To inform the public about the intended research and request for any comments	Research details	Desk Officer	Public announcement / gazette notice	<ul style="list-style-type: none"> ICT Officer Public
07	Review Application & issue decision	To review the application, and decide whether to grant or deny an access permit	<ul style="list-style-type: none"> Comments from the public Completed application 	<ul style="list-style-type: none"> Desk officer ABS Technical committee 	Records of decision (RoD)	Desk Officer
08	Prepare	To inform the	RoD	ABS	Conditions of	Applicant

	Conditions of approval or Rejection Letter	applicant that the access permit has been issued, and there is need to agree to the conditions issued by the ABS Technical committee, or that the application has been declined		Tech. Committee	approval or decline letter	
09	Process Permit & Request Approval	To prepare permit and request for its approval	Letter agreeing to stipulated conditions	Applicant	Printed permit & approving schedule	DC & E
10	Approve permit	To formalize the permit issuance	Printed permit and approving schedule	Desk officer BD	Approval of issuance/ signed approving schedule	<ul style="list-style-type: none"> ▪ DG ▪ Desk officer
11	Formalize/sign permit	To formalize the issued permit	Formally issued Permit & signing request	DC & E	Formal permit	<ul style="list-style-type: none"> ▪ Desk Officer ▪ Applicant
12	Send application processing status	To request the applicant to collect the permit or decline letter	Approval of issuance	DC & E	Letter notifying the applicant to collect permit or decline letter	Applicant
13	Forward copy of permit	To send the permit to relevant agencies	Signed permit	DG	Copy of signed permit	<ul style="list-style-type: none"> ▪ Other agencies (e.g. KWS, KFS...) ▪ Publishing Authority
14	Generate & publish	To publish details of the	Copy of permit and project	Desk Officer	International certificate of	ABS Clearing

	Certificate of Compliance	proposed project (extracts of MAT and PIC) to the ABS clearing house	details		compliance & project summary	house (Public audience)
15	Generate & send reminder to submit report	To remind the applicant to submit the research report, if he/she does not submit within the stipulated time	Project details (Start and end date)	Applicant	Reminder to submit report	Applicant
16	Receive and file report	To receive and file reports submitted by the applicant.	Research report	Applicant	Research report	Desk officer

2.8. Narrative of KWS AS-IS

NARATIVE OF ADMINISTRATIVE REVIEW PROCESS AT KWS

The KWS permitting system IS anchored by the Wildlife Conservation and Management Act 2013.

Research permitting system has two (2) offices namely:

1. Research Authorization-Under Biodiversity Research and Monitoring Division, in charge of authorizing and issuing of research permits to applicants.
2. Licensing – Under Park services and Community Division, in charge of issuing material export permit/ certificate in case a researcher intends to export research material.

-All research permit applications involving KWS are handled by the senior scientist in charge of research and authorization. Applications are received either via email or hardcopies. In either case they are taken to the deputy director before the senior scientist processes them.

-Research permit applications and issues are guided by Standard Operating Procedures (SOPs). This SOP document has a workflow (swim lane) that explains the process and the required documents

-Research authorizations are carried under research divisions

SOPs/ permit application process

1. An applicant downloads an online research permit application form and fills in the necessary details
2. The applicant pays for the permit. The payment system is cashless.
Locals pay in KSHS to KWS bank account – standard chartered/KCB or through research account pay bill number
Foreigners pay in dollars to the KWS research account by wiring (to a SCB dollar account)
3. The applicant attaches all the required documents (Approved research proposal, Letter from affiliate institution, Signed research letter from host University/ institution, PIC,MAT, MTA, NACOSTI Research Permit, passport, ID copy, MOU, evidence of payment etc.)
4. The application is addressed and sent to the deputy director Research and Monitoring. The application can also be downloaded online by senior scientist in charge of research authorization.
5. The payment transaction number is sent to the senior scientists who counter checks with the finance
6. Finance department issues a payment receipt which the senior scientist scans and sends to the permit applicant (proof that the application has been received and currently being processed)
7. Senior scientist research and authorization verifies the application and attached documents and summarizes the proposals
8. The summarized proposals and applications are forwarded to the Approval committee

9. The approval committee reviews the application and grants or fails to grant the authorization. The committee gives a verdict accompanied with committee minutes
10. The approved applications and the committee minutes are given to the GD for final approval
11. The senior scientist research authorization then prepares an authorization then notifies applicant to collect.
12. The committee reviews all applications whether for collections /export or not. The key elements checked are the PIC MAT MTA for the ABS permits. The research committee sits to consider the application.
-The committee is composed of 7 member i.e.
 - i. Chairman-Deputy director research and permit authorization,
 - ii. Secretary-senior scientist in charge of research authorization,
 - iii. representative from licensing office,
 - iv. rep from veterinary dept.,
 - v. rep from parks & reserves,
 - vi. rep from marine research,
 - vii. CITES scientist
 - viii. Bio-prospecting expert
 -The committee has to unanimously make a determination on the application and approve or dis approve the application giving reasons.
13. If permit is granted by senior scientist or the committee, the permit is sent to the director general for signing
14. After director signs, the signed permit is sent back to the senior scientist research and authorization who mails it to the applicant. Some applicants also come to KWS to physically collect their KWS research permits.
15. The senior scientist authorization and research then logs into the KWS Integrated Data base and updates the database with permit details. The following is the composition of the modules in the integrated database:

KWS Integrated Data base functionality features:

- Species Summary
- Research Projects [where permitting related work takes place]
- Update DB
- Run Query
- Export Data
- Maps (under GIS)
- Trends in key Species
- Database documents
- Software down loads
- Fire Alerts (connects with Forestry)
- GPS coordinating tools
- Credits (Data base link to Finance)
- Link to KWS INTRANET

16. The senior scientist research and authorization then chooses Research projects. Upon doing this three options are available for him namely:

- Update database (For keying permit details)
- Run Queries (i.e. for interrogating the system to see summary report i.e. number of projects permitted in a given period etc.)
- Export Data

17. Upon choosing update database the senior scientist updates the database with the details of the issued permit. Such details include:

- Date of authorization
- Research institution
- Principal investigator
- Project Title
- Level of research (i.e. Diploma, undergraduate, masters, PHD/ Project)
- Start date
- End date
- PIC
- VETs
- Project site
- Project area (there are 8 areas i.e. coasts, Southern, Central rift, Western etc. based on the 8 provinces in Kenya)
- Project progress report date
- Payment receipt number
- Currency

18. After updating the above details in the database the senior scientist clicks Add Project to update the details.

19. If the research work involves **collection** and **export** of samples/ intrusion methods i.e. removal of blood etc. the researcher fills in an online sample/ materials export application form and attaches required docs (MAT, MTA, etc.) then emails to the director general research and authorization who forwards the application to senior scientist research and authorization.

20. Scientific collections are verified and coded by the bio-prospecting office at KWS before issuance of the License.

21. The senior scientist checks/ verifies the application then forwards the application to the **licensing** office. Other interested agencies such as KEPHIS, department of Vet Services NEMA etc. are also involved if need be at this stage)

LICENSING OFFICE

The operations of this office are guided by the principles of Wildlife Conservation and Management Act 2013.

The licensing office issues export licenses based on Convention on International Trade in

Endangered Species of Wild Fauna and Flora (CITIES) regulations and international conventions such as the Nagoya protocol

Licensing office receives export applications that require licensing for material export together with all other required documents

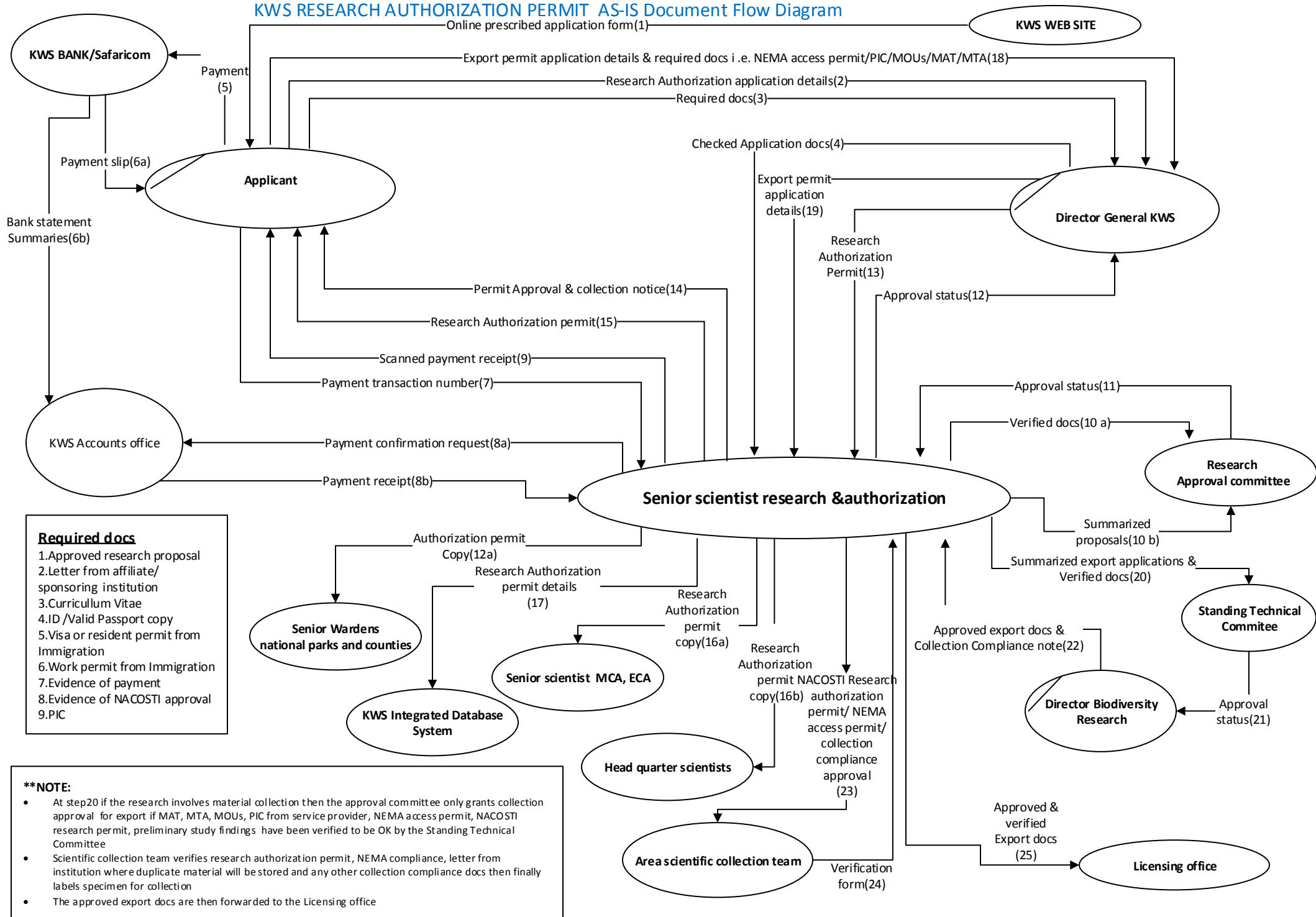
The process/ steps

1. If the research work involves **collection** and **export** of samples/ intrusion methods i.e. removal of blood etc. the researcher fills in an online sample/ materials export application form and attaches required docs (MAT, MTA, etc.) the key is ABS permit
2. The senior scientist –Biodiversity Division forwards the approved application specimen form by DD BR&M to the research applicant.
3. The applicant forwards the checked application form and documents to licensing office after passing the bar code office.
4. The licensing office checks the application if all the required documents are attached. The office also checks if other interested agencies such as KEPHIS, dept. of Vet Licensing, NEMA etc. have fully approved their part if need be.
5. The office then issues a notice of rejection or permit approval to the applicant.
6. If it is an approval then a notice to pay is also given to the applicant.
7. The applicant pays for the export permit to the Bank (payment method remains the same as in research permit issue).
-Bank sends payment statements to accounts
8. Accounts forwards payment receipts to export licensing office
9. Upon receipt of payment receipts the licensing office verifies payment then prepares the export permits which are then signed by the KWS Director General. Currently KWS has only permit reference numbers(there is need to computerize the process to automatically generate a permit serial number)
10. The signed permits are then printed by the government press then given to licensing office.
11. Licensing office then sends a notice to collect permit to the applicant through email
12. The applicant physically comes to collect the original and a copy of the signed permit to export samples.
13. The applicant presents the 2 documents (original and copy of signed export permit to immigration/ customs)
14. Customs checks and signs their part on the permit then gives it to the applicant and retains the checked copy
15. The checked manual copy permit/ form is supposed to be sent back to the KWS licensing office(but this rarely happens at the moment- may be the TO BE system should automate this final step)

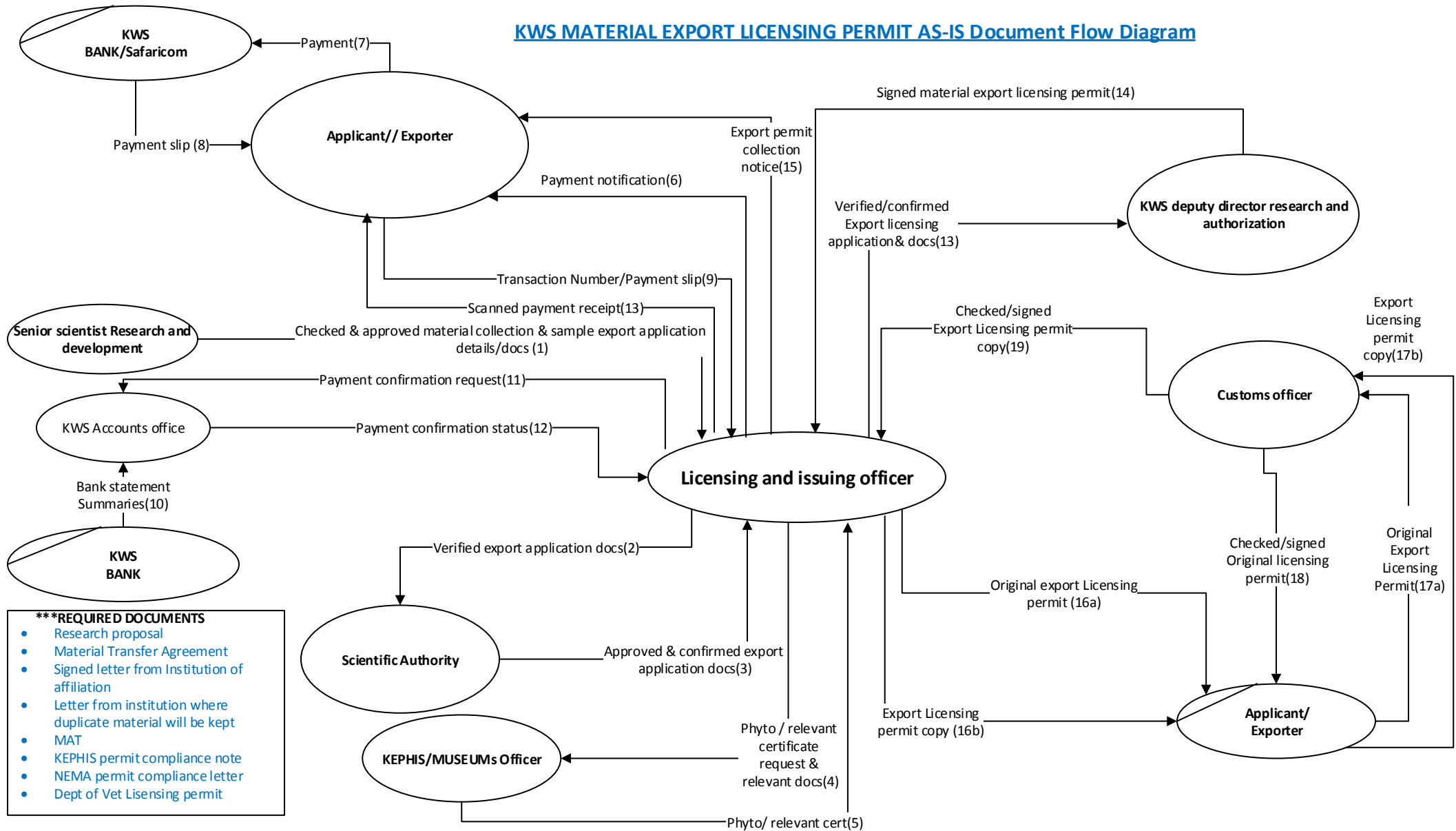
2.9. Document Flow Diagram

From the narrative above, we identified the various documents in the permit application process and show how they flow in the course of carrying out a permit application process. This is summarized in the following diagram below.

KWS RESEARCH AUTHORIZATION PERMIT AS-IS Document Flow Diagram



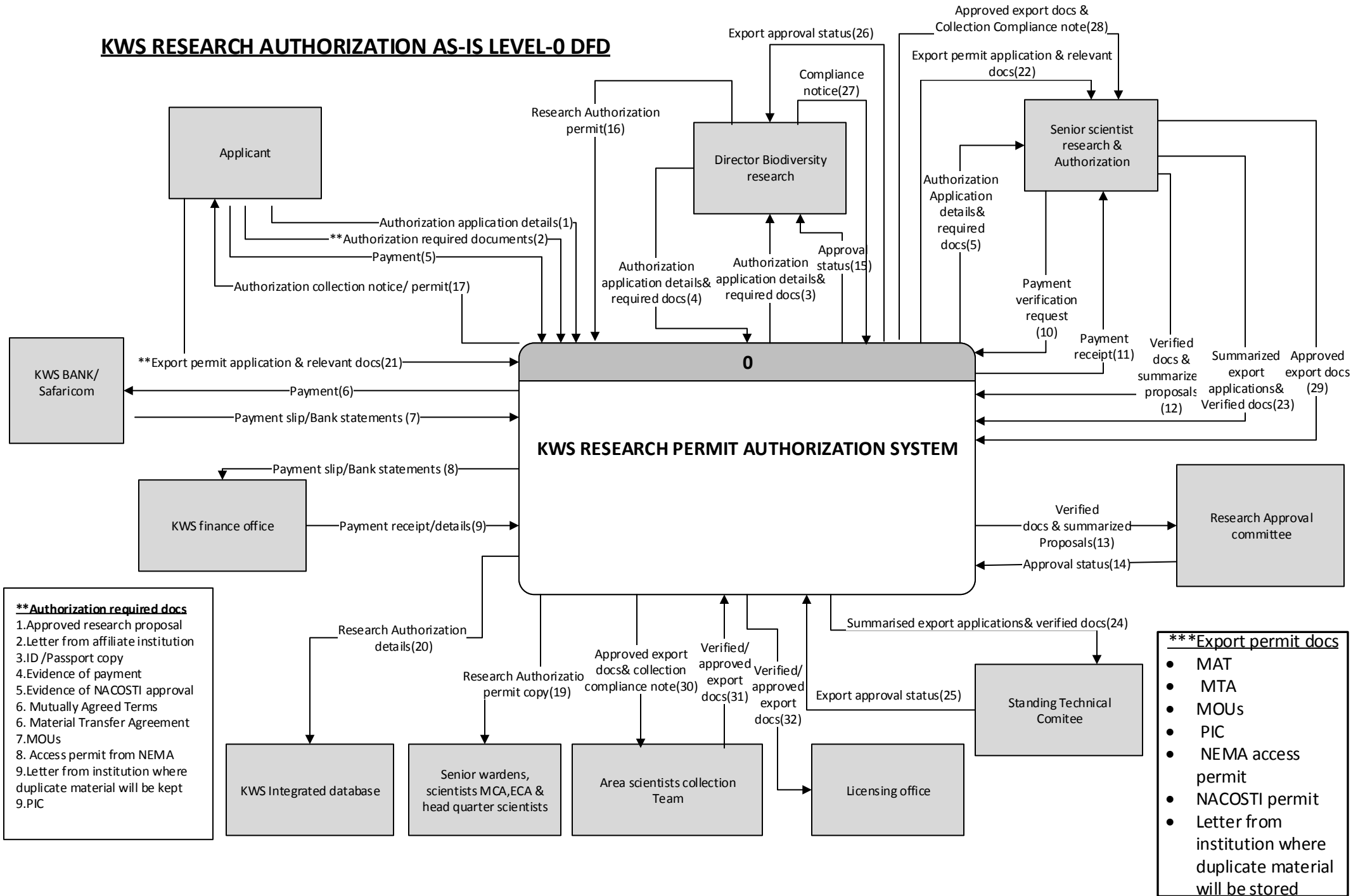
KWS MATERIAL EXPORT LICENSING PERMIT AS-IS Document Flow Diagram



2.10. Context Diagram

Further to the document flow diagram, we can schematically view the interaction of the various users (both internal staff and external (permit applicants)) as well as the various departments in the form of a context diagram as shown below.

KWS RESEARCH AUTHORIZATION AS-IS LEVEL-0 DFD



2.11. Data Flow Diagram

Another representation is one that takes into account the flow of data/information in the permit application process. This is summarized in the following figures below

DIAGRAM 1: KWS RESEARCH AUTHORIZATION LEVEL 1 DFD

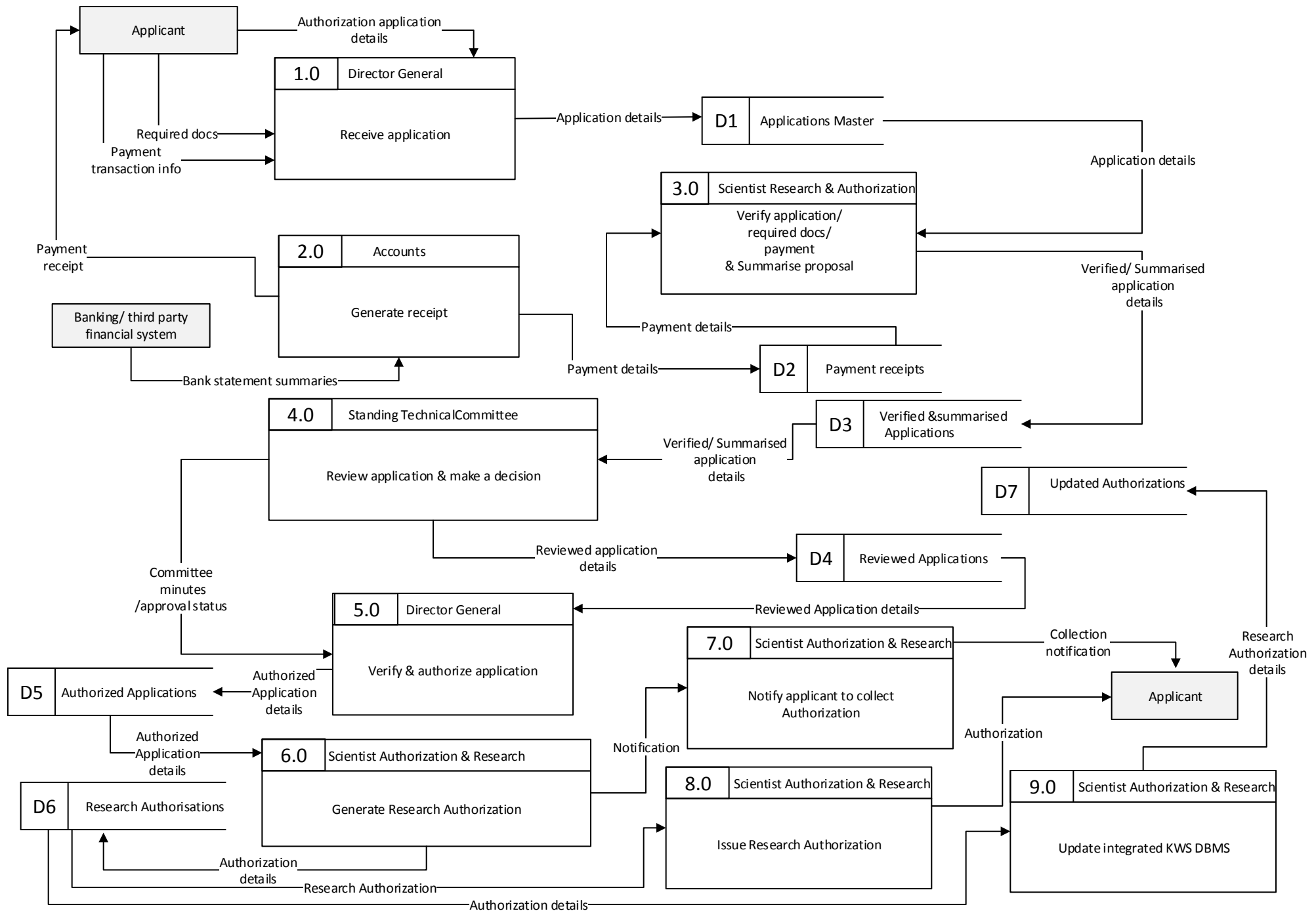


DIAGRAM 2: KWS EXPORT LICENSE APPLICATION & APPROVAL LEVEL 1 DFD

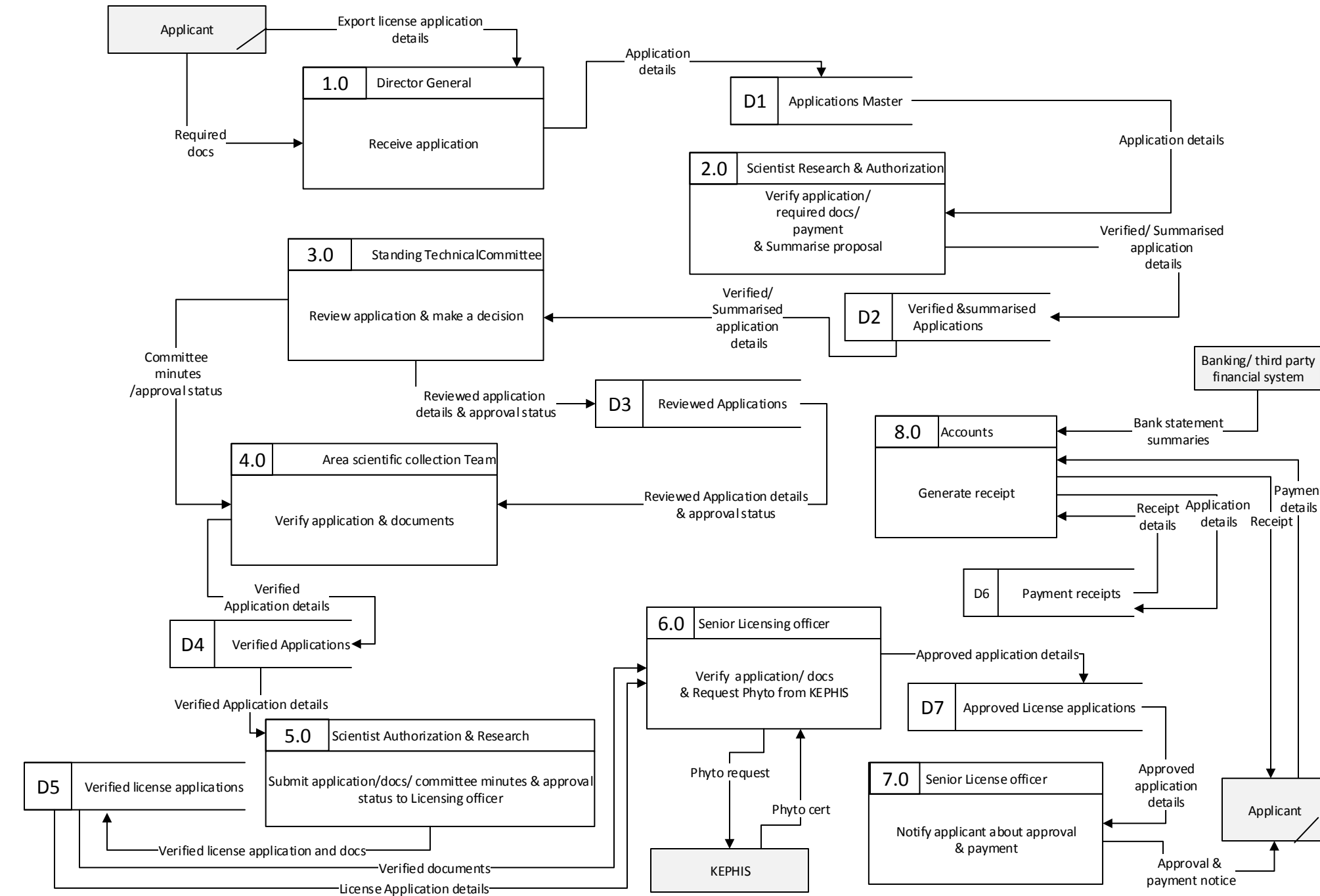
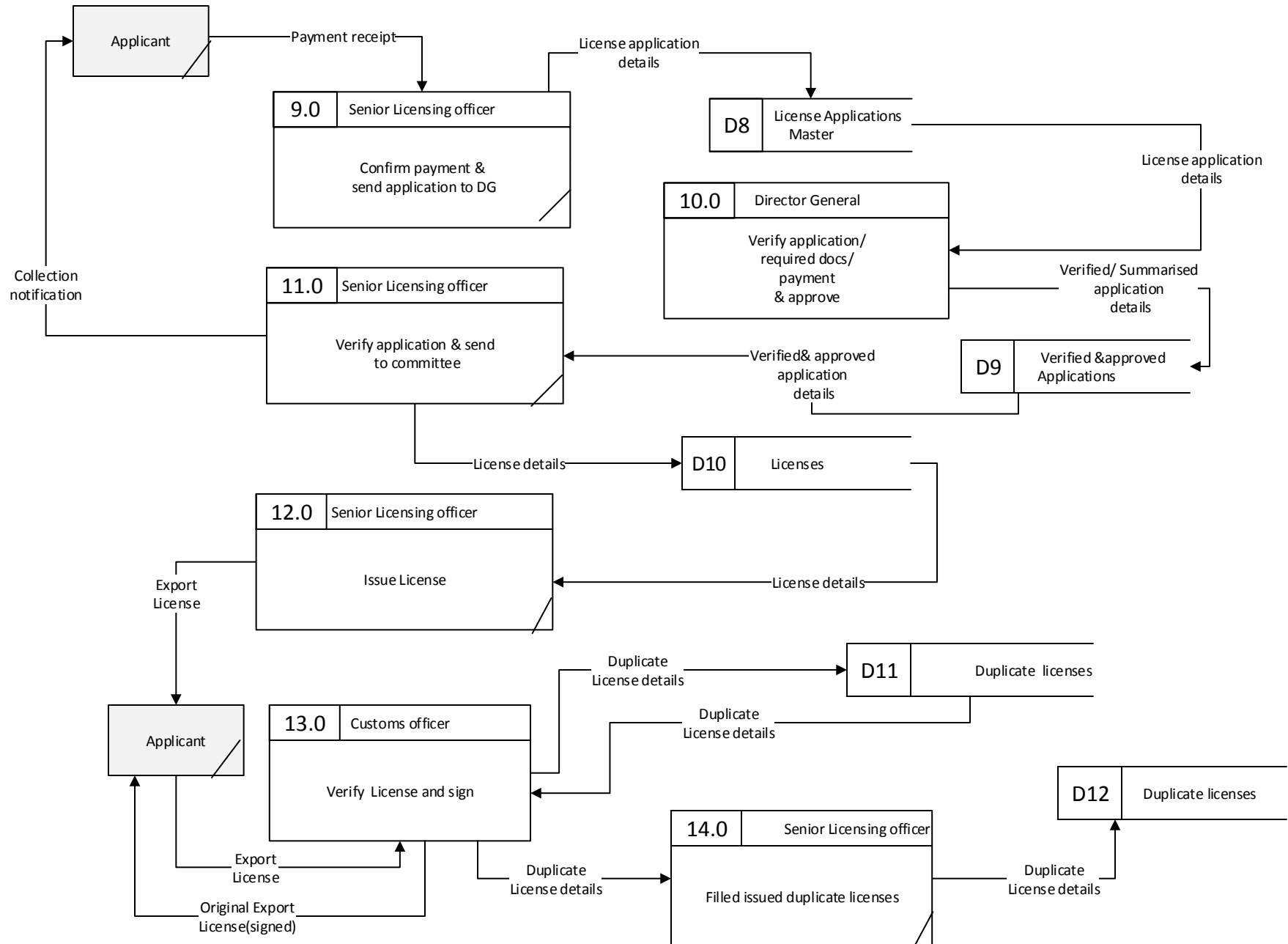


DIAGRAM 3: KWS EXPORT LICENSE APPLICATION & APPROVAL LEVEL 1 DFD

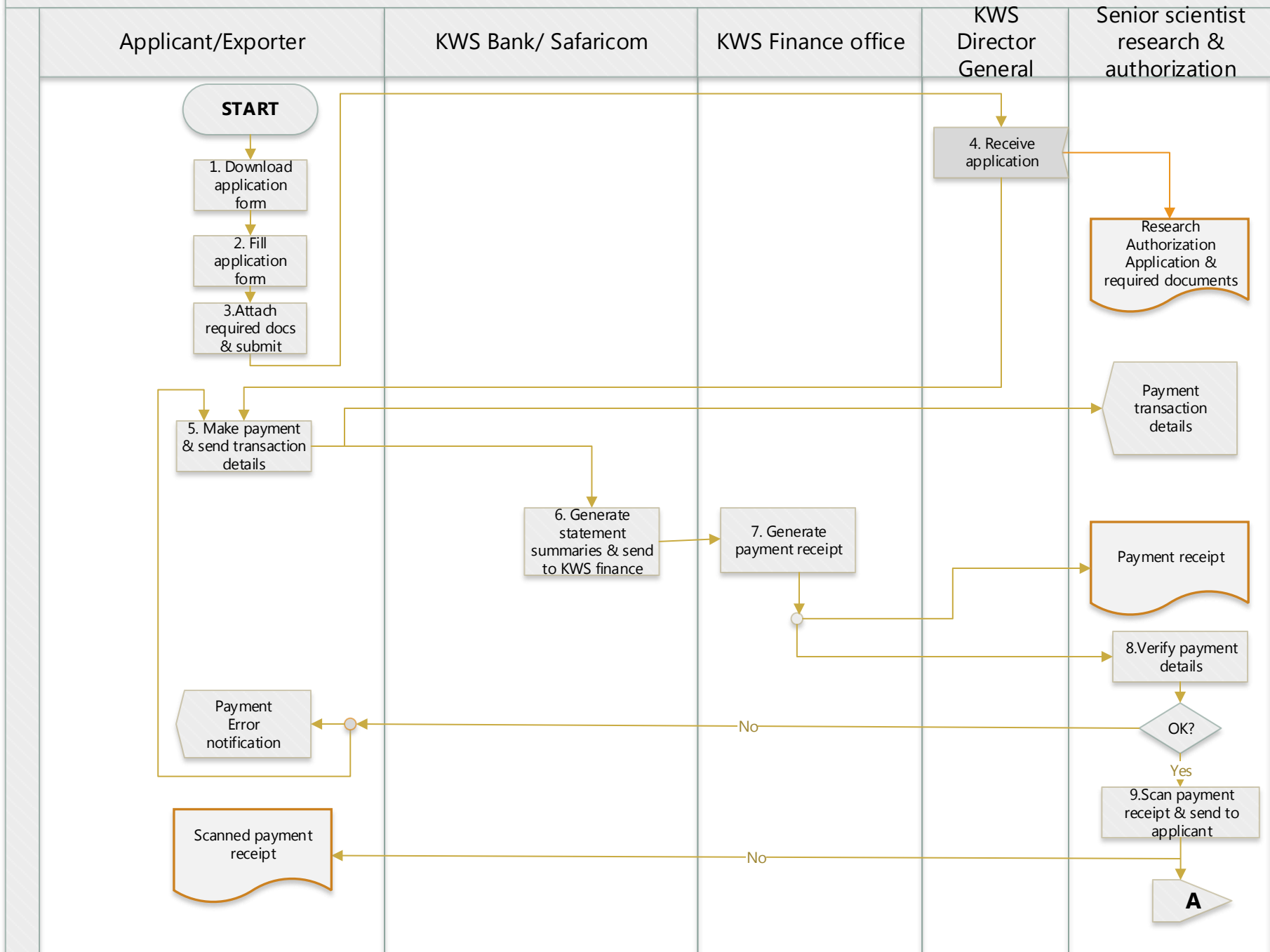


2.12. Swim Lanes

A swim lane (or swim lane diagram) is a visual element used in process flow diagrams, or flowcharts that visually distinguishes job sharing and responsibilities for sub-processes of a permit process. Swim lanes may be arranged either horizontally or vertically. In this document we chose the vertical representation. Each column represents either the officer, or department or entity that is plays a role in carrying out a process at KWS.

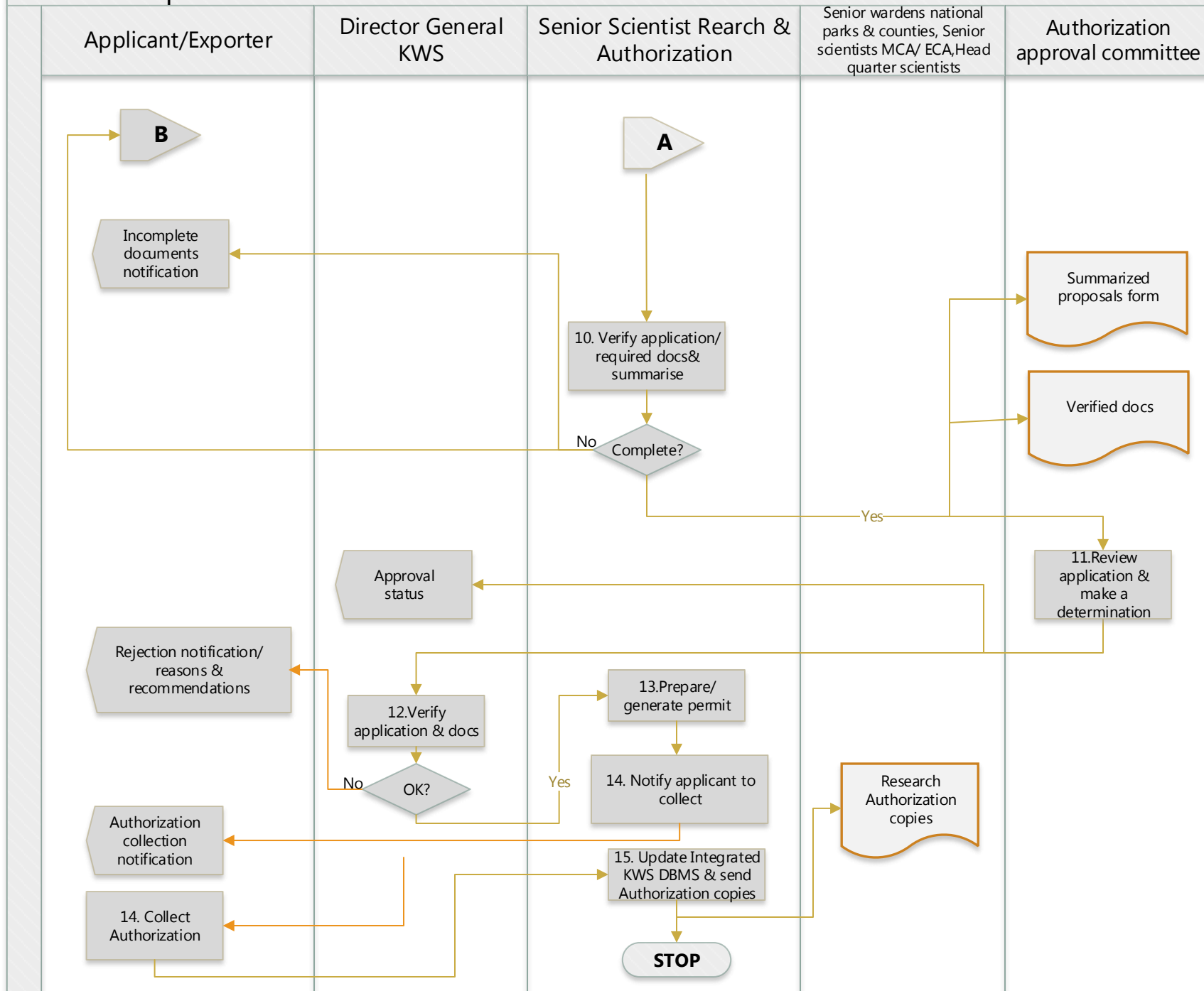
In this section we show detailed activities that are involved as sub-processes of the core permit processes identified. Visually, the swim lanes are cross-functional and they show the sharing of responsibilities in a given permit process. Below are the sub-processes that were identified from the as is study of processes at KWS.

PROCEDURE: Application for Research Authorization and Approval Process map

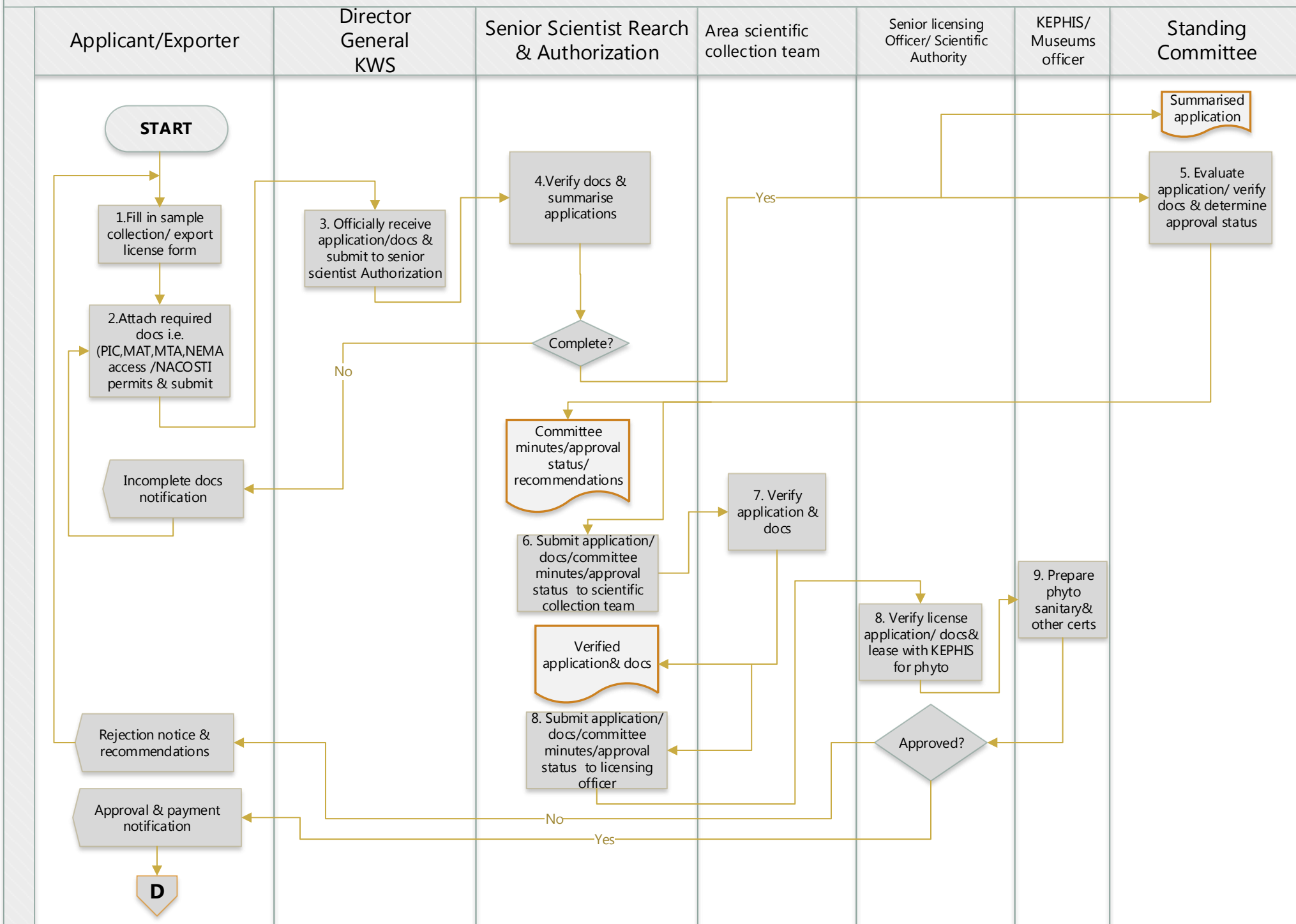


PROCEDURE: Application for Research permit, Export/ Re Export permit and approval

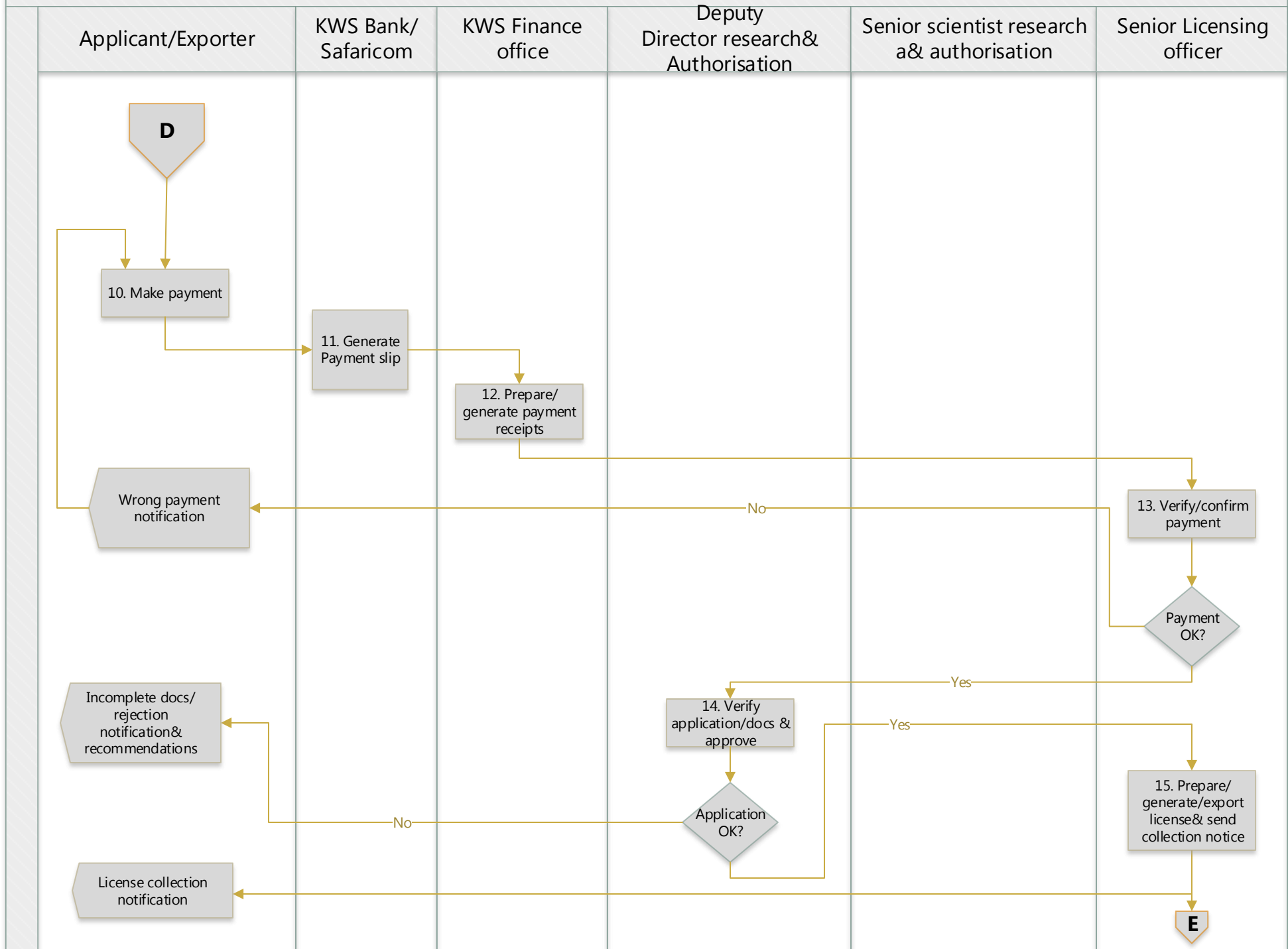
Process map



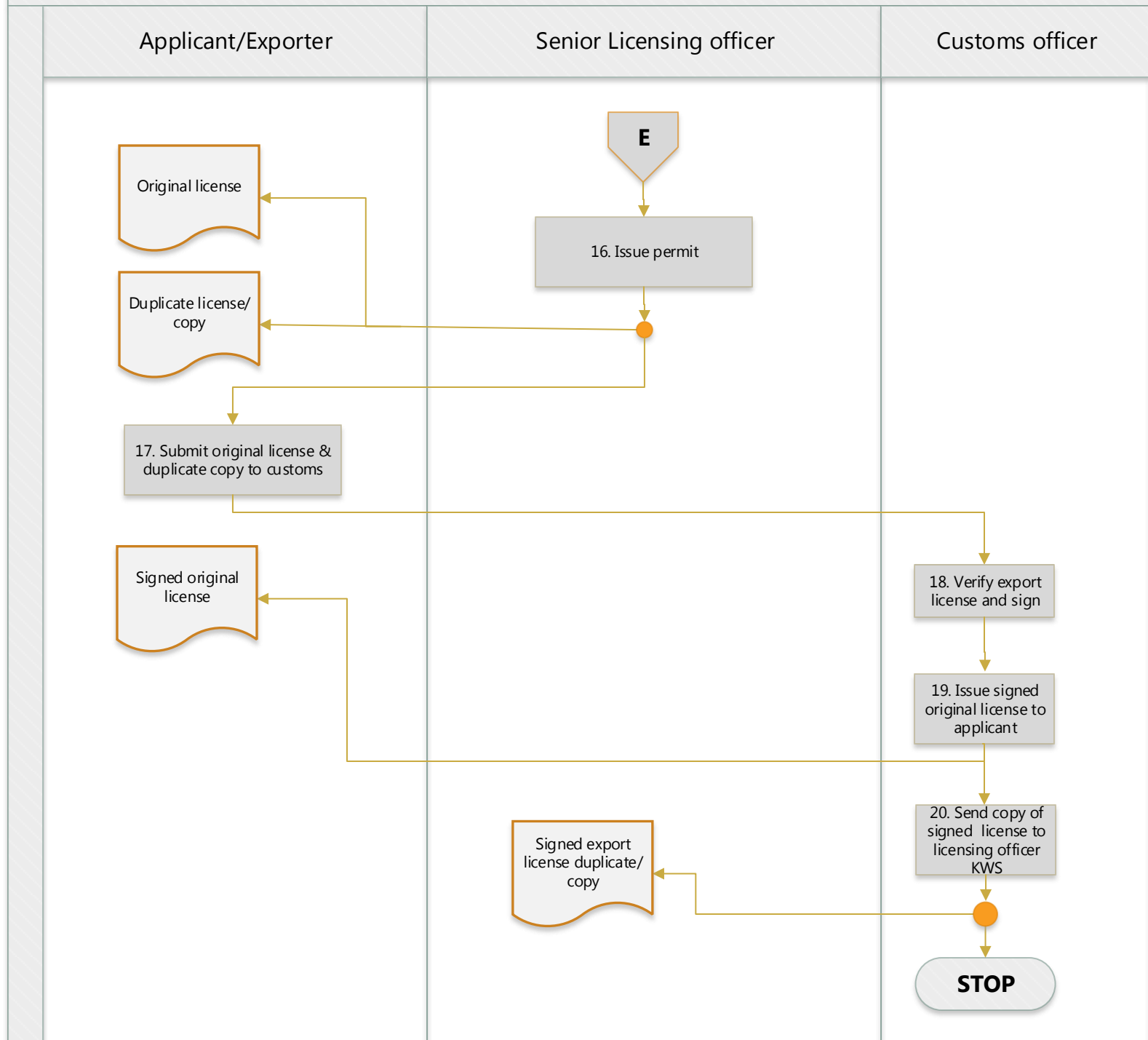
PROCEDURE: Application for Export/ Re Export license and approval Process map



PROCEDURE: Application for Export/ Re Export license and approval Process map



PROCEDURE: Application for Export/ Re Export license and approval Process map



2.13. Use cases

KWS RESEARCH AUTHORIZATION AS IS SYSTEM USE CASE SUMMARY

Sn	Use case name	Purpose	Input	Source of input	Output	Output recipient(s)
01	Lodge application	To enable a researcher to apply for a research authorization.	<ul style="list-style-type: none"> Application form Supporting documents 	Applicant	Fully completed research authorization Application	Director General KWS
02	Verify Application	To ensure that the application is complete	<ul style="list-style-type: none"> Application form and attachments Requirements checklist 	Applicant & DG KWS	Verification status/Verified/ summarised application	Senior scientist Research Authorization
03	Request additional documents /details	To notify the applicant that the application is not complete	Verification status	Finance & Senior scientist Research Authorization	Notification on missing/ incomplete documents	Applicant
04	Submit missing documents	To ensure that the application is complete	Missing/requested documents	Applicant	Additional documents/details	Director General KWS
05	Verify and Acknowledge payment	To confirm that the correct fee has been paid by the applicant	<ul style="list-style-type: none"> Proof of payment (Bank slip...) Payment receipt 	Accounts & Senior scientist Research Authorization	Cleared summarised application/ Payment clearance	Standing Technical Committee
06	Review application	To review the research authorization application & make a decision	Cleared summarised application/ Payment clearance	Standing Technical Committee	Committee minutes & approval status	Director general
07	Verify & authorize application	To verify the application/ committee minutes/approval status & grant final approval	Committee minutes & approval status	Standing Technical Committee	Authorization letter	Senior scientist Research Authorization
08	Generate	To prepare/	Directive to		Signed	Applicant

	research authorization	print research or deny letter	grant/deny research authorization through an authorization letter	Director general	research authorization / deny letter	
09	Notify committee decision & approval status	To notify the applicant that the permit has been granted and is ready for collection or the request has been declined	Directive to grant/deny research authorization through an authorization letter	Director general	Research authorization granted/ deny notice	Applicant
10	Issue research authorization	To manually issue research authorization to applicant	Research Authorization master file	Senior scientist Research Authorization	Research Authorization	Applicant
11	Update Integrated KWS Database Management System	To update the KWS DBMS with research Authorization details	Research Authorization details	Senior scientist Research Authorization	Updated authorization	KWS Database Management System)

KWS EXPORT LICENSE AS IS SYSTEM USE CASE SUMMARY

Sn	Use case name	Purpose	Input	Source of input	Output	Output recipient (s)
01	Lodge application	To enable a researcher to apply for material collection and export permit.	<ul style="list-style-type: none"> Application form Required supporting documents 	Applicant	Fully completed material collection and export Application	Director General KWS
02	Verify Application	To ensure that the application	<ul style="list-style-type: none"> Application form and 	Applicant & DG KWS	Verification status/Verified/summarized application	Standing technical committee

		is complete	attachm ents ▪ Require ments checklist			e
03	Notify & request additional documents/details	To notify the applicant that the application is not complete & request for additional documents	Verificati on status	Senior scientist Research Authorizati on	Notification on missing/ incomplete documents	Applican t
04	Submit missing documents	To ensure that the application is complete	Missing/r equested document s	Applicant	Additional documents/details	Director General KWS
05	Review application	To review the material collection and export permit application & make a decision	Verified & summaris ed applicatio n	Senior scientist Research Authorizati on	Reviewed application/ committee minutes & approval status	Bioprospe cting office/Ar ea scientific collectio n Team
06	Verify application	To verify the application/ committee minutes & material collection details	Reviewed applicatio n/ committee minutes & approval status	Standing Technical Committee	Verified export license application	Senior scientist Research Authoriz ation
07	Submit license application	To submit the verified license application/ committee minutes & material collection details to Senior licensing officer	Verified export license applicati on	Senior scientist Research Authorizati on	Verified export license application	Senior licensing officer

07	Verify license application	To verify the application/ committee minutes & material collection details	Verified export license application	Senior scientist Research Authorization	Verified export license application	Senior licensing officer
08	Request for phyto-certificate	To request for phyto-certificate from KEPHIS	Verified export license application	Senior licensing officer	Phyto certificate request	KEPHIS
09	Issue Phyto	To issue phyto	Phyto certificate request	KEPHIS	Phyto certificate	Senior licensing officer
10	Notify approval status	To notify applicant about approval and payment	Approved license application	Senior licensing officer	Approval & payment notice	Applicant
11	Confirm payment & submit application	To confirm payment and submit application to DG	Payment details	Senior licensing officer	License application & confirmed payment	Director General
12	Verify application/ approve and sign	To verify application/ approve and sign	License application & confirmed payment	Director General	-Approval letter -Signed phyto certificate	Senior licensing officer
13	Notify applicant	To notify applicant to come and collect material collection and export license	- Approval letter -Signed phyto certificate	Senior licensing officer	License collection notification	Applicant
14	Issue collection and export license	To manually issue material collection and export	License master file	Senior licensing officer	Material collection and export license	Applicant

		license to applicant				
15	Verify license/sign & issue	To enable customs verify material export license, sign & issue original to applicant	Material collection and export license	Customs	Signed Material collection and export license & duplicate	Applicant
16	Submit copy/duplicate of signed license	To submit copy/duplicate of signed license to KWS	Material collection and export duplicate license	Customs	Signed duplicate license	KWS Senior licensing officer

2.14. Narrative of KFS AS-IS

NARATIVE OF ADMINISTRATIVE REVIEW PROCESS AT KFS

The Kenya Forest service (KFS) is a state corporation, whose mandate is to enhance development, conservation and management of Kenya's forest resources based in all public forests, and assist County Governments to develop and manage forest resources on community and private lands for the equitable benefit of present and future generations.

All individuals, corporate bodies and communities who wish to use forests and forest resources are required to apply and obtain a license from KFS. KFS Assess applications and issue licenses in accordance with the Forest Act, 2005. The act also mandates KFS to establish and implement benefit sharing arrangements.

Kenya Forest Service (KFS) does not have an automated license issuance system. All the processes—from application to the issuance of licenses) are done manually. License applications and/or any other documents are addressed to, and received by the Chief Conservator of forests, who forwards them to the head of Biodiversity. The Head of biodiversity examines the application for completeness, i.e. if all relevant documents have been attached. A typical application includes the following attachments:

- An application letter
- A research proposal describing the research that is to be carried
- A NACOSTI research permit
- A Prior Informed Consent (PIC) with MAT (where applicable) ¹.
- Identification documents (ID/Passport for foreigners)
- Letter of affiliation for foreigners
- Letter from host institution for Kenyans

In the event that the application is not fully completed, the head of biodiversity requests the applicant to submit the missing details/documents. Otherwise, the head of biodiversity determines the requisite application fee and instructs the license applicant to pay the amount to the KFS bank account. The applicant makes the payment and submits the bank-slip to KFS finance/accounts department, who issue a KFS receipt. The applicant then submits the KFS receipt to the head of biodiversity.

The head Biodiversity then reviews the application and decides to grant or deny the license. If a grant decision is arrived at, the head of biodiversity prepared and prints the permit, and forwards it to the director for signing and subsequent dispatch. On the other hand, if a deny decision is arrived at, the applicant is notified of the same through a letter. The letter outlines reasons for not granting the license.

The head of biodiversity sends a copy of the permit to ecosystem conservators who are the heads of KFS at the county level. This ensures that the relevant authorities are informed and there is monitoring and compliance of the research on the ground where research is being carried out. The head of biodiversity also files a copy of the permit.

The researchers are required to give feedback as they carry out research and on completion of

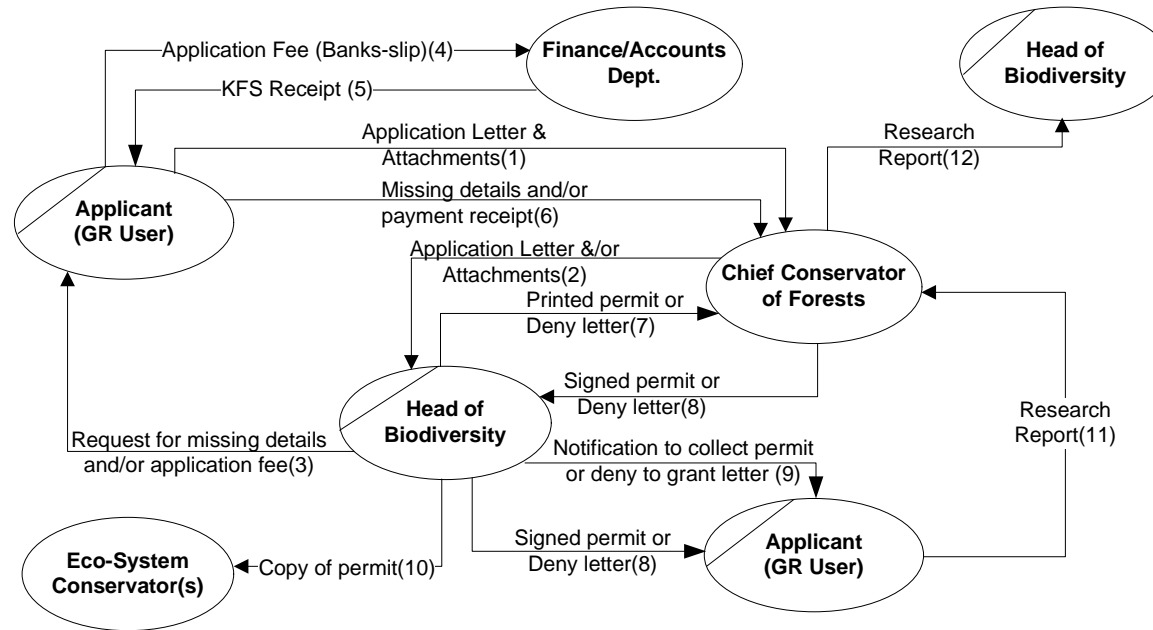
their research.

In cases where the research involves a resource at the community level, the community forest association which is registered by register of societies signs a PIC with the researcher, which the researcher then takes to KFS who in turn sign the MAT then issue a license.

2.15. Document Flow Diagram

From the narrative above, we identified the various documents in the permit application process and show how they flow in the course of carrying out a permit application process. This is summarized in the following diagram below.

PROCESS OF ACQUIRING A RESEARCH PERMIT FROM KFS: DOCUMENT FLOW DIAGRAM



KEY

GR: Genetic resource

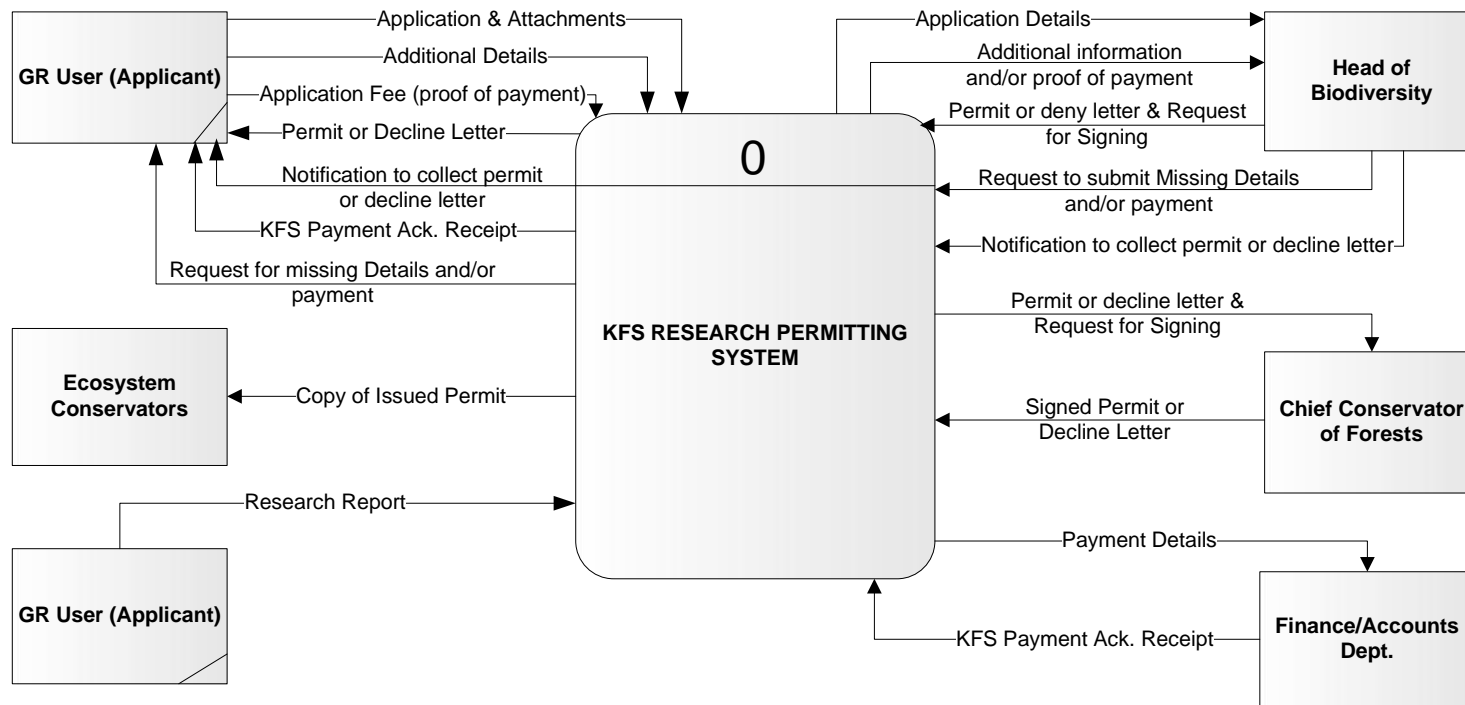
Attachments include

- A research proposal describing the research that is to be carried
- A NACOSTI research permit
- A Prior Informed Consent (PIC) with MAT (where applicable).
- Identification documents (ID/Passport for foreigners)
- Letter of affiliation for foreigners
- Letter from host institution for Kenyans

2.16. Context Diagram

Further to the document flow diagram, we can schematically view the interaction of the various users (both internal staff and external (permit applicants)) as well as the various departments in the form of a context diagram as shown below.

PROCESS OF ACQUIRING OF A RESEARCH PERMIT FROM KFS: CONTEXT DIAGRAM

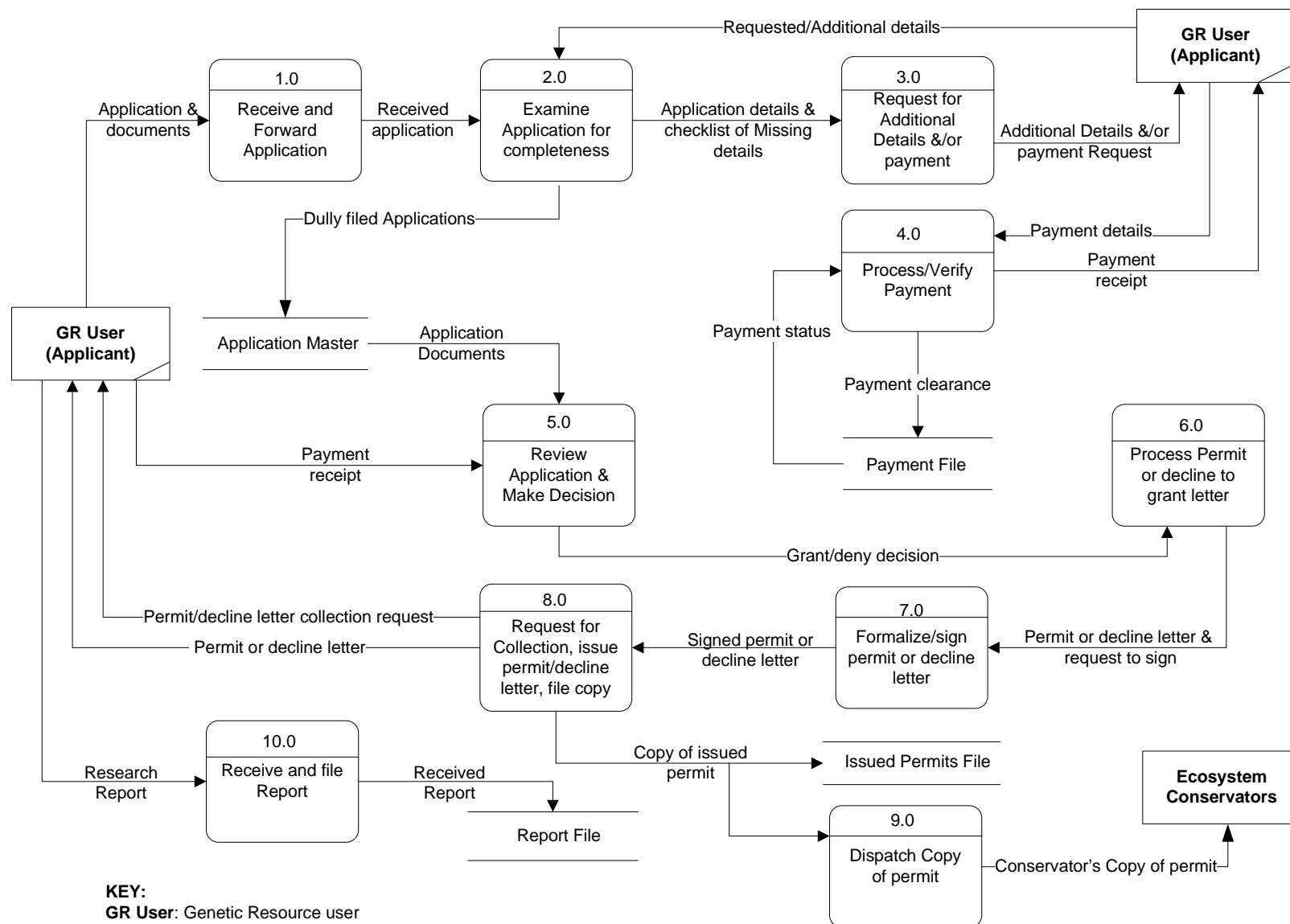


KEY:
GR User: Genetic Resource user

2.17. Data Flow Diagram

Another representation is one that takes into account the flow of data/information in the permit application process. This is summarized in the following figures below

PROCESS OF ACQUIRING OF A RESEARCH PERMIT FROM KFS: DATA FLOW DIAGRAM

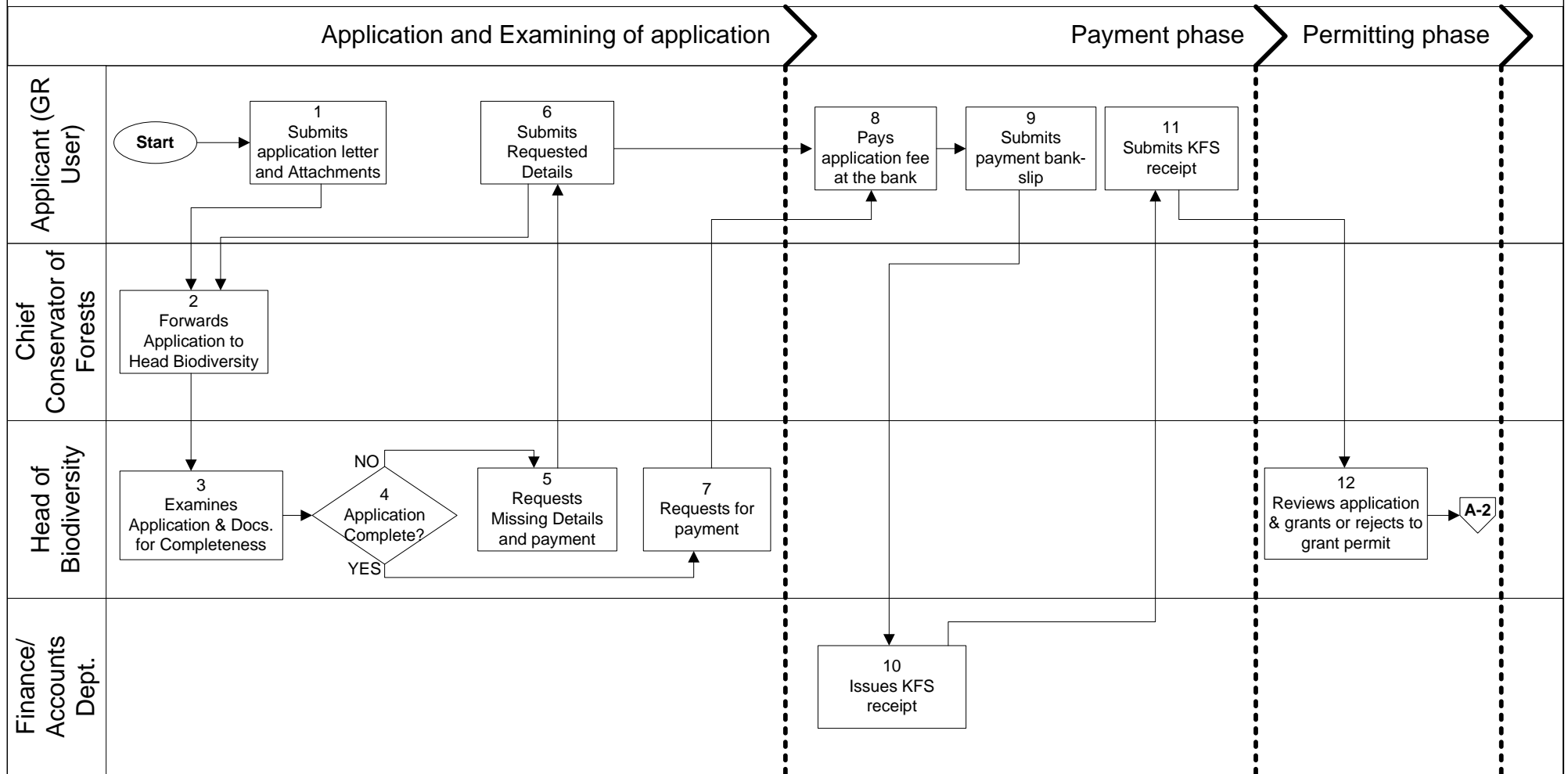


2.18. Swim Lanes

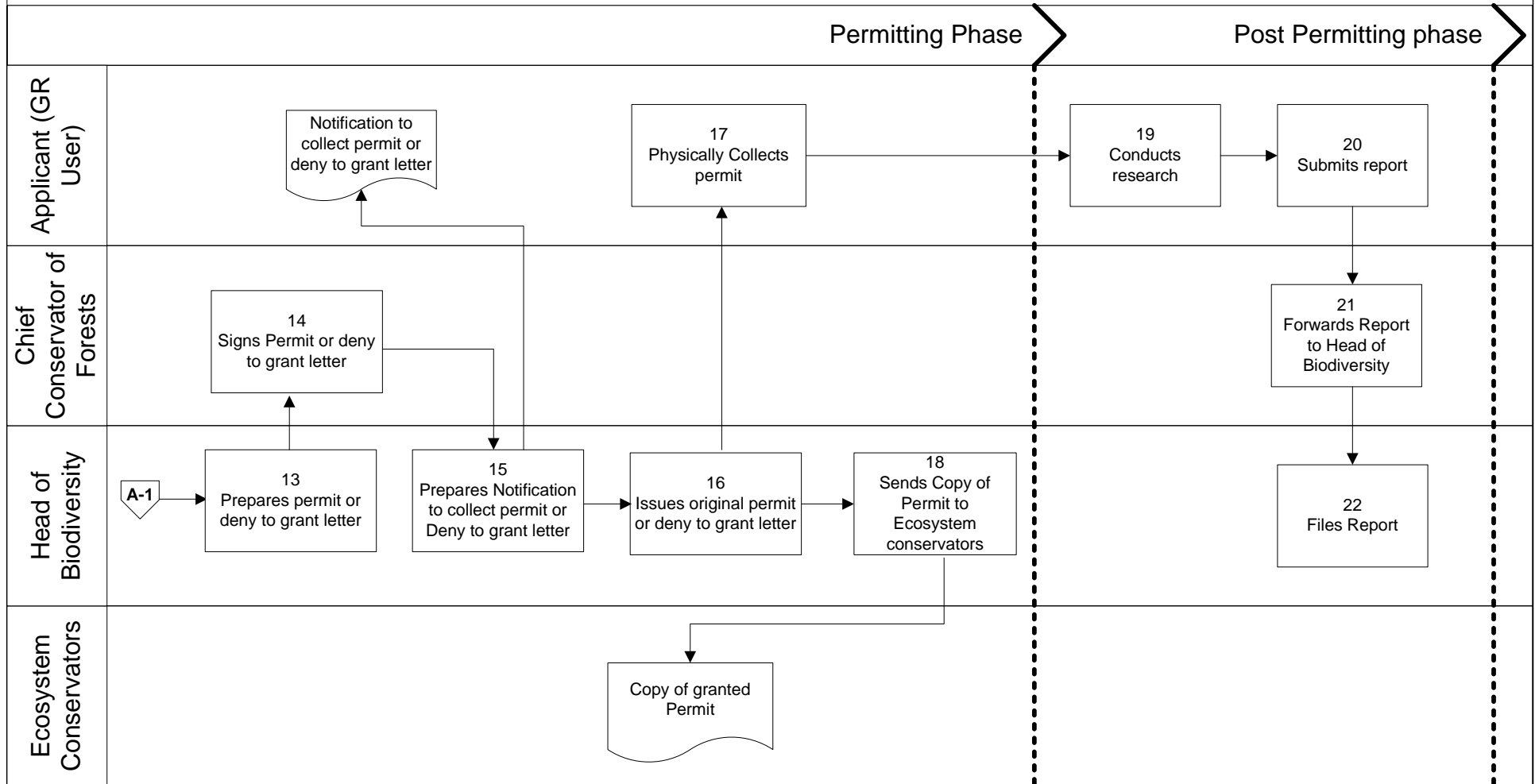
A swim lane (or swim lane diagram) is a visual element used in process flow diagrams, or flowcharts that visually distinguishes job sharing and responsibilities for sub-processes of a permit process. Swim lanes may be arranged either horizontally or vertically. In this document we choose the vertical representation. Each column represents either the officer, or department or entity that is plays a role in carrying out a permit process at KFS.

In this section we show detailed activities that are involved as sub-processes of the core permit processes identified. Visually, the swim lanes are cross-functional and they show the sharing of responsibilities in a given permit process. Below are the sub-processes that were identified from the as is study of processes at KFS.

Process of Acquiring a research permit from KFS



Process of Acquiring a research permit from KFS



2.19. Use cases

KFS AS-IS SYSTEM: USE CASE SUMMARY

Sn	Use case name	Purpose	Input	Source of input	Output	Output recipient(s)
01	Receive and forward application	Allows the User to submit an application for a research permit	Application letter and supporting documents	Applicant	Received application	Chief conservator of forests
02	Examine application	To ensure that the application is complete	Received application	Chief conservator of forests	Complete or incomplete application status	<ul style="list-style-type: none"> ▪ Head of biodiversity ▪ Applicant
03	Request additional details & payment	To notify the applicant that the application is not complete and request for additional details and/or request the applicant to pay application fee	<ul style="list-style-type: none"> ▪ Application details and checklist of missing details 	Head of Biodiversity	Additional Details &/or payment Request	Applicant
04	Process/ Verify Payment	To ensure that the correct fee has been paid by the applicant and acknowledge payment of application fee	<ul style="list-style-type: none"> ▪ Payment details 	Applicant	<ul style="list-style-type: none"> ▪ Payment receipt 	<ul style="list-style-type: none"> ▪ Applicant
05	Review application & make decision	The review the proposed project and decide whether to grant or deny a research permit	Research proposal/ Application and payment receipt	Applicant	Grant or deny decision	Head of biodiversity

06	Process permit/decline letter	To process the research permit if a grant decision is arrived at, or a decline letter in case a decline decision is arrived at	Grant or deny decision	Head of Biodiversity	Printed permit/decline letter & request to sign	Chief Conservator of forests
07	Formalize/ sign permit or decline letter	To formalize the issued permit or decline letter	Printed permit/ decline letter & request to sign	Head of Biodiversity	Signed permit/decline letter	Head of Biodiversity
08	Request for Collection, issue permit/decline letter, & file copy	To send a request to the applicant to collect the permit or decline letter, and file a copy of the same.	Signed permit or decline letter	Chief conservator of forests	Request to collect permit, and filing copy.	▪ Applicant
09	Dispatch Copy of permit	To send a copy of the permit to ecosystem conservators at the counties	Copy of permit	Head of Biodiversity	Conservators' copy of permit	Ecosystem conservators
10	Receive and file report	To Receive and file research report submitted by the researcher	Research report	Applicant (Researcher)	Filed Report	Head of Biodiversity

2.20. Narrative of NACOSTI AS-IS

NARATIVE OF ADMINISTRATIVE REVIEW PROCESS AT NACOSTI

The National Commission for Science, Technology and Innovation (NACOSTI) is an advisory institution of the Government of Kenya on matters of science, technology, innovation and research. NACOSTI is responsible for regulating and coordinating research in Kenya. All researchers intending to conduct research are required to seek clearance/obtain a research-permit from NACOSTI.

To apply for a research-permit, an Applicant accesses an Online Research Information System (ORIS) and creates an account—if they do not have an already existing account. To create an account, the applicant is required to fill in registration details. The details include: Bio data, name of the researcher's Institution, Residence, Contact details, academic qualifications, and, area of specialization. The applicant is also required to Upload a passport-size photo in JPG format, and a scanned copy of national ID or passport in PDF format. The applicant then submits the registration details. ORIS then creates an account and sends login credential to the applicant's email address.

The applicant then logs into the account to apply for a research permit. After log-in the applicant is required to fill in project details (such as the project title, purpose for the research, area of research etc.), personal references, source of funding, details on affiliation institution, and upload supporting documents. Supporting documents include: a letter of introduction from the researcher's institution, letter from the institution of affiliation (especially for foreign researchers), a dully signed research proposal. A certificate of ethical approval is required for health science researches.

The applicant is also required to pay a research-permit fee as per the NACOSTI regulations. The payment-slip is attached to the research proposal as the last page. After all sections of the application have been completed, the applicant submits the application.

Registry access submitted applications and examines them. If an application is incomplete or has some issues, the applicant will be notified of the same for them to act accordingly. On the other hand, if an application is correctly done and all required documents have been provided, registry forwards the application to finance for verification of payment. If finance discovers any discrepancies with payment, the applicant is requested to take remedial action. If the correct amount is paid, finance clears and submits the application. ORIS automatically forwards the application to a research specialist—based on the area of research.

Upon receiving an application, a research specialist will review the proposal. The research specialist may establish that the proposed research or some of its aspects fall outside their area of expertise. In such a scenario, the research specialist will send a request to a system administrator for the application to be assigned to a different specialist.

After reviewing of the proposal, the research specialist forwards the application—with comments/advice, to the head of research. The head of research will either approve or decline to

approve the issuance of a research permit—based on the advice of the research specialist. The application is then forwarded to registry.

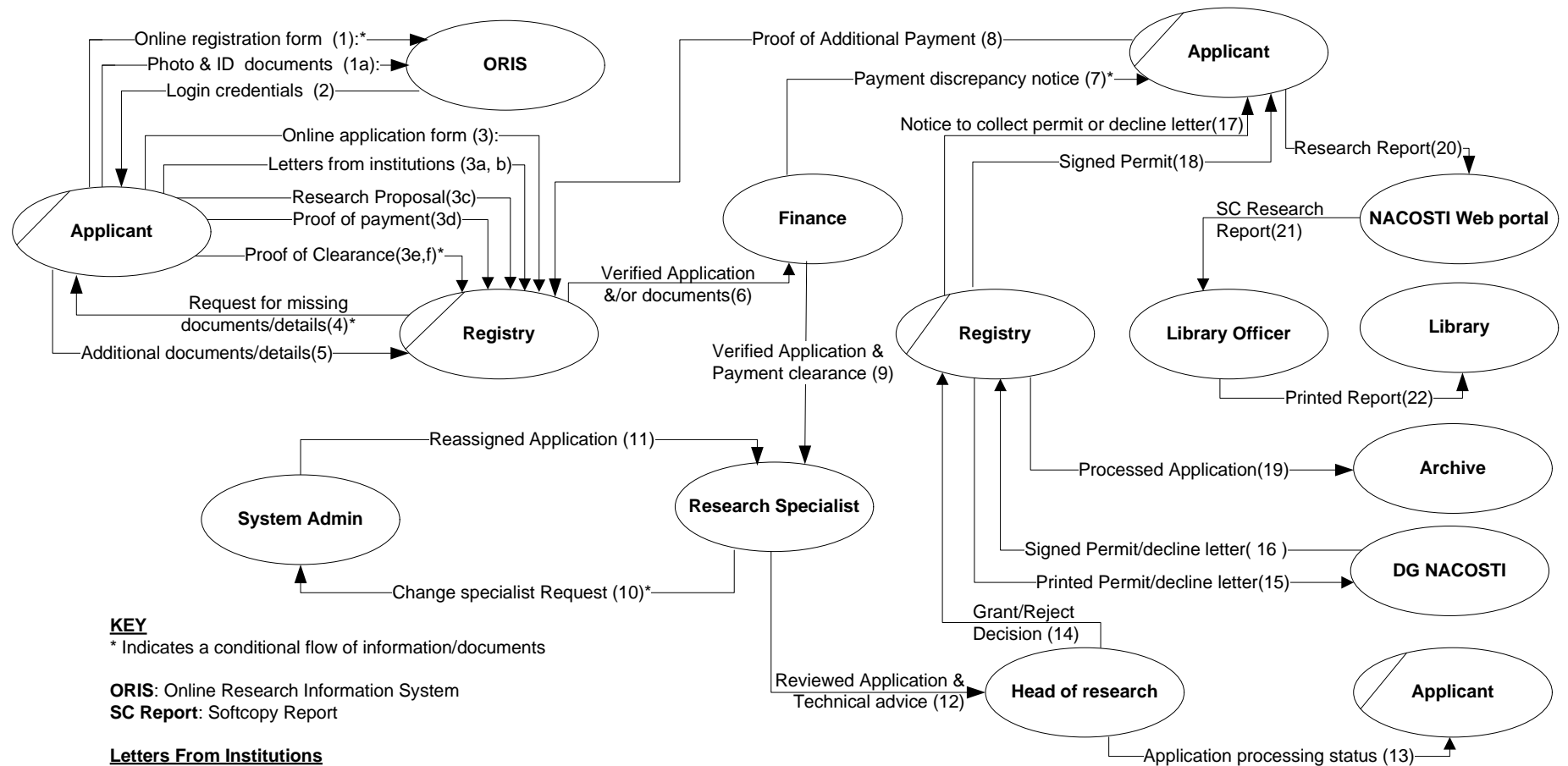
For all approved cases, registry processes, prints, and forwards a permit to the director general for signing. Registry notifies the applicant that the permit is ready for collection. The applicant then collects the permit from NACOSTI. For all declined requests, the applicant is notified of the same, and grounds for the decision are given.

After completion of research, the researcher is required to upload a research report to the NACOSTI portal, after which a library officer will download, print and stock the report in the library.

2.21. Document Flow Diagram

From the narrative above, we identified the various documents in the permit application process and show how they flow in the course of carrying out a permit application process. This is summarized in the following diagram below.

PROCESS OF ACQUIRING A RESEARCH PERMIT FROM NACOSTI: DOCUMENT FLOW DIAGRAM



KEY

* Indicates a conditional flow of information/documents

ORIS: Online Research Information System

SC Report: Softcopy Report

Letters From Institutions

3a: Letter from academic/research institute

3b: Letter of affiliation (for foreign researchers)

Proof of Clearance

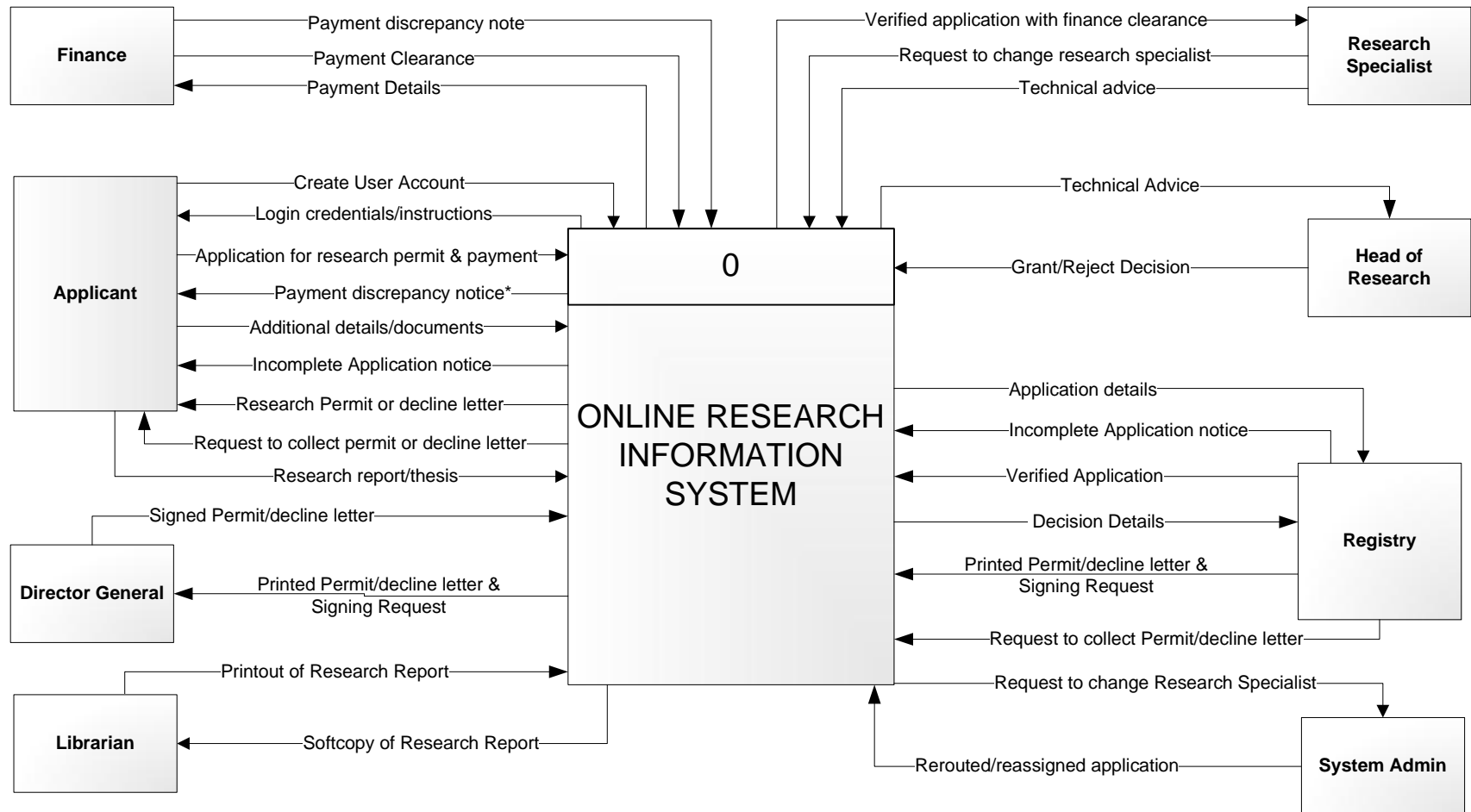
3e: Letter from resource provider.

3f: Letter of ethical Approval (For Health sciences research)

2.22. Context Diagram

Further to the document flow diagram, we can schematically view the interaction of the various users (both internal staff and external (permit applicants)) as well as the various departments in the form of a context diagram as shown below.

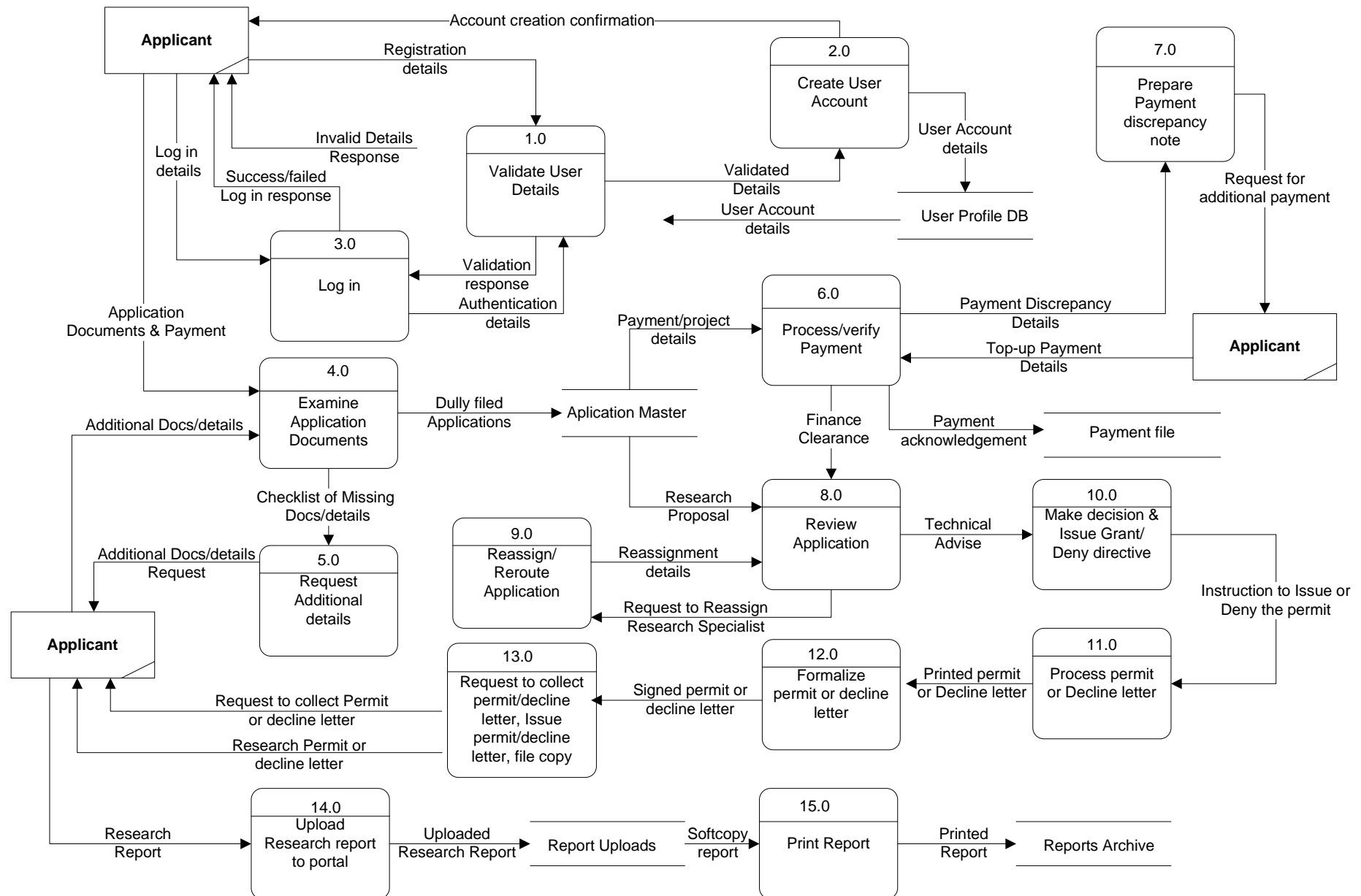
PROCESS OF ACQUIRING A RESEARCH PERMIT FROM NACOSTI: CONTEXT DIAGRAM



2.23. Data Flow Diagram

Another representation is one that takes into account the flow of data/information in the permit application process .This is summarized in the following figures below.

PROCESS OF ACQUIRING A RESEARCH PERMIT FROM NACOSTI: DATA FLOW DIAGRAM

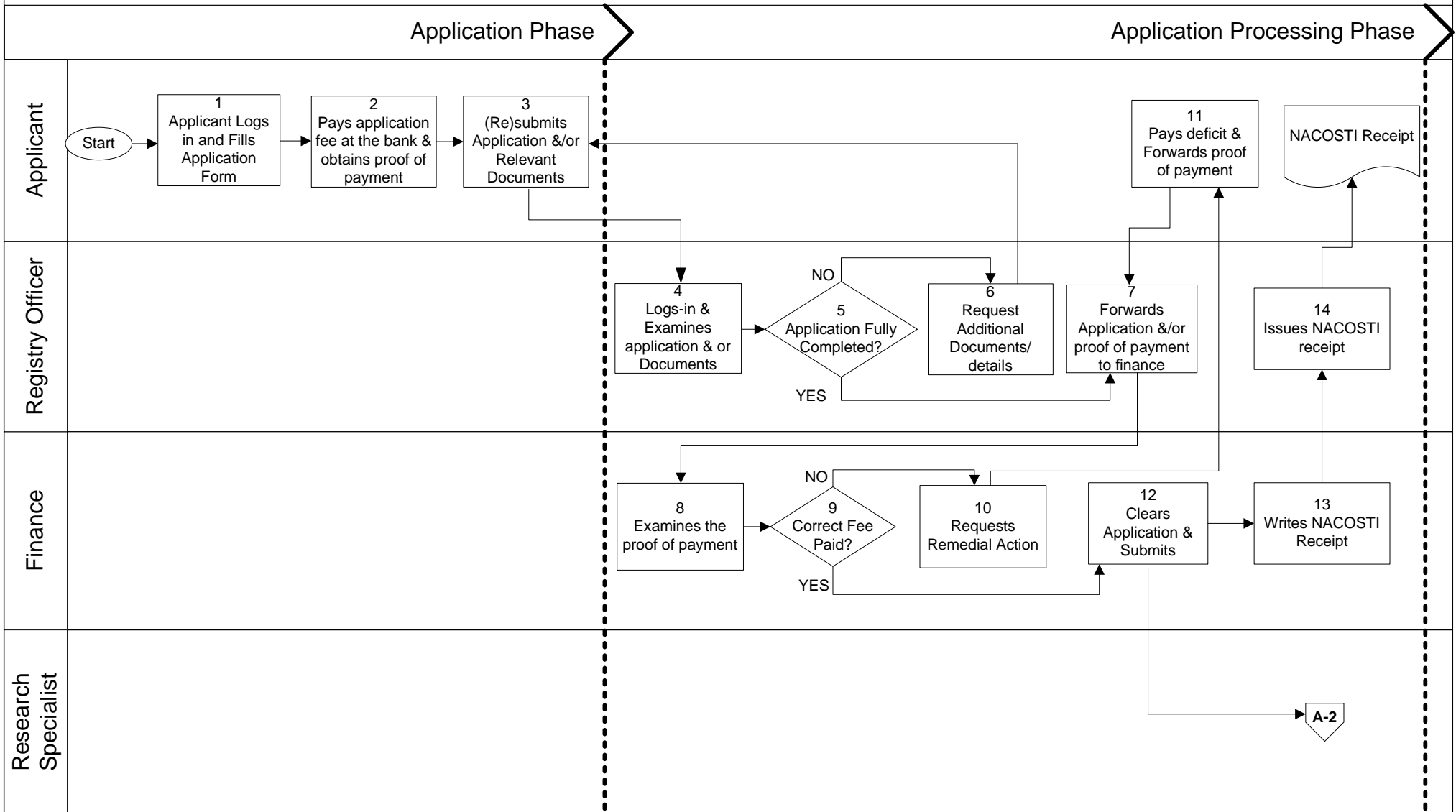


2.24. Swim Lanes

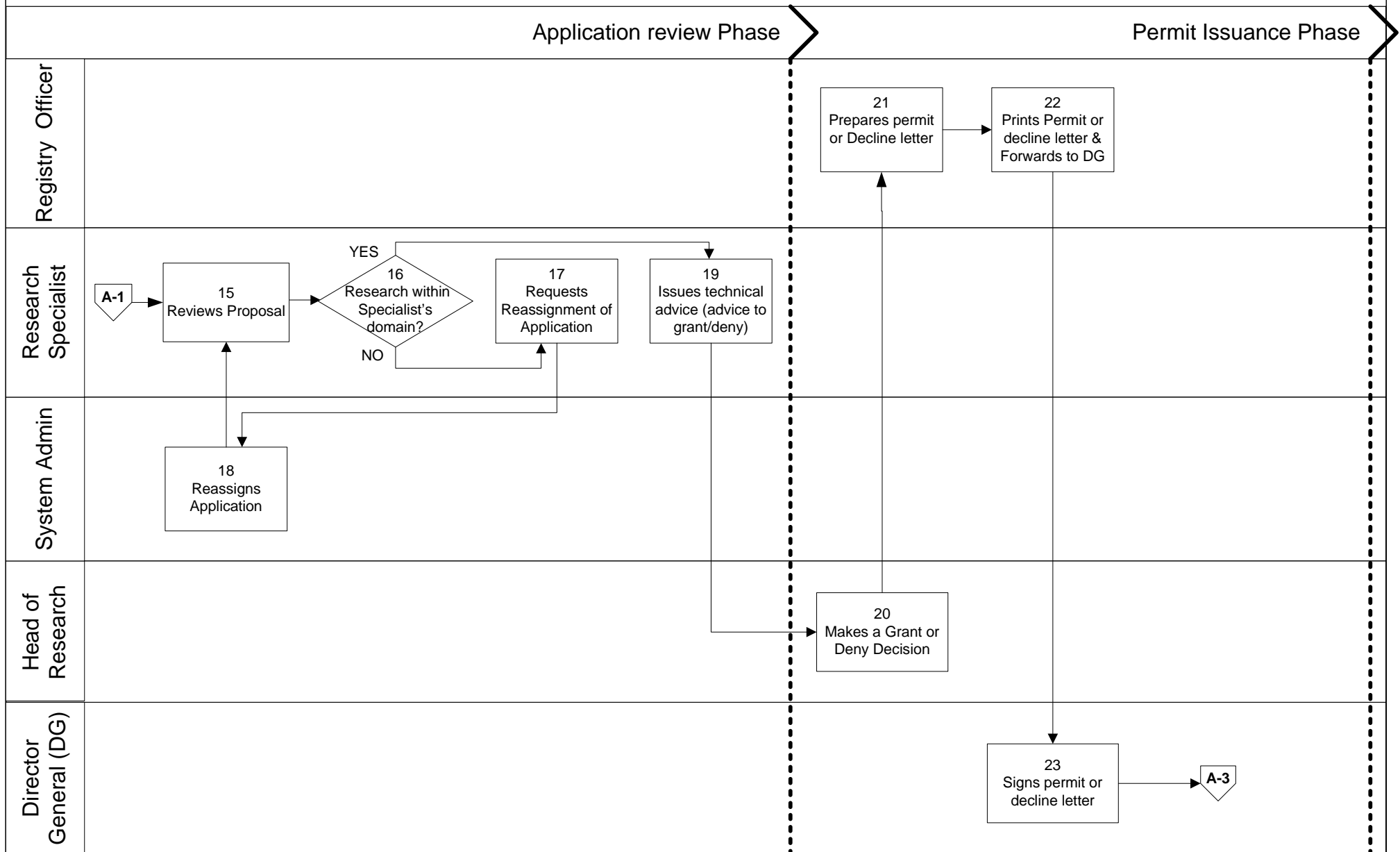
A swim lane (or swim lane diagram) is a visual element used in process flow diagrams, or flowcharts that visually distinguishes job sharing and responsibilities for sub-processes of a permit process. Swim lanes may be arranged either horizontally or vertically. In this document we chose the vertical representation. Each column represents either the officer, or department or entity that is plays a role in carrying out a process at NACOSTI.

In this section we show detailed activities that are involved as sub-processes of the core permit processes identified. Visually, the swim lanes are cross-functional and they show the sharing of responsibilities in a given business process. Below are the sub-processes that were identified from the as is study of processes at the NACOSTI.

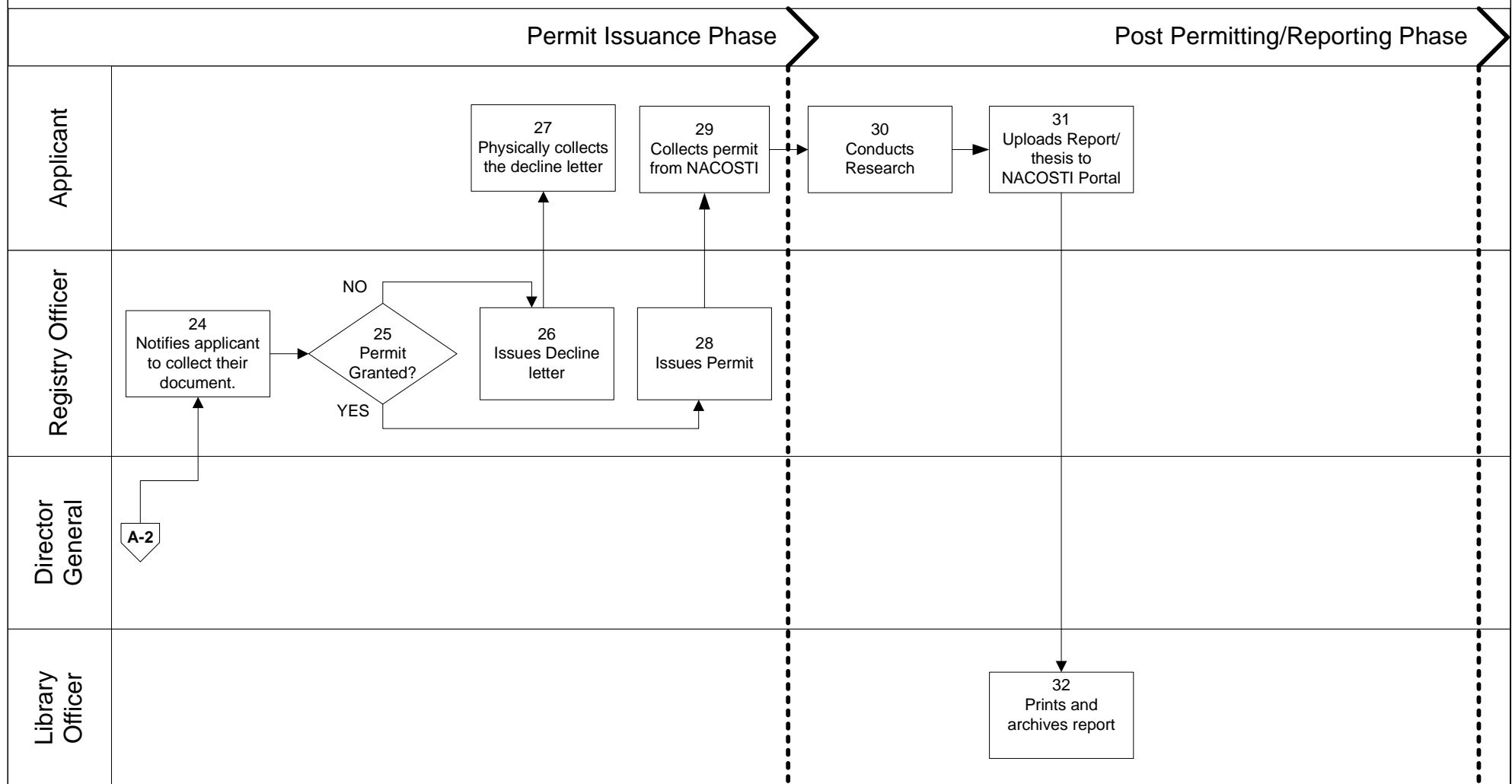
Process of Acquiring a Research Permit From NACOSTI



Process of Acquiring a Research Permit From NACOSTI



Process of Acquiring a Research Permit From NACOSTI



2.25. Use cases

NACOSTI AS IS SYSTEM USE CASE SUMMARY

Sn	Use case name	Purpose	Input	Source of input	Output	Output recipient(s)
01	Create account	Allows the User to create a login account and become a Registered User.	<ul style="list-style-type: none"> Registration form/details. Attachments (pp. photo, ID/passport) 	New Applicant	User account (login credentials)	New applicant
02	Log in	To gain access to the permitting system (ORIS)	<ul style="list-style-type: none"> User name Password 	Registered user	<ul style="list-style-type: none"> Invalid log-in credentials notification Access to System 	Registered user
03	Examine Application documents	To ensure that the application is complete	<ul style="list-style-type: none"> Application form and relevant attachments 	Applicant	Complete or incomplete application status, checklist of missing details	<ul style="list-style-type: none"> Applicant Registry
04	Request additional details	To notify the applicant that the application is not complete and request them to submit missing details	Checklist of missing details/documents	Registry	Request to submit missing details	Applicant
05	Process/verify payment	To ensure that the correct fee has been paid by the applicant	<ul style="list-style-type: none"> Complete application Proof of payment (Bank slip...) 	Registry	<ul style="list-style-type: none"> Payment discrepancy details Cleared Application 	<ul style="list-style-type: none"> Finance Officer Registry
06	Prepare	Enables the	Payment	Finance	Request for	Applicant

	Payment discrepancy note	finance officer request the applicant to pay application fee deficit	discrepancy details		additional payment	
07	Review Application	To review the application in order to decide whether to grant the permit or not.	Research proposal, and finance clearance	<ul style="list-style-type: none"> ▪ Registry ▪ Finance 	Technical advice	Head of research
08	Reassign/ Reroute Application	Enables the reassignment of an application to a research specialist with requisite knowledge on the project being proposed.	Request to change research specialist	Research specialist	Reassignment notification	Research specialist
09	Make decision & Issue Grant/Deny directive	To make a decision and issue a directive of whether to grant or deny a permit	Technical advise	Research specialist	Instruction to issue or deny the permit	Registry
10	Process permit/ decline letter	To process a research permit/ a decline letter	Instruction to issue or deny the permit	Head of research	Printed Research permit or decline letter.	Director general
11	Formalize permit or decline letter	To formalize the issued permit, or	Printed permit or decline letter	Registry	Signed permit or decline letter	Applicant

		decline letter				
12	Communicate Application status	To notify the applicant to collect a permit or decline letter	Instruction to issue or deny the permit	Head of research	Request to collect permit or decline letter	Applicant
13	Upload report	To upload a research report to the NACOSTI portal after completion of research.	Copy of research report/thesis	Applicant	Research report/theses	Library officer and member of public
14	Print report	To print the research report submitted by the researcher.	Copy of research report	Applicant	Printed report	NACOSTI library

2.26. Narrative of KEPHIS AS-IS

NARATIVE OF ADMINISTRATIVE REVIEW PROCESS AT KEPHIS

Kenya Plant Health Inspectorate Service (KEPHIS) is a State Corporation whose mandate includes regulation of all matters related to plant health and quality control of agricultural inputs and produce among others. KEPHIS is Kenya's National Plant Protection Organization (NPPO) mandated to undertake operational responsibilities in relation to export certification, including sampling and inspection of plants, plant products and other regulated articles; detection and identification of pests; surveillance of crops; performance of treatments; and establishing and maintaining a record-keeping system.

Export certification is crucial to ensure that consignments meet specified Phytosanitary requirements of the importing country at the time of inspection.

An export inspection of a consignment may result in the issuance of a phytosanitary certificate for the consignment or notification of non-compliance if the consignment does not meet requirements.

The main concentration of KEPHIS work is on trade facilitation and certification. The main areas of work are:

- i) Phytosanitary (Plant health)
- ii) Plant material Biological material (Bio control) – in this area KEPHIS usually with research institutes
- iii) Regulated Articles e.g. soil, water etc.

KEPHIS issues two types of permits for imports to applicants namely:

- i) Normal “regular” permits.**
- ii) Restricted permits for imports.**

KEPHIS issues two types of certificates for Exports to applicants namely:

- i) Phytosanitary certificate**
- ii) Re-Export Phytosanitary certificate**

There are 2 types of restricted import permits i.e

Quarantine permit: This needs a Q label. A quarantine permit is a permit that requires that quarantine allows the imported material to be kept for tests and observation either in KEPHIS facilities or client quarantine facilities (but KEPHIS inspected). The requirement is normally a proposal. There must also be proof of affiliation with an institution in Kenya. All bio control materials need a Material Transfer Agreement (MTA).

Biological Import Permit:

If the material is considered prohibited or a new type of biological resource/strain or agricultural input, then KEPHIS does not issue a permit. The client/ applicant is advised to first seek an approval from the Kenya standing technical committee on import and export. KEPHIS serves as the secretariat of the Committee. If the application to KSTCIE is approved, then KEPHIS can process the application and the normal PIP application process is followed.

The Certification Process description and existing systems

i) Plant and Plant Products:

All plants and plant products exported from the country are inspected to ensure they are free from any pest before a phytosanitary certificate/permit is issued. Inspection is usually done during active growth of plants destined for export market and at exit points where inspection of all material for export is done. This is done to ensure compliance to the recommended quality standards of importing country and freedom from pests or any foreign material.

Usually samples are inspected according to the type and volume of the commodity. Inspection levels are determined by the assessed risk of the commodity.

The following steps are followed during inspection:

- ✓ Document verification (i.e. invoice, plant import permit (detailing condition for importation, quantity allowed, validity of the permit, plant species allowed for export)
- ✓ Produce presentation for inspection in the ware house
- ✓ Sampling, inspection and documentation (issuance of phytosanitary certificate).

When inspecting at the exit points, the following standards are checked:

- Freedom from pests/pest damage
- Freedom from diseases/disease damage
- Maximum Residue Levels compliance
- Has no physiological disorders
- Properly graded (size, color, shape etc.)
- Has no excessive moisture
- Whole (No mechanical damage)
- Packaging (clearly labeled, clean and well ventilated)

ii) Biological control organisms:

KEPHIS issues Phytosanitary certificates for exportation of biological control agent or products of biological nature from the country mainly intended for research purposes. If the materials are from the wild the applicant must first get a PIC permit from KWS [this has been mainly for exports]. If from the gazetted forests the applicant starts at the Kenya Forest.

For Exports, an applicant is required to provide KEPHIS with :

- A material transfer agreement (MTA) from the importing country. An annual audit of facilities multiplying or producing such materials is usually conducted to ensure compliance to quality standards.
- An import permit (import requirements) for research materials from the importing country or regional block.

KEPHIS is currently using two computerized systems namely Electronic Certification System (ECS) and Plant Import and Quarantine Regulatory system (PIQRS) which is available on the links ecs2.kephis.org for exports & ics.kephis.org for imports respectively.

Electronic Certification System (ECS)

The number of Phytosanitary certificates issued annually by KEPHIS has continued to grow tremendously in the past resulting in much time spent processing the certificates using a manual system. This led to delayed consignment clearance. Electronic Certification System (ECS) was thus conceptualized in order to introduce a certification process that would take less time, enhance convenience and cost effectiveness. The concept was actualized by customizing and implementing an e-certification system referred to as Client Tool in the Netherlands. After successful development and testing, the Electronic Certification System under CLIENT Kenya was officially launched on 19th April 2011. The system is in use currently. This system is mainly for **EXPORT**.

In the current system the processes involved when applying for a phytosanitary certificate are:

- (a) A new certificate applicant first registers (provides bio data). A password and log in details are sent to his/her email account.

- (b) The applicant Logs in and files a for request for inspection

- (c) Apply (e.g. to export) Specify commodity, in what form, quantities, to where, where to be inspected, what time, the approximate distance from the nearest KEPHIS inspection office etc.

- (d) The application is scheduled (allocated inspector). At this point of inspection the application is also checked to a certain evidence of payment which may be for inspection fee, Inspection Logistics fees, Mileage charges etc.

- (e) Inspection of the material Upon material inspection two verdicts can be reached ☐ Reject / condemn the application (giving reasons and recommendation – e.g. a further inspection and an email sent to the applicant) ☐ Pass the application then send for printing

- (f) Printing of certificate and the applicant is notified to come and collect

- (g) The applicant comes to collect the certificate

2. Plant Import and Quarantine Regulatory system (PIQRS) available at ics.kephis.org

The Plant Import and Quarantine Regulatory System (PIQRS) is a Business to Government and Government to business web based system designed to enhance efficiency in plant import regulation. PIQRS forms an integral part of overall KEPHIS regulatory activities which ensure that imported Plants, Plant Products and regulated articles entering into the country pose minimal

Phytosanitary risk and environmental impact. Anyone intending to bring plants, plant products and regulated articles into Kenya MUST obtain a Plant Import Permit (PIP) or Biological Import Permit (BIP) from KEPHIS prior to shipment of such plants from the origin regardless of whether they are for commercial purpose, duty free, gifts, experimental or research purposes. The system is mainly used for IMPORT control and permit issuance.

The following is a brief process description of the permit application and acquisition process:

a) A potential permit applicant first has to apply for client or agent registration if not yet registered (they provide bio data i.e. Name, client type, physical address, postal address, contact information, other info- VAT- PIN)

(b) Upon registration or if already registered an applicant logs in and launches a permit request specifying purpose of the permit i.e. whether for research, Consumption, Trade etc.

(c) Request for import permit Here the type is determined by the conventions that guide specific plants e.g. Kenya is a signatory to the IPPC International Plant Protection Convention under FAO. Once inspection is done, such a body is also notified. 3 types of import permits:

- Normal permit
- Quarantine permit for quarantine material
- Biological Import permit (BIP) for new organisms or/and biological material.

For other permits other than normal permits, the process is as follows:-

i. If Quarantine (Client must request for a KEPHIS facility or declare his/her quarantine facility) :

1. Facility is inspected and cleared
2. Permit is generated and a Q Label is affixed on the permit for the inspector and also customs

ii. If Biological material or new organisms:

1. No permit is issued initially. The client can apply via the system
2. System shows the permit is applied.
3. KSTCIE is notified.
4. The client provides copies of organism information for risk assessment.
5. Approval Decision of the KSTCIE (mainly Main committee minutes) are attached

or a formal letter of Approval from the MD KEPHIS on behalf of KSTCIE.

6. THE Client/Applicant can then apply online (uploading the approval documents).

7. The whole normal process is followed again

(d) Having been issued with a PIP, a client/Applicant physically imports the consignment

(e) Inspection is carried out on the imported consignment.

It is important to note the following Import permits are valid for 6 months. Ethiopia and South Africa are the only African countries that have tight protection of their Genetic resources. Registration is not Automatic there is vetting. The requirements include KRA PIN, HCDA conformance certificate, ID of director, etc.

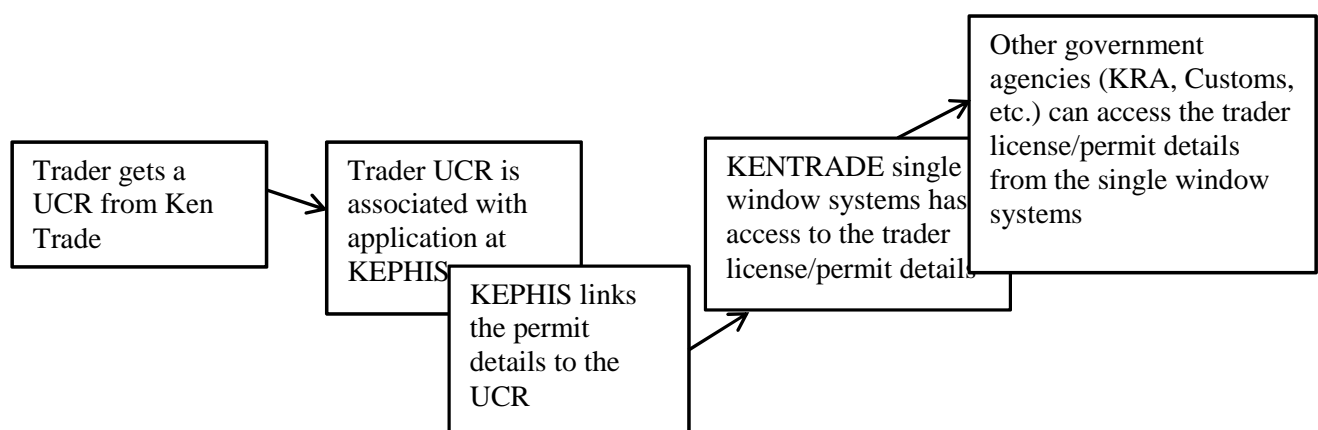
The link between KEPHIS and ABS

Whereas KEPHIS is primarily on facilitating trade, there are important areas of convergence with genetic resources for example propagation materials (Exchange of seeds). Other players;

- i. OECD – sets standards for seed certification to allow trade
- ii. IRST – tests genetic purity, germination rates, phytosanitary attributes
- iii. International union of Plant breeders

KEPHIS participation in the KENTRADE single window system

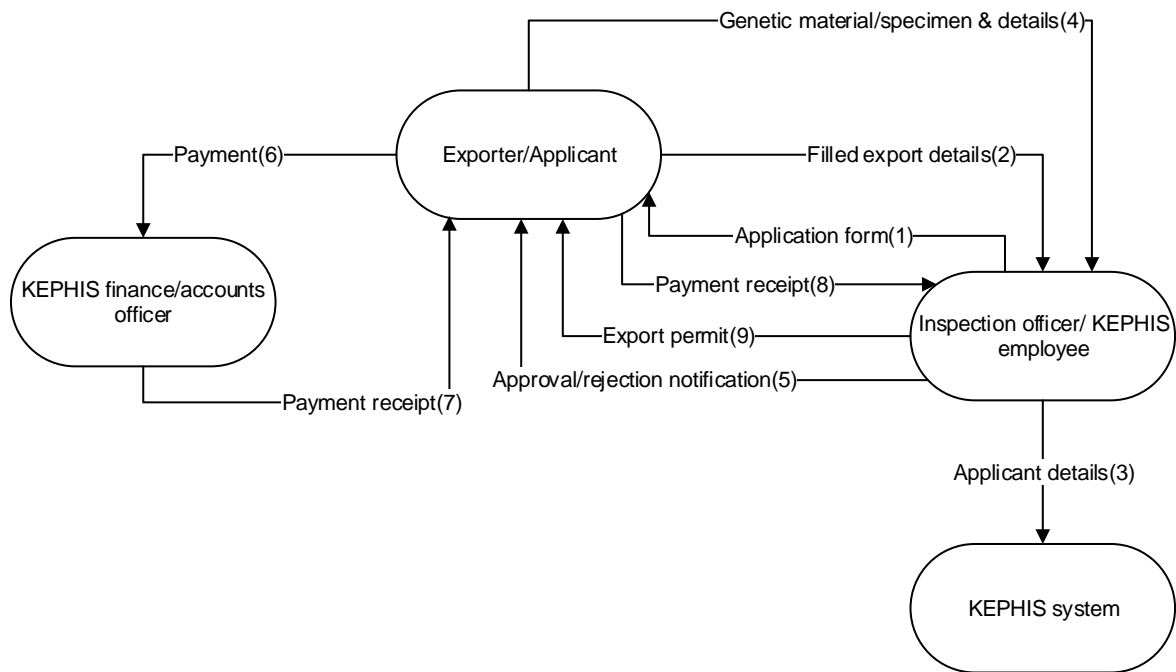
The following diagram is an illustration of KEPHIS participation in the KENTRADE single window system



2.27. Document Flow Diagram

From the narrative above, we identified the various documents in the permit application process and show how they flow in the course of carrying out a permit application process. This is summarized in the following diagram below.

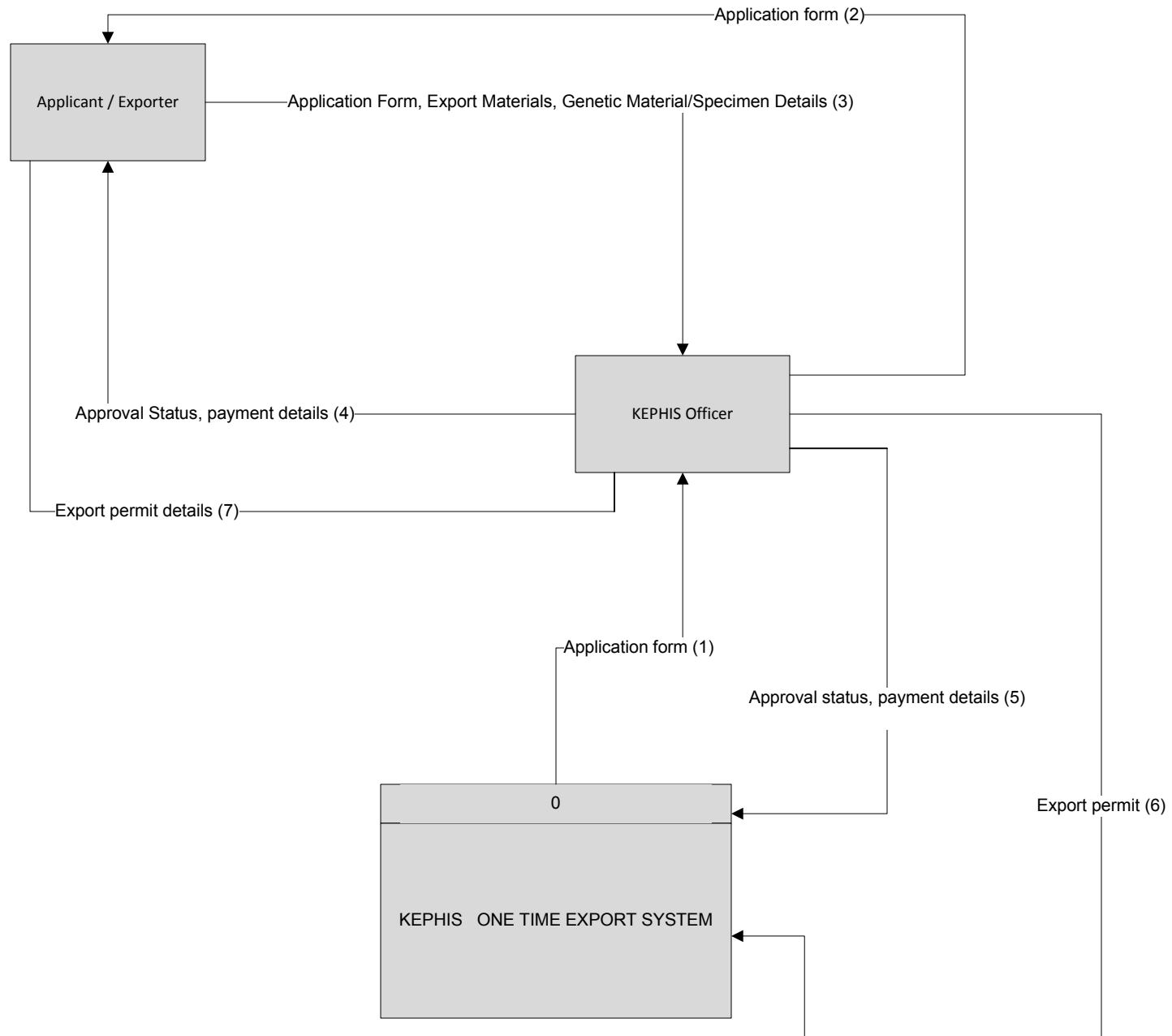
KEPHIS ONE TIME EXPORTER DOCUMENT FLOW DIAGRAM



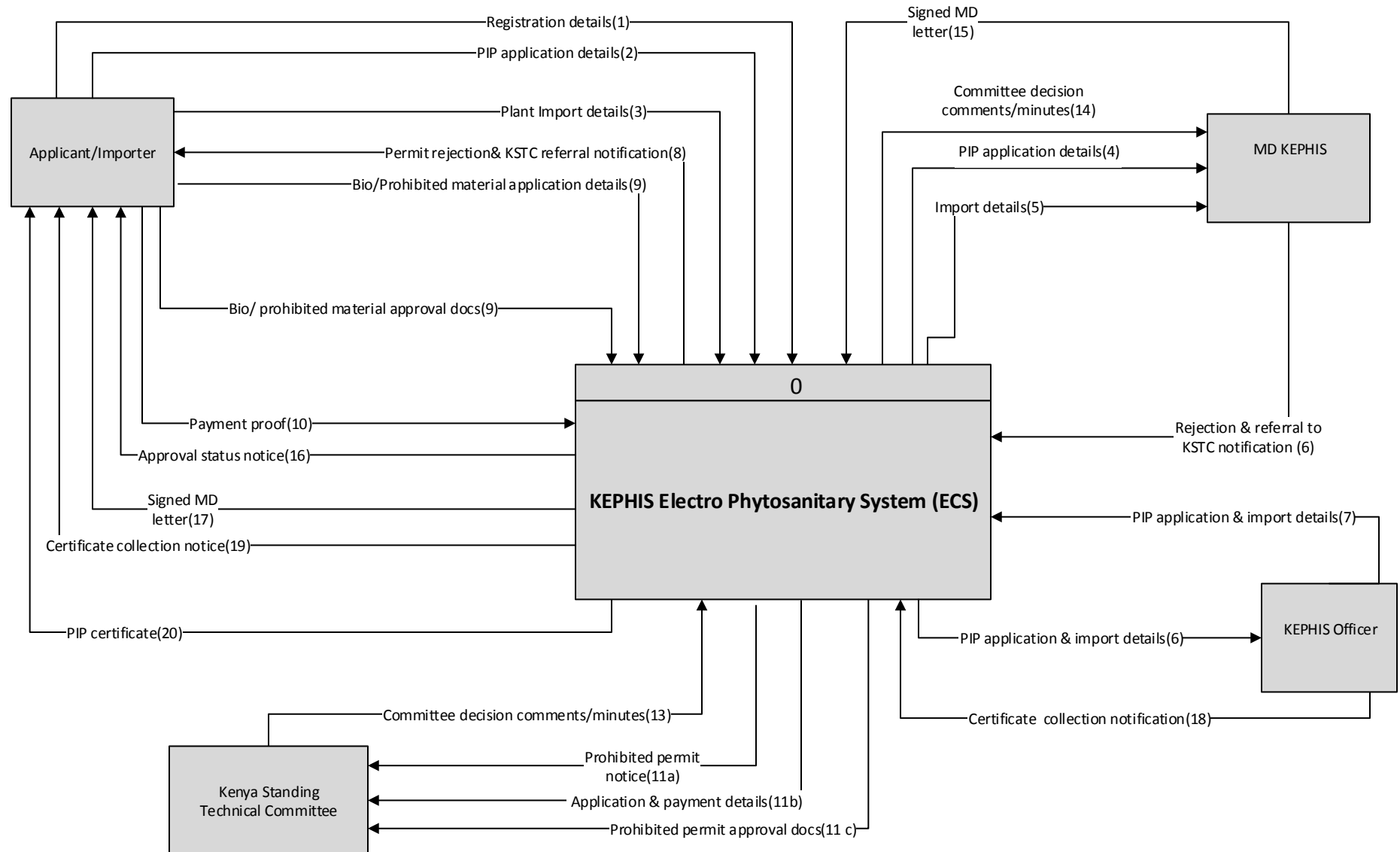
2.28. Context Diagram

Further to the document flow diagram, we can schematically view the interaction of the various users (both internal staff and external (permit applicants)) as well as the various departments in the form of a context diagram as shown below.

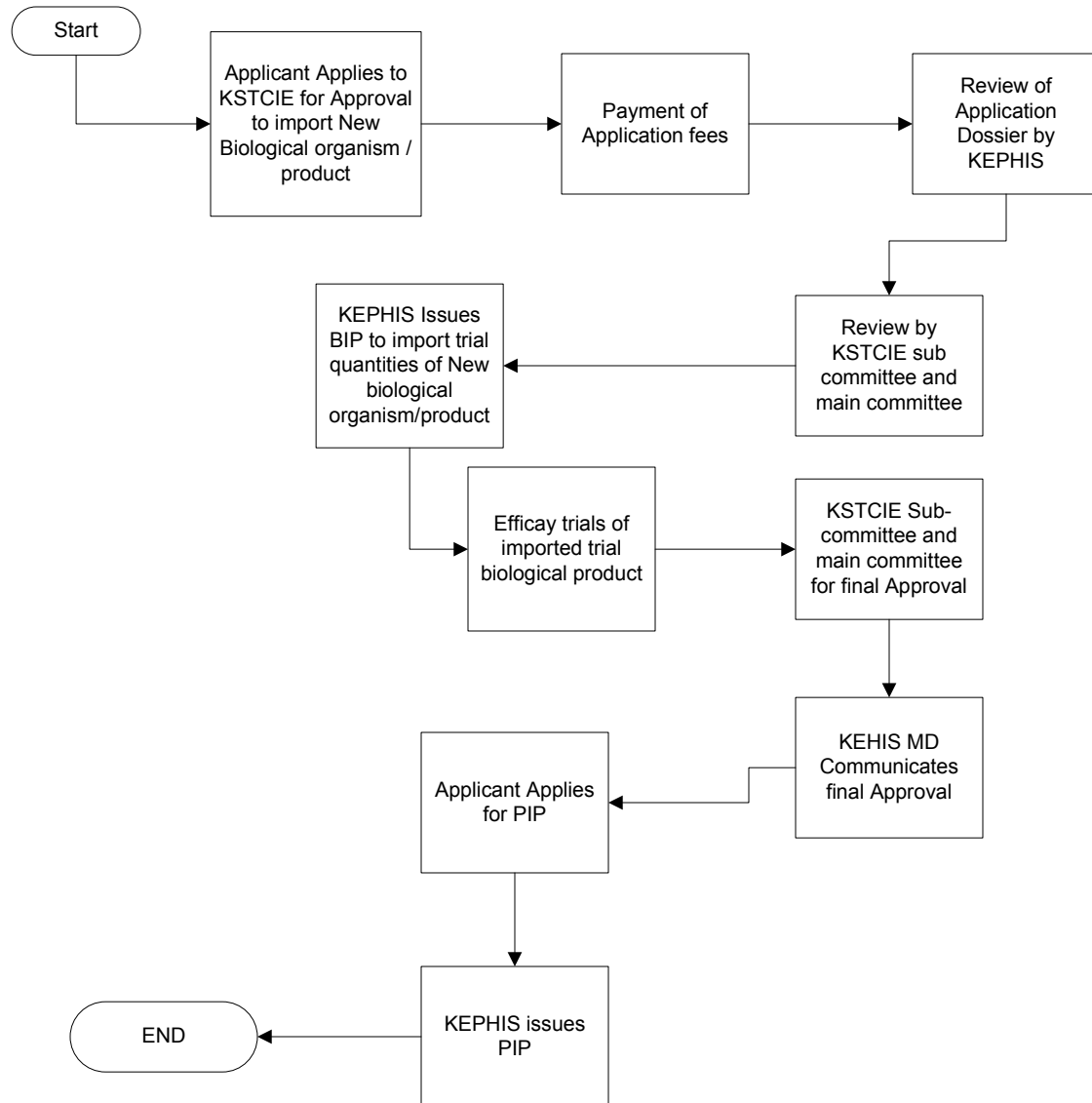
KEPHIS ONE TIME EXPORT AS-IS LEVEL-0 DFD



KEPHIS Electro Phyto-sanitary Certificate(ECS) for PROHIBITED PLANT MATERIAL IMPORT AS-IS LEVEL-0 DFD



KEPHIS Biological Import Permit



2.29. Data Flow Diagram

Another representation is one that takes into account the flow of data/information in the permit application process. This is summarized in the following figures below

DIAGRAM 1: KEPHIS ONE TIME EXPORT PERMIT APPLICATION & APPROVAL LEVEL 1 DFD

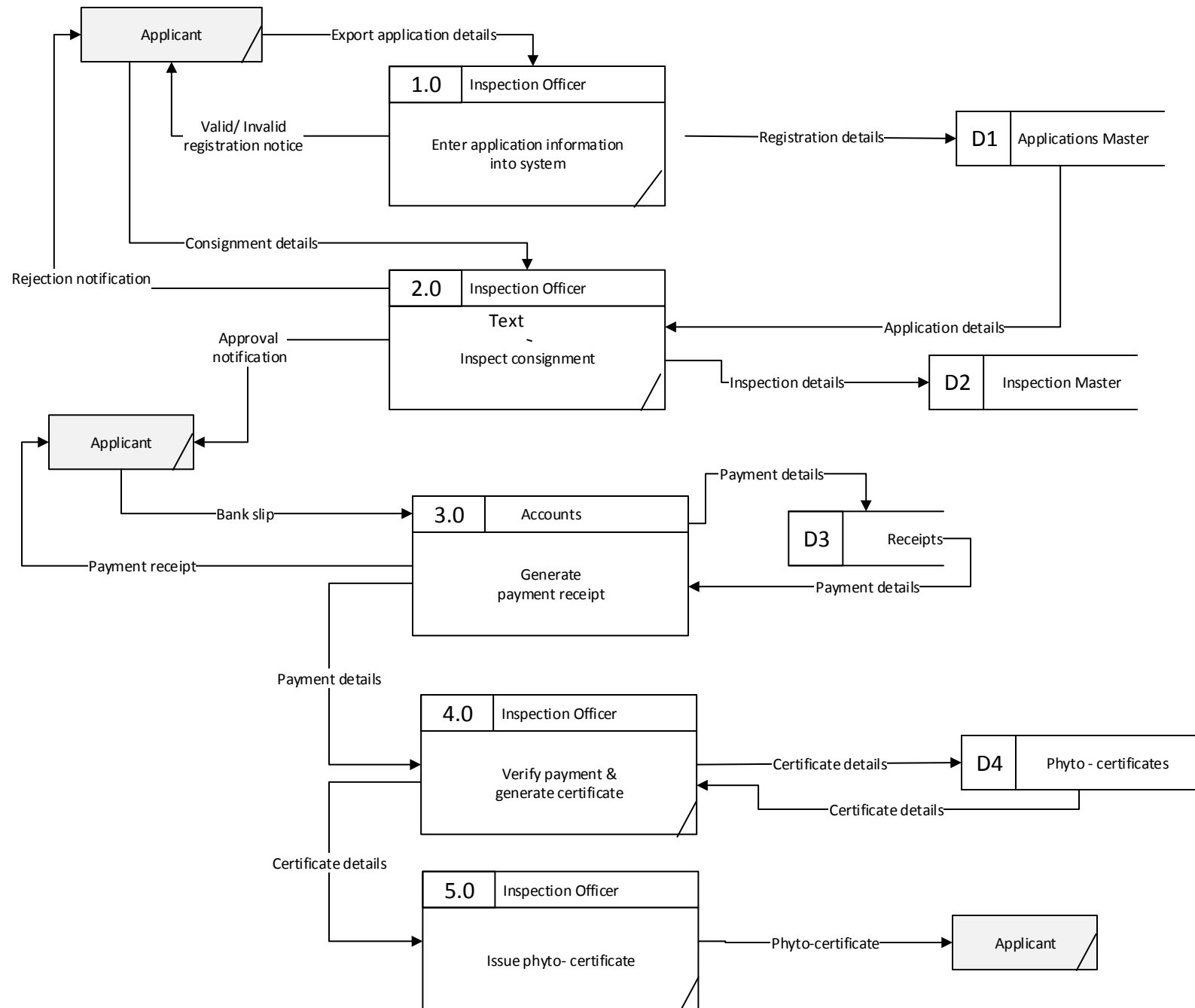


DIAGRAM 1: KEPHIS PROHIBITED PIP APPLICATION & APPROVAL LEVEL 1 DFD

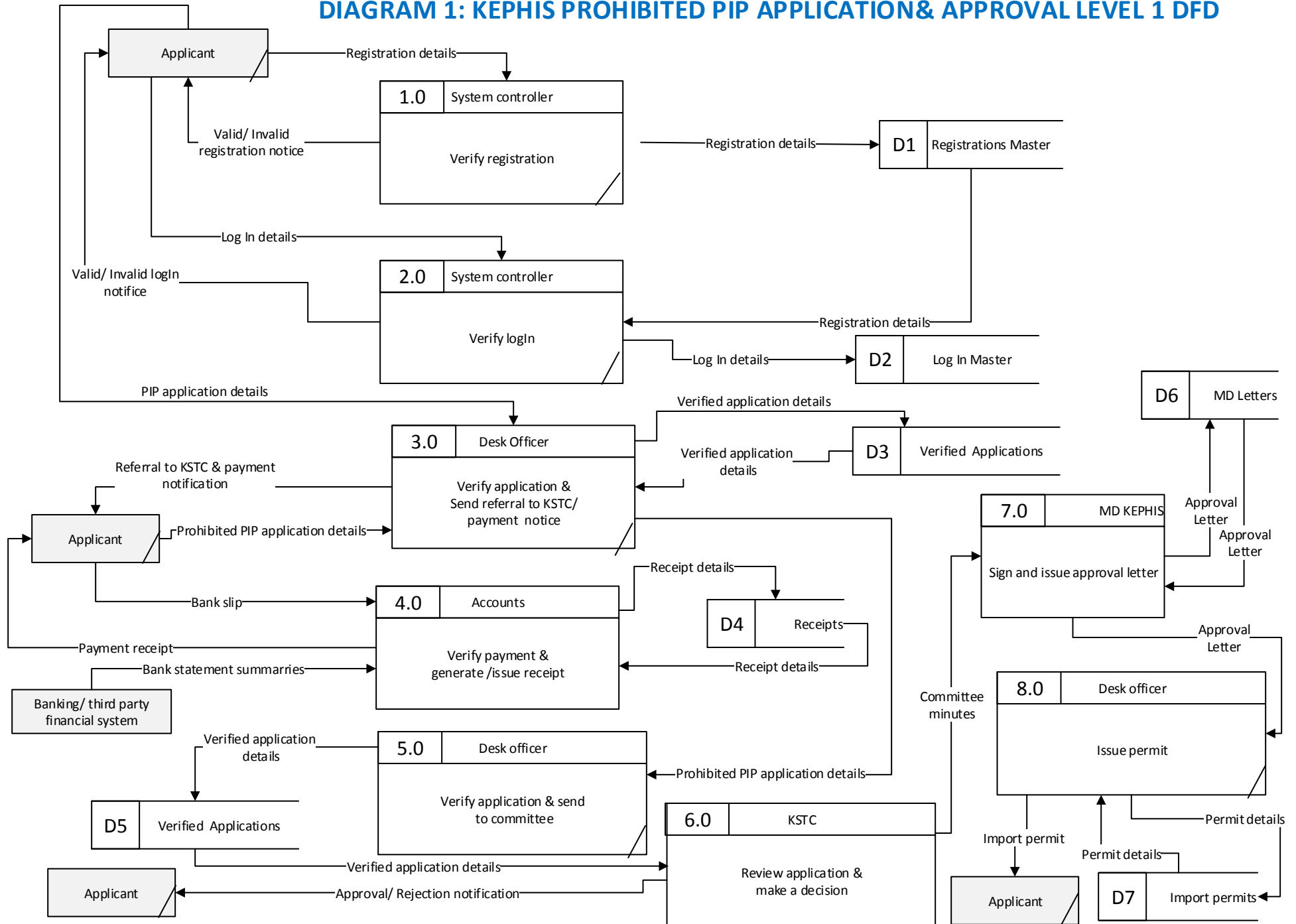


DIAGRAM 2: KWS EXPORT LICENSE APPLICATION & APPROVAL LEVEL 1 DFD

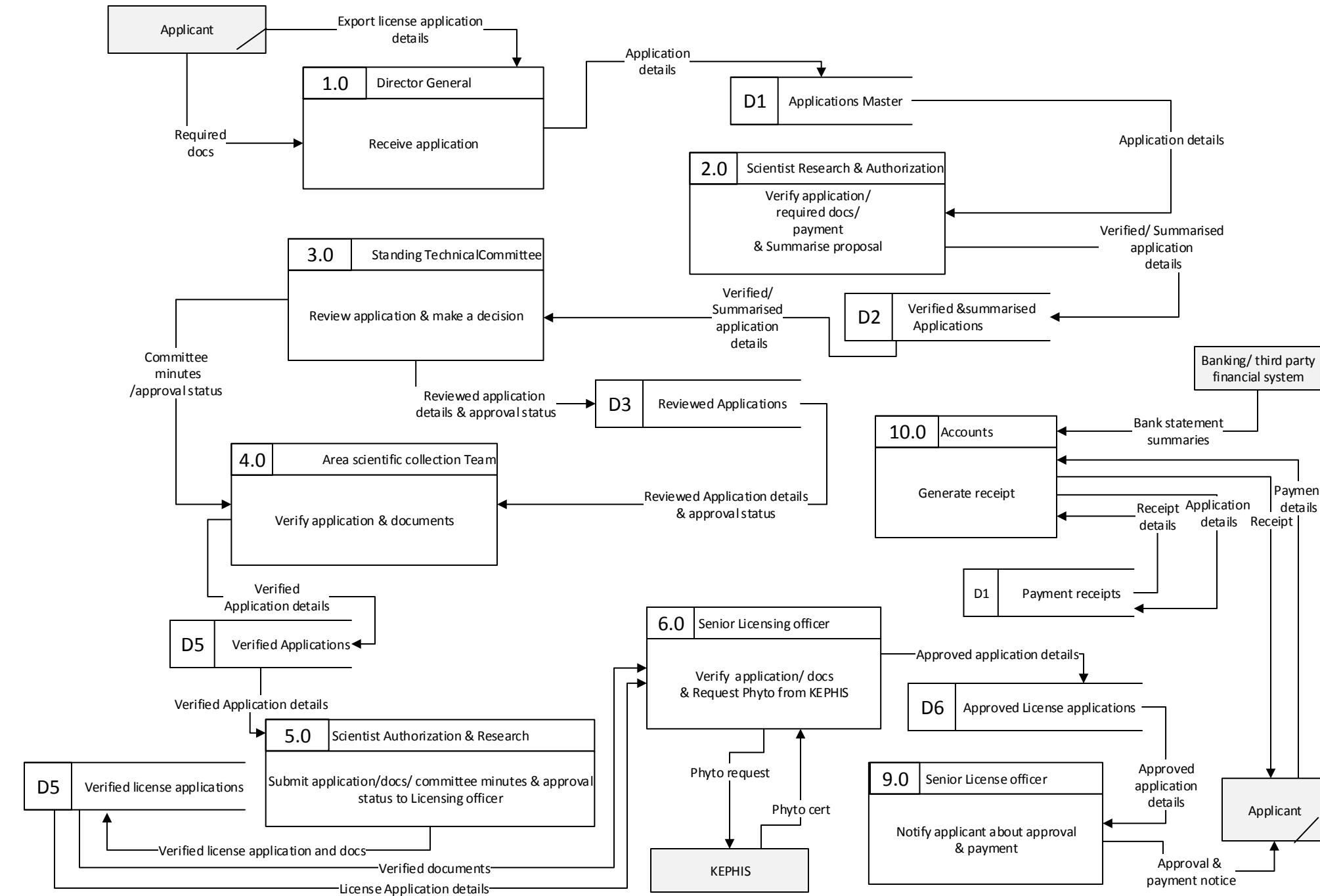


DIAGRAM 3: KWS EXPORT LICENSE APPLICATION & APPROVAL LEVEL 1 DFD

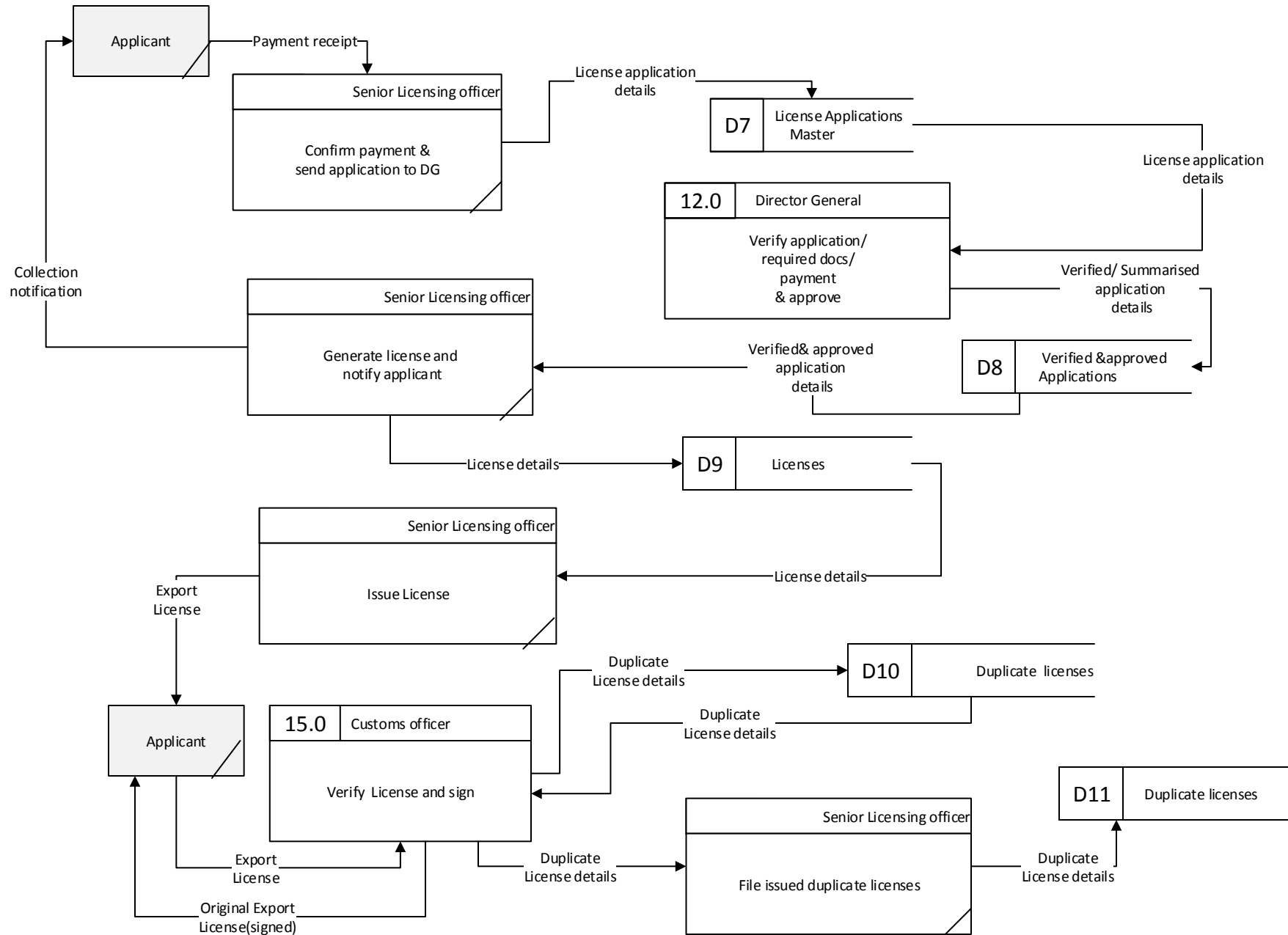


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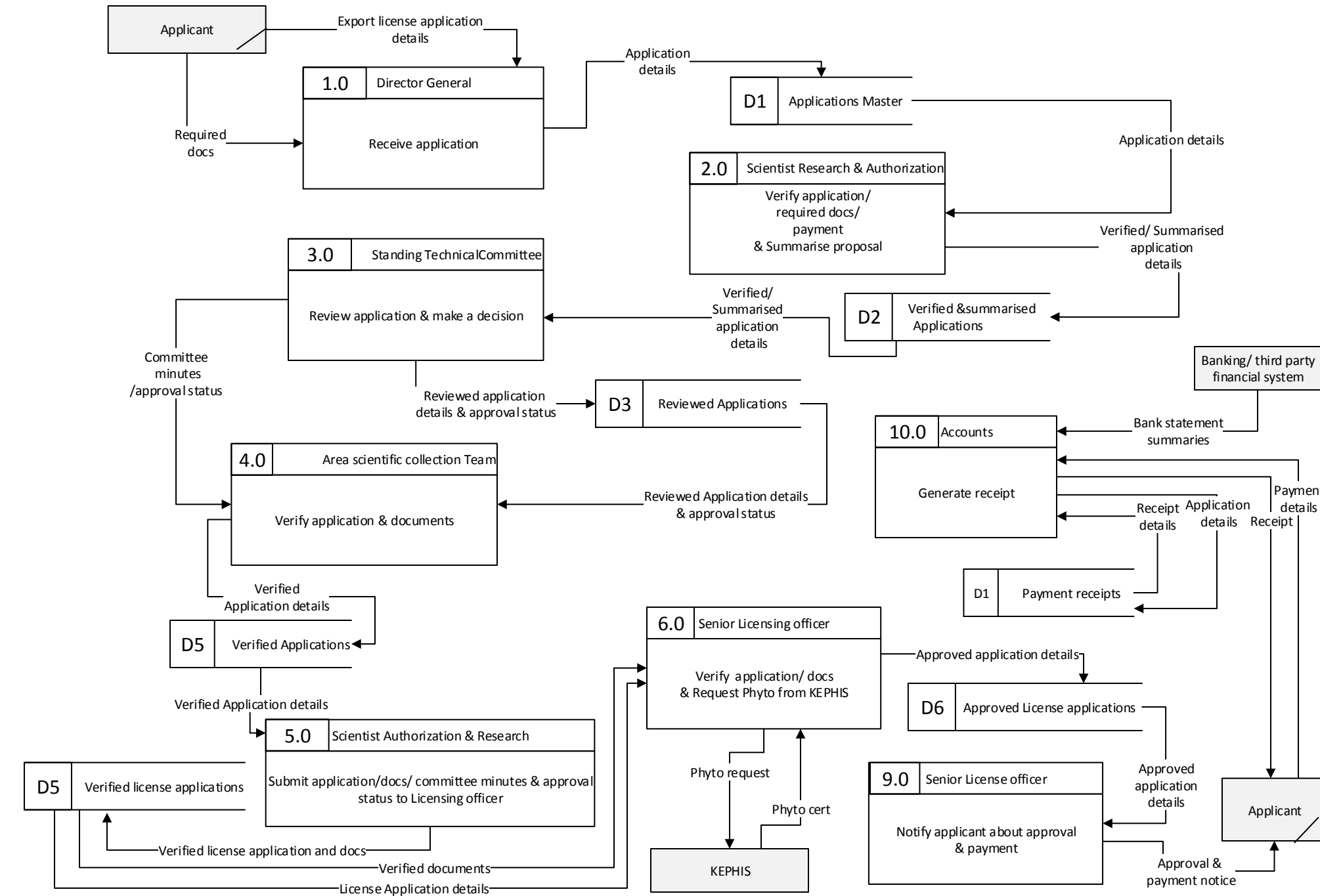
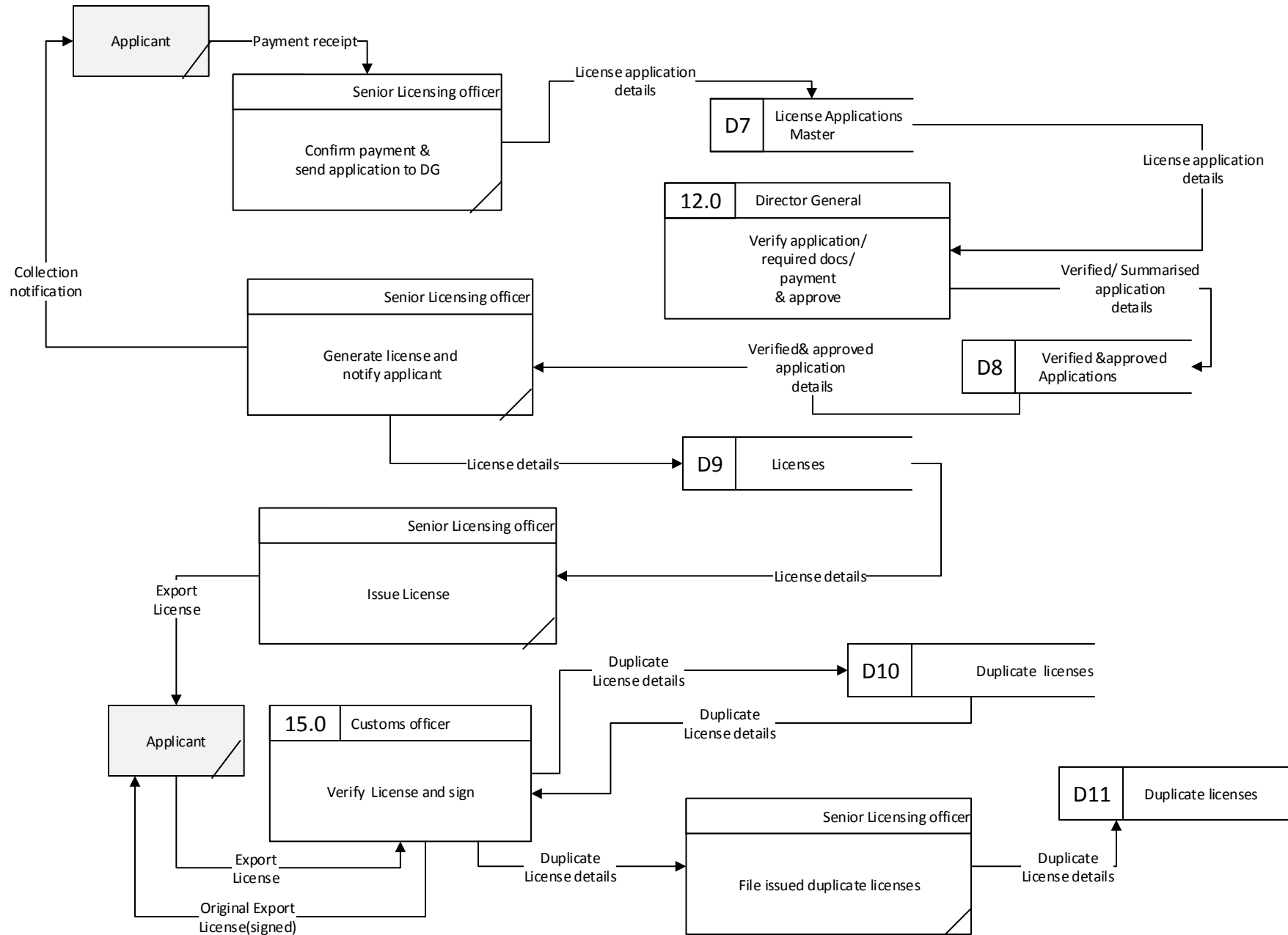


DIAGRAM 3: KWS EXPORT LICENSE APPLICATION & APPROVAL LEVEL 1 DFD

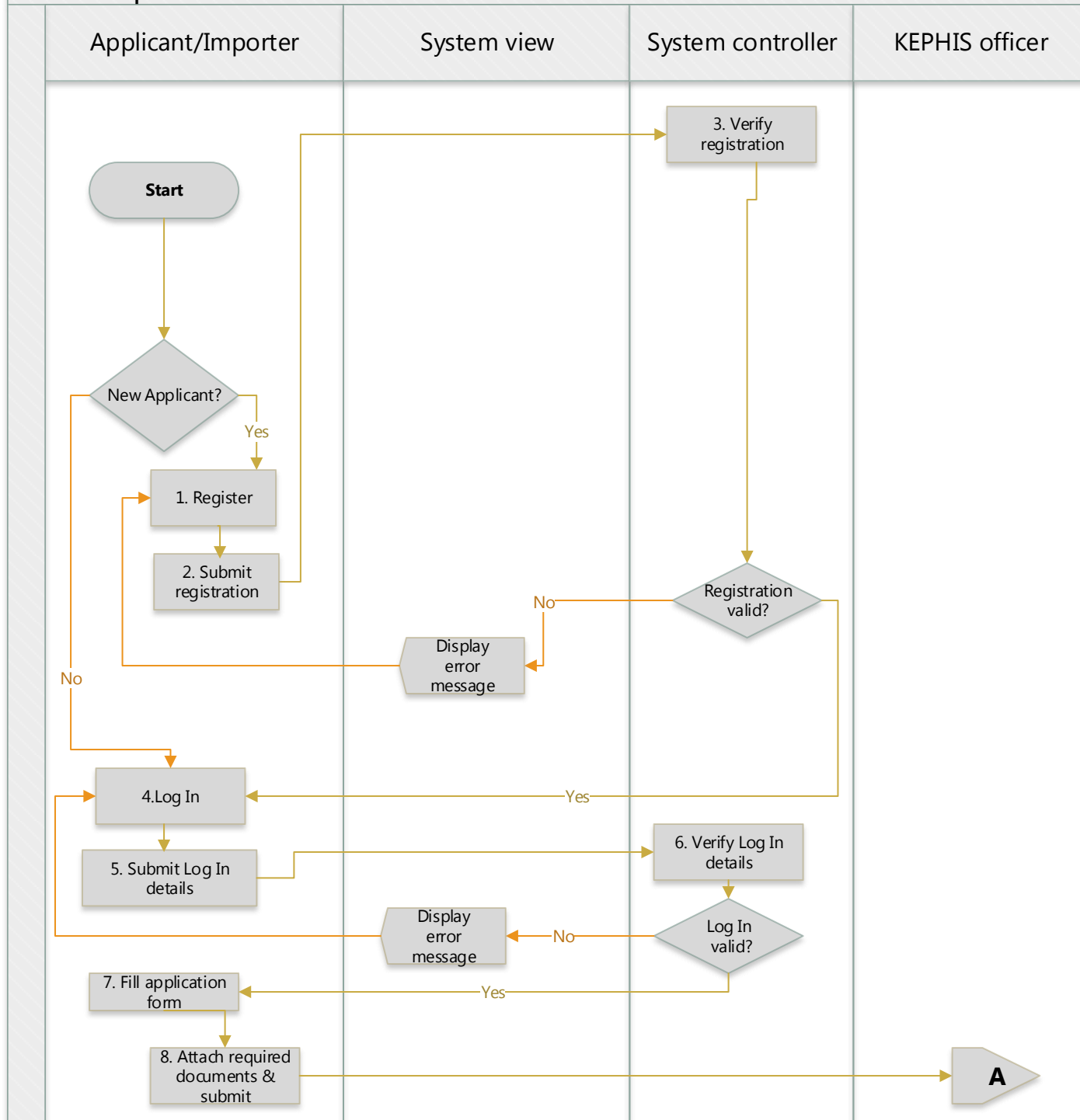


2.30. Swim Lanes

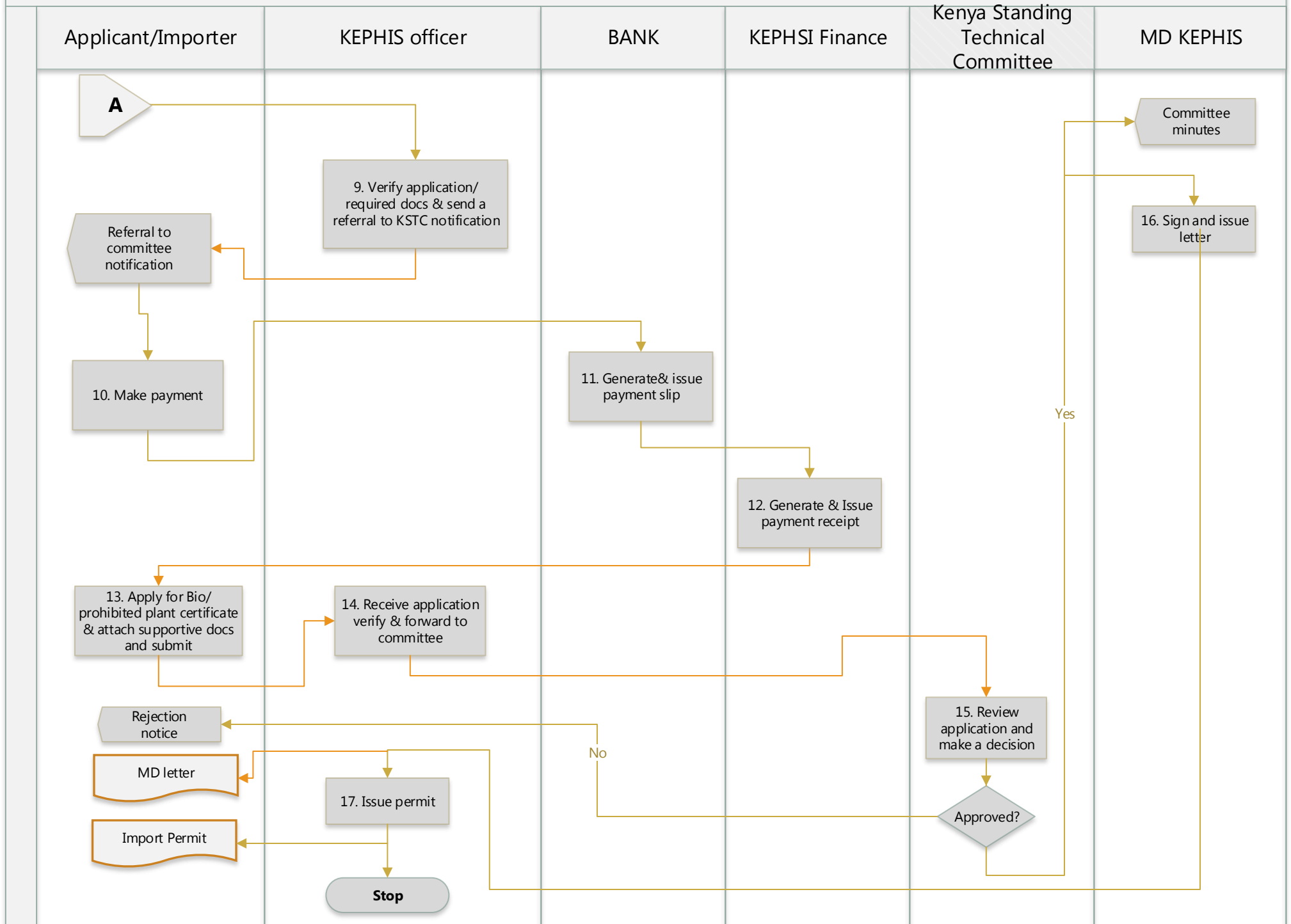
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In this section we show detailed activities that are involved as sub-processes of the core permit processes identified. Visually, the swim lanes are cross-functional and they show the sharing of responsibilities in a given permit process. Below are the sub-processes that were identified from the as is study of processes at the KEPHIS.

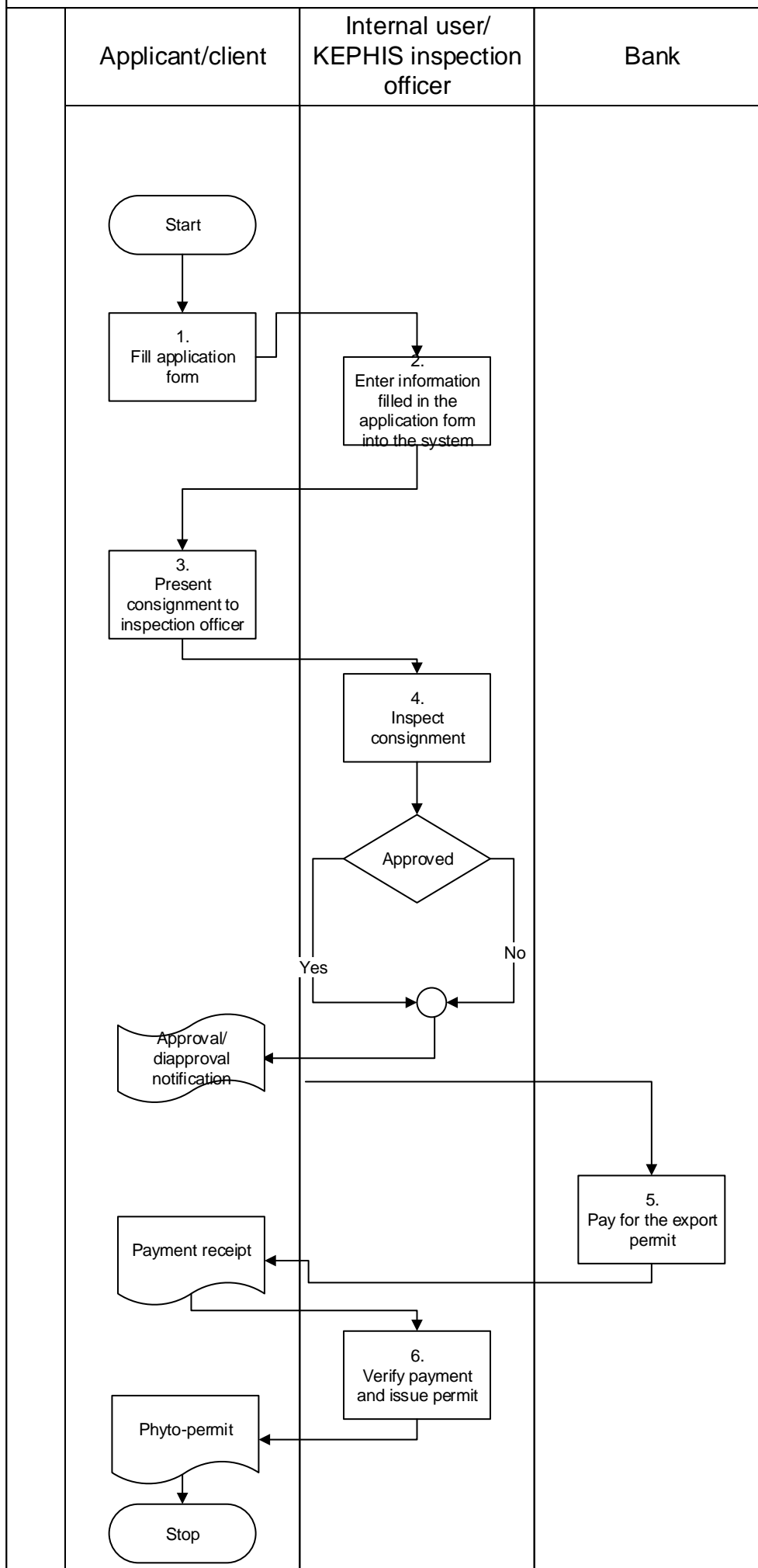
PROCEDURE: Application for PIP for Prohibited/Bio materials process flow map



PROCEDURE: Application for PIP for Prohibited plant materials process flow map



One Time Export process flow diagram



2.31. Use cases

KEPHIS ONE TIME EXOPRT PERMIT AS IS SYSTEM USE CASE SUMMARY

Sn	Use case name	Purpose	Input	Source of input	Output	Output recipient(s)
01	Fill application form	To enable a user to manually fill application form when applying for a permit	<ul style="list-style-type: none"> ▪ Application form ▪ Supporting documents 	Applicant	Fully completed permit Application	Internal user/ KEPHIS inspection officer
02	Physically present consignment for inspection	To enable an applicant to present consignment to inspection officer	<ul style="list-style-type: none"> ▪ Consignment details 	Internal user/ KEPHIS inspection officer	Approval notification	Applicant
03	Generate payment receipt	To allow accounts to generate payment receipt	Bank slip	Bank	Payment receipt	Applicant
05	Verify and Acknowledge payment	To confirm that the correct fee has been paid by the applicant	<ul style="list-style-type: none"> ▪ Proof of payment (Bank slip...) ▪ Payment receipt 	Accounts Applicant	Payment clearance	Internal user/ KEPHIS inspection officer
06	Generate & issue phyto-certificate	To generate and issue phyto-cert	Cleared application/ payment	Internal user/ KEPHIS inspection officer	Phyto-cert	Applicant

KEPHIS PROHIBITED BIP AS IS SYSTEM USE CASE SUMMARY

Sn	Use case name	Purpose	Input	Source of input	Output	Output recipient(s)
01	Create/register account	Allows the User to create/register a login account and become a Registered User.	<ul style="list-style-type: none"> Registration form/details. 	New Applicant	User account (login credentials)	New applicant
02	Sign in	To gain access to the system	<ul style="list-style-type: none"> User name Password 	Registered user	<ul style="list-style-type: none"> Invalid log-in credentials notification Access to System 	Registered user
03	Lodge application	To enable a researcher to apply for a BIP permit	<ul style="list-style-type: none"> Application form Supporting documents 	Applicant	Fully completed permit Application	KEPHIS desk officer
04	Verify Application & notify applicant to pay	To ensure that the application is complete & notify applicant to pay	<ul style="list-style-type: none"> Application form and attachments Requirements checklist 	Applicant & Desk officer	Verification status/Verified application/referral to KSTCIE & payment notice	Applicant
05	Request additional documents/details	To notify the applicant that the application is not complete	Verification status	KEPHIS desk officer	Notification on missing documents	KEPHIS desk officer
06	Submit	To	Missing/reque	Applica	Additional	KEPHIS desk

	missing documents	ensure that the application is complete	sted documents	nt	documents/details	officer
07	Acknowledge payment & generate receipt	To enable accounts confirm that the correct fee has been paid by the applicant	▪ Proof of payment (Bank slip...)	Applicant	Payment receipt	Applicant/KEPHIS desk officer
08	Verify payment & submit application	To Verify payment & submit application to KSTCIE	BIP application & payment	KEPHIS desk officer	Verified application & payment	KSTCIE
09	Review application & make a decision	To reassign an application to a specialist with requisite knowledge on the proposed research	Verified application & payment	KEPHIS desk officer	(i)Approval/rejection status update (...notification) (ii)Committee minutes	Applicant(i) MD KEPHIS(i) & (ii)
10	Grant/reject permit issuance	To generate, sign and issue MD approval letter	(i)Approval/rejection status update (ii)Committee minutes	KSTCIE	Approval letter	KEPHIS desk officer
11	Process permit/deny issuance	To enable KEPHIS	Approval letter	MD KEPHIS	Prohibited BIP permit/ deny grant letter	Applicant

11	Process permit/deny issuance note	To enable KEPHIS desk officer process and issue permit/ a notice of deny permit issuance	Approval letter	MD KEPHIS	Prohibited BIP permit/ deny grant letter	Applicant
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3. ANALYSIS OF AS-IS

From the above description and mapping of the AS-IS processes at NEMA, KWS, KFS, NACOSTI and KEPHIS, we proceeded to review the processes and made a detailed analysis of each process.

3.1. Activity Based Analysis of the Processes

1. Filing and processing an Application

Table 5: Gaps identified and points of improvement to the current permitting processes

Gaps Identified	Points of Improvement (To be)	Comment
Filing an Application.		
Forms filled manually	Forms to be filled online	--Researcher should be able to create a user account where only he/she should access. --Find a solution for the applicant's signature. --The system should be able to prompt the user/applicant in the event that he/she enters incorrect information. --The system should not save and proceed to the next phase if a section is not filled
The organization advises the researcher to manually pay the application fee at the bank	Application fee and paybill number for each organization should be auto displayed by the system, when filling the application form.	--There should be a linkage between application, and payment, so that the applicant cannot pay less or to the wrong organization --System should notify the user, that the application fee is not refundable. --System should notify the relevant organization that money has been received in it's mobile account and by whom it was sent and the researcher's application number.
The registry manually assigns permit application number	Generation of permit application number should be automated.	The permit application number should be generated, after the applicant has successfully submitted all the requirements.
The permit issued has no standard numbering system	Successfully processed permits by the system should have a standard numbering system.	The permit number should be used to track and monitor progress of the research and see if the researcher is compliant with the signed MAT
All payments are made manually to the relevant institutions bank account	Provide for online payment options.	--No need for the applicant to pay at the bank. --When the applicant makes payment, he/she should be sent an acknowledgement number/ receipt number --Payment should reflect at relevant institution finance department.

Permits are physically collected by the applicant	--Permits should be sent in softcopy.	There should be generic templates for the permits—signed by the DG.
The applicant answers questions as displayed by the different organizations systems	-- ABS should have leading and triggers questions to lead the researcher down the correct path	Each trigger question should open a new section of questions as stated in the relevant organization permit application form.
The applicant waits for the final response from the permit issuing entity	--The applicant should be continuously updated by the system on the progress of his/her permit application	After each section review of an application process the applicant should be notified via email
The permit application process take an average of six months to process	--The permit application process should be automated thus shortened to one month if possible	The permit process should be shortened in-order not to discourage researchers as it is currently the case due to the long permit process period

3.2. Administrative Improvements

1. The ABS system should be fully integrated, automated, web-based and integrated with other systems such as ORIS - NACOSTI, Licensing System - NEMA, ECS – KEPHIS, KWS Integrated database and PIQRS – KEPHIS.
2. Most of the documents in the process flow should be in softcopy and only produced in hardcopy when required.
3. The back and forth process should be eliminated by doing all processes online instead of hardcopy documents being generated at each step, ONLY the final document (signed and stamped permit) by the DG, secretary or finance department in the case of payment should be printed and stored as proof or for future reference.
4. All involved institutions should automate their dispatch procedures to online sending and receiving of documents and integrate a phone alert service to notify all parties NEMA, KWS, KFS, NACOSTI, DVS, NMK, KALRO, KEFRI and KEPHIS staff included that documents have been received in their mailbox awaiting their action.
5. NEMA, KWS, KFS, NACOSTI, DVS, NMK, KALRO, KEFRI and KEPHIS should have an online mechanism integrated in the ABS system to track the progress of permit application and issuance process.

3.3. Departmental Self-Assessment

In a workshop with the NEMA, KWS, KFS, NACOSTI and KEPHIS staff, we discussed the current status of the various departments that are involved in the permit application process.

3.3.1. Staffing

Currently the KFS and NEMA are understaffed in KFS and in NEMA who processes and grants or rejects permit issuance.

3.4 Other research institutions

We also came other institutions (in the ABS toolkit) that were originally involved in the ABS setup in Kenya and decided to incorporate them in the project going forward. The organizations invited were UoN which acts as an affiliate to foreign researchers who are looking for credible institutions to partner with, KALRO which maintains the gene bank in Kenya, NMK which is mandated to issue permits in law, DVS which issues export certificate, KEFRI which deals with forest seeds and plant genetic resources and NBA which primarily deals with Genetically Modified Organisms.

4. DESIGN of TO-BE SCENARIO

This chapter presents the proposed changes to the current permit (AS-IS) processes at NEMA, KWS, KFS, NACOSTI, NBA, UoN, DVS, NMK, KEFRI and KEPHIS. It was arrived at based on the analysis of the current processes scenario and we believe it presents a transformative set up that leads to achievement of the goals of the BPR exercise.

4.1. PROPOSED ABS PORTAL PROCESSES: DESCRIPTION OF THE GENERAL FLOW

Summary

Applicants seeking to conduct research in Kenya will be presented with a single harmonized window for all research applications. The single window will be a shared system between authorities involved in ABS and research permits in Kenya. The single window will contain an ABS Pathway through which applicants can apply for an ABS Permit after being granted a PIC and signing MAT. The ABS Pathway will be under the general coordination of NEMA in collaboration with other relevant environmental permitting authorities.

Using the single window IT based system, Applicants will fill out a single dynamic application form. The application form will contain trigger questions that determine whether the applicant requires only a NACOSTI permit (required for all research) or enters the ABS Pathway. If the applicant enters the ABS Pathway they will answer questions required by the ABS relevant permit granting authorities in Kenya (NEMA, KWS, KFS, KEPHIS, DVS, NMK, NBA, KEFRI etc.).

The Nagoya Protocol requires an Access Permit, Prior Informed Consent and Mutually Agreed Terms for and ABS permit to be issued. For the permit to be legally enforceable internationally Mutually Agreed Terms is considered as a contract between the researcher and the permit granting authority. To achieve this permits from the different authorities will be combined at the end of the process into a single ABS Permit and PIC and MAT appended to it. What is granted is an ABS permit as evidence of grant of PIC and MAT (which in the collaborative agreement is a contract). Other agreements entered into include MTA.

The ABS permit and the uploaded Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) will be stored in the system following the application and processing of the application by the respective authorities. Templates will be provided to applicants guiding access to and fulfillment requirements for PIC, MAT and MTA from the lead resource providers. The negotiation phase for the PIC and MAT will take place offline and the outcome of the negotiations; PIC, MAT and minutes of the negotiations after being signed by all relevant parties MUST be uploaded to the Online IT system.

The application, associated documents (PIC, MAT etc.), and communications between the

authorities and the applicant will be stored in an archive for the retrieval in case of future legal disputes.

All permit authorities will have access to the complete application form. Individual authorities will be responsible for reviewing and seeking clarification on issues relating to the fulfillment of their respective mandates. Access to the complete application form and communications arising by all relevant authorities will reduce duplication of effort and create a robust internal peer review system between authorities. This will assist with defending the interests of Kenya in access and benefit-sharing arrangements under the Nagoya Protocol.

In order to expedite the processing of applications, the authorities in Kenya will review, clarify and approve applications in parallel. The internal notification system will allow authorities to ask applicants questions and discuss applications with other authorities prior to approval or rejection. Only authorities will have access to internal communications between authorities.

When all relevant authorities have approved the application, the applicant will be notified and invited to pay the appropriate fees directly to the authority concerned. Following the payment of fees the applicant will be issued with a single ABS Permit with PIC and MAT appended. The ABS permit will consist of the set of permits containing a unique common identifier (e.g. KE20171234). The common identifier and the application meta-data (name, address etc.) will form the basis for the Internationally Recognized Certificate of Compliance (IRCC) for submission to the ABS Clearing House Mechanism (ABS-CHM). Researchers will also be required to label all specimens and associated data with the unique identifier for the ABS Permit using barcode and or Quick Response (QR) Code technology.

Data provided by the applicant in the form of names, institutions, addresses, species names will form the foundation for monitoring compliance using web services (Application Programming Interfaces) to access the scientific literature, patent data and at a later stage, product information. The automated retrieval of scientific literature will also serve as a show case for world class research in Kenya.

Proposed Workflow:

A. Information Guiding the Applicant

1. The Applicant accesses important information related to ABS system in Kenya:

- Biological resources that require an ABS permit.
- A guide to the application process.
- Required documents for the application.

- A list of approved institutions for research affiliation purposes.
- Lead agencies and their mandates.
- Other information (e.g. regarding export of materials, applications for visas).

B. Applicant Registration

1. The applicant creates an account by filling a registration form
 - The applicant provides personal details: (bio data, email, address, identification details etc.)
 - The Applicant uploads a passport-size photo, and copy of ID card or passport.
- i. Applicant may preview, edit and save form details.
 - The applicant submits the registration form.
- ii. If all form fields are completed and required attachments are uploaded, a “Submit Successful” status is returned.
- iii. Else, information is provided to the user regarding details that require correction, this is done by the system highlighting the sections where corrections or researcher input is required.
 - The system creates an account and emails the user log-in credentials.

C. Harmonized Application Form

1. The Applicant logs in to fill in the necessary documents
2. The Applicant specifies whether he/she is a student or not.
3. The Applicant specifies whether he/she is applying as an individual, from an academic institution or company/research program
4. The Applicant provides additional information such as legal officer contact details for their institution, researcher IDs etc.
5. The Applicant is invited to upload a set of standard documents required by the authorities. This is likely to include
 - Evidence of legal registration of the organisation
 - The research proposal and budget (principle of full transparency)
 - Letter of affiliation with a local institution e.g. University of Nairobi
 - Curriculum Vitae

- PIC and MAT

6. The Applicant is required to answer a trigger question on whether they will be collecting biological or genetic material in Kenya (with due consideration for digital sequence information)

Where answer is negative the system opens up a standard NACOSTI application form.

i. The applicant completes the form as required (i.e. fills the form and uploads required attachments), and submits.

ii. NACOSTI's process follows.

– If the answer is positive the Applicant enters the ABS Pathway for the processing of applications.

D. The ABS Pathway

The authorities involved in the ABS Permit Process will vary according to the type of research they are seeking to conduct, in terms of collection of plant (KEPHIS), wild animal or other material (KWS), a protected area or forest (KFS), research on cultural and heritage sites (NMK), Plant genetic resource and Plant or forest seed (KEFRI), Genetically Modified Organisms (NBA), whether material is covered under existing treaties (e.g. Food Crops and Forages under Annex 1 of the Plant Treaty) or may merit special treatment (e.g. human, animal and plant pathogens). In addition applicants may intend to export material that will be dealt with by KWS, KEPHIS (plant phytosanitary requirements) or DVS (for animal material). In cases where an applicant intends to import or export a Living Modified Organism (LMO) the biosafety authorities will be involved.

1. To identify the relevant authorities for review of the application, the Applicant will be presented with a series of trigger questions: Trigger questions will include:

- The type of research
- The subject area of research (taxonomy, food and agriculture, health etc.). This will assist with determining whether institutions such as KALRO (for Annex 1 Plant Genetic Resources) and the Standard Material Transfer Agreement of the Plant Treaty will apply or whether procedures for accessing pathogens (such as the WHO PIP Framework) may apply.
- The species and class of organism involved
- The proposed geographic location(s) for the research
- Research methods

- Number of proposed samples
- Conservation status (where known)
- Whether research on traditional knowledge is proposed with communities in Kenya (TK research guidance trigger)
- Whether Living Modified Organisms will be imported, created and/or exported as part of the research (biosafety)
- Whether the Applicant intends to export genetic resources (and/or digital sequence information) from Kenya
- At each stage the trigger questions above will open up information boxes for the Applicant to fill in. Additional trigger questions may be required to complete the information required by authorities.

Mutually Agreed Terms (MAT)

A set of templates will be developed (with the help of the legal team) containing terms and conditions for Mutually Agreed Terms and also guide the applicant how to fill in the MAT. The conditions set out by authorities and contained in the Mutually Agreed Terms constitute the **Contract**.

- Mutually Agreed Terms are concerned with benefit-sharing and the Annex to the Nagoya Protocol (setting out a list of potential benefits) will be used as a basic menu of possible benefit-sharing options;
 - Some clauses on benefit-sharing will require quantitative numbers and will be left blank. Examples include, number of studentships and internships and their value, financial contributions to conservation, equipment and value, percentages of license or product income etc.
 - Clauses setting out the terms and conditions of material transfers (Material Transfer Agreements) will form a heading within the draft agreement.
 - Clauses requiring quantitative input or involving intellectual property rights or Material Transfer Agreement are the most likely to be transferred to the negotiation phase
1. The Applicant is required to agree to comply with national legislation on ABS (By ticking a radio button).

- The Applicant may Preview the application to confirm whether the provided information is correct. The applicant may also edit the details.

2. The Applicant may save the application to complete/submit it later.

3. The Applicant Submits the Application.

- If all form fields are filled and required attachments uploaded, a “submit successful” status is returned.

- Else, information is provided to the Applicant regarding details that require correction.

4. The system auto-generates an “ABS reference number”, which the Applicant can use to track the application.

5. All relevant agencies are notified of the Application and can access the full application form

E. Review and Approval of the Application

Each agency will review the application in accordance with their standard operating procedures. In cases where an agency requires information from another agency to proceed, the agency will use the internal notification system to obtain the required information. The Competent national Authority for ABS in Kenya (NEMA) will take responsibility for addressing potential bottlenecks in processing applications. The outline for the review and approval process is as follows.

1. Responsible officers of respective relevant agencies review parts of the application that are relevant to their agency for completeness/correctness.

- If the application is incomplete or has incorrect details, the reviewing officer enters comments of the review and notifies the applicant of the need to correct the application via email.

- The Applicant is notified of the need to correct/complete the application, and address comments from the review.

Note: A reviewing officer of an agency, can access comments entered by a reviewing officer of another agency to avoid duplication of effort and as part of internal peer review.

- The application status is updated to “returned for correction”.

- The applicant corrects the application as instructed and re-submits it. The authorities are notified of the correction.

- If the application is filled correctly and all details are in order, the Reviewing officer internally approves the application.

- The permit document is generated containing any specific terms and conditions from that authority.

- The permit document is placed on hold within the system until all required approvals are completed.
 - Approval of an application by an individual authority is visible to all other authorities
2. Minimizing bottle-necks. The system will allow authorities to view the status of the application with other authorities.
- Where an authority requires information on the status of an application from another authority in order to proceed, the authority will message (notify) the authority of the need for information
 - Where an authority ceases to process an application or applications resulting in a bottle neck in the system the Competent National Authority (NEMA) will seek to resolve the issue arising
 - Where a bottleneck persists the Steering Committee for the shared system (composed of the combined authorities) will consider appropriate ways forward to address the issue arising

F. Negotiation Phase

1. The responsible officer of the lead agency under which the GR falls, reviews the application and establishes issues that require further negotiation (points of negotiation) i.e. in the MAT.
2. The officer of the lead agency communicates the points for negotiation to the Applicant (Negotiation menu) via mail.
3. Negotiations between the researcher and the local community will take place offline
4. Where face to face negotiations are required with an international Applicant a local affiliate may be nominated to negotiate on their behalf.
5. At the conclusion of the negotiation, the signed PIC, Mutually Agreed Terms and minutes of the negotiations are uploaded to the system

G. ABS Permit and Contract Generation

1. All relevant authorities must mark the application as approved for an ABS Permit to be generated.
2. When all relevant authorities have checked the approved box within the system:
 - An ABS permit front page will be generated (containing basic descriptive data)
 - Permits from individual authorities making up the ABS permit will be generated
 - An electronic permit pass (smart code) and specimen label sheets will be generated

-The documents will be placed on hold pending final review for completeness

3. The ABS permit is issued after review by the granting authority.
4. The Applicant pays fees electronically directly (through mobile money or other funds transfer mechanisms) to the individual authorities (detailed steps to be displayed by the system) involved in the permit application
6. When all fees have been paid, the electronic version of the ABS Permit is made available to the Applicant
7. The Applicant is requested to sign and return a hard copy of the ABS Permit for the archive (subject to discussion of whether electronic signature is sufficient).

H. Rejection of Applications and Appeal

1. In cases where an authority decides to reject an application written reasons will be communicated to the Applicant through the internal notification system (email). Reasons will be visible to other authorities.
2. Applicants will be directed to the Appeals Menu where a clear and transparent procedure will be outlined as provided in law.
3. Applicants will submit an Appeal
4. Relevant authorities will review the Appeal
5. Where an Appeal is accepted an ABS Permit, PIC and MAT will be issued with the appropriate revisions.
6. Where an Appeal is rejected clear written reasons will be provided to the Applicant and stored with the application archive.

Post Access Arrangements

It is the responsibility of the national resource provider to ensure collection is done as was agreed in the proposal. The information portal will have a guide on how to collect and label the material.

I. Transfer of Material

All transfer of Genetic resource material will be as per the Material Transfer Agreement (MTA)

Before transfer of material, exsitu collection agreement is required. The system should be able to verify interactively from the issuer system. All relevant permits will be confirmed before material transfer

As part of the guide to system users, the following information will be given:

1. Terms and Conditions comprising a Material Transfer Agreement will form part of the ABS Contract (as an Annex)
2. At the point of transfer of the materials the terms and conditions will be checked for compliance
3. Applicants seeking to revise or extend the terms and conditions of a Material Transfer Agreement following the export of material from Kenya will be required in the ABS Contract to request revision through the shared system for review and, as appropriate, approval or rejection by the relevant authorities.
4. In cases where a revised MTA is approved a new MTA document with the relevant unique identifier and explanatory text will be generated.
5. In cases where a revised MTA is rejected written reasons will be communicated to the applicant.

J. Processing of an export certificate

Applicants seeking to export genetic material or digital sequence information from Kenya will indicate this intention at the time of application.

1. At the time of application, Applicants will be informed of the export process and its requirements
2. Authorities will be able to review the Application and appropriately approve or reject applications.
3. Terms and conditions on the export of material will be included in the ABS Permit.
4. Applicants seeking to export materials will pay the relevant fees to the relevant institutions.

Prior to export/import Applicants will be required to meet import/export requirements among them the sanitary/phytosanitary inspection requirements of the relevant authorities.

5. The issuance of an export certificate following inspection of samples is at the discretion of the relevant authority.
6. Where the samples for export fail the sanitary/phytosanitary requirement applicants wishing to engage in fresh collection will contact the relevant authorities through the shared system. Decisions on whether to permit a new collection will be at the discretion of the relevant authorities.

7. Where an applicant meets the requirement the export certificate will be made available through the shared system and be shared with the checkpoints for monitoring.

L. Publishing of an Internationally Recognized Certificate of Compliance (IRCC)

1. When an ABS Permit is issued the ABS clearing house officer (currently at NEMA) will publish the IRCC on the ABS clearing mechanism of the Nagoya Protocol. This will follow the requirements of the protocol that takes care of confidentiality issues in the permit.

2. MAT is deposited in the ABS clearing house. The contents to be deposited as public information are as agreed by the parties.

M. Uploading reports

1. The GR user logs into the system and accesses the system feature that allows him/her to upload reports.

2. The GR user uploads the report.

3. All relevant parties are notified of the report upload.

N. Monitoring Compliance

Data submitted by the Applicant will be used to send queries to web services (Application Programming Interfaces or APIs) to retrieve data on scientific publications, patent applications and, in future, relevant product information. Based on this information it will be possible to monitor compliance and generate statistics. To enable this:

1. The fields in the application form must meet tidy data principles where a single variable (e.g. surname) is a column and each observation (e.g. a single surname) is a row.

2. To meet the tidy data standard data within the application form field must not contain more than one observation (e.g. a persons' full name).

3. Data from the application forms must be readily saved into a database table that can populate queries for interfaces with web services

4. The system must provide tools for parsing the return from web services (normally JSON or XML) into data tables that can be visualized and reviewed by the persons responsible for monitoring ABS.

5. Monitoring data should be accessible to authorities within the shared system.

Generally for monitoring purposes, information will be shared with the checkpoints who will submit reports to the competent authority, the national focal point, the resource providers and the

parties to the MAT

O. Reporting

The shared system will assist authorities with generating the required reports. In the case of national reports under the Nagoya Protocol, relevant summary data should be made available in table format to assist with answering questions on the National Report questionnaire.

P. Anticipating Future Needs

1. Design of the system will anticipate future needs to the extent possible through the use of placeholders in the underlying code for later elaboration following additional work by the authorities.

The system will enable future modules to be incorporated (as extensions) to capture emerging technologies in future.

Q. Open Source Code

The system will be developed entirely using open source software tools and the software code will be made available online free of charge under an open source licence for use and further development by other Parties to the Nagoya Protocol. This will assist with promoting adoption of the general framework by other countries and contributions to code improvement and innovation over time.

Contractual details relevant for tendering will be outlined in a separate document based on consultations between the authorities on existing experience.

4.2. PROPOSED FLOW CHART DESCRIPTION

A. Information Guiding the Applicant

1. An Applicant accesses the front page of the online permit and monitoring system (NACOSTI entry page) and accesses information related to the ABS framework in Kenya:
 - Biological resources that require an access permit.
 - A guide to the application process for ABS framework documents—including requirements for each of the permit granting institutions involved.
 - A list of approved institutions for the purposes of affiliation.
 - Lead agencies in Kenya, and their mandates.

(Note: the front page of the online permit and monitoring system is the NACOSTI entry page).

B. Streamlined Applicant Registration

1. To apply for ABS framework documents, an applicant accesses the NACOSTI entry page and creates a user account, or logs in if he/she is a returning user.
2. To create a user account, the applicant fills a registration form:
 - > The applicant provides personal details: (bio data, email, address, identification details etc.)
 - > The Applicant uploads a passport-size photo, and copy of ID card or passport.
 - i. Applicant may preview, edit and save form details.
 - > The applicant submits the registration form.
 - i. If all form fields are completed and required attachments are uploaded, a “Submit Successful” status is returned.
 - ii. Else, information is provided to the user regarding details that require correction.
 - > The system creates an account and emails the user log-in credentials.

C. Harmonized Application for permit(s)/ABS framework documents

1. The Applicant logs into their account—on the online IT permit and monitoring system, to apply for necessary permits.
2. The Applicant specifies whether he/she is a student or not./research program/project/local/foreigner/party to CBD/Nagoya or both/NFP
3. The Applicant specifies whether he/she is an individual, corporate or company
4. The Applicant is required to indicate whether the intended research is on/or involves biological resources. Anchor Text with the keyword “*Biological Resources*”—

hyperlinked to text that describe Biological Resources will come in handy when the researcher is unsure of what constitutes biological resources.

- > If the intended research does not involve Biological Resources, the system opens up a standard NACOSTI application form.
 - i. The applicant completes the form as required (i.e. fills the form and uploads required attachments), and submits.
 - ii. NACOSTI's process follows.
 - > If the research involves biological resources, **step 5** of the process flow follows.
5. The system opens up an application form required to apply for the ABS permit.
6. The Applicant fills the form as required:
- > The applicant specifies the purpose of accessing the Biological Resource (BR) (Access for research, Research, Industrial application, Bio – prospecting, Conservation).
 - > The Applicant specifies whether the BR to be accessed are genetically modified.
 - > The applicant provides project related details such as: (a) Objectives of the research, (b) researcher's institution, (c) local institution of affiliation, (d) proposed start and end date, (e) location of the research, (f) Details of Genetic Resource (GR) provider, (g) GR materials to be accessed and details, (h) Status of conservation of the GR (i) details on how samples will be collected, (j) source of funding, (k) reference, (l) name of local counterpart, (m) National resource provider (NRP)—(lead agency: KWS and KFS).
7. The Applicant Uploads supporting documents:-
- > Research proposal.
 - > Letter of affiliation.
 - > Letter from academic/research institute
 - > Collaborative agreement
 - > Resume.
8. The applicant Fills PIC, MAT and MTA Templates
- > The system displays a guidance on how successful PIC and MAT should be filled and negotiated for each of the authorities involved.
 - > The applicant accesses a Prior informed consent (PIC) template which guides him/her how to fill the PIC. The actual PIC is negotiated offline and on agreement is signed by all the involved parties.
 - > The applicant also accesses and downloads a Mutually Agreed Terms (MAT) template which guides him/her how to fill the MAT. The actual MAT is negotiated offline and on agreement is signed by all the involved parties.

- > Both the PIC and MAT are duly signed by the researcher and the local community in the case of PIC and the permit granting authority in the case of MAT.
 - > The researcher then uploads the duly signed negotiated and agreed upon PIC and MAT to the IT online system.
 - > If the applicant intends to transfer GRs, he/she accesses a Material Transfer Agreement (MTA) template which guides him/her on how to fill the MTA details such as details of the designated repository center for duplicate specimen. The MTA is then negotiated and filled offline and uploaded to the Online IT system together with a signed letter from the designated depository center.
9. The Applicant is required to agree to comply with national legislation on ABS (By ticking a radio button).
- > The Applicant may Preview the application to confirm whether the provided information is correct. The applicant may also edit the details.
10. The Applicant may save the application to complete/submit it later.
11. The Applicant Submits the Application.
- > If all form fields are filled and required attachments uploaded, a “submit successful” status is returned.
 - > Else, information is provided to the Applicant regarding details that require correction.
12. The system auto-generates an “ABS reference number”, which the Applicant can use to track the application.
13. All relevant agencies are notified of the Application.

D. PIC and MAT Negotiations

1. The responsible officer of the lead agency under which the BR falls (KFS/KWS), reviews the application and establishes issues that require further negotiations (points of negotiation) in the PIC and MAT.
2. The officer of the lead agency communicates the points of negotiation to the applicant via email.
Note: the system should provide a feature that facilitates communication between the Applicant and the lead agency. This feature may be provided under the *negotiate* menu.
3. Negotiations are organized by the lead agency, where all involved stakeholders meet and negotiate.
Note:
 - A local affiliate can negotiate on behalf of an international Applicant.
4. After an agreement has been reached, the applicant signs the agreed upon PIC and MAT, so does the local community representative and the lead agency respectively, and the applicant finally uploads both documents to the system.

Note that it is the responsibility of the applicant to upload the PIC and MAT to the system.

END OF A1

E. Review of the Application

1. Responsible officers of respective relevant agencies (NACOSTI, KFS, KWS, NEMA, KEFRI, NMK, DVS, NBA, KEPHIS) review parts of the application that are relevant to their agency for completeness/correctness.

Note that, an applicant may require to obtain permits from KWS, KEFRI, KFS, NMK. This depends on the type and/or location of the GR.

- If the application is incomplete or has incorrect details, the reviewing officer enters comments of the review and returns the application for correction.
- The Applicant is notified of the returned application, and comments of the review.

Note: A reviewing officer of an agency, can access comments entered by a reviewing officer of another agency.

- The application status is updated to “returned for correction”.
 - The applicant corrects the application as instructed and submits it.

- If the application is filled correctly, it is forwarded for further review and approval.
2. Complete applications are considered for approval by respective agencies. Review and approval of an application follows standard procedures—as set out by each agency.
 - The Status of an application is updated after every step of the approval process by an agency.
 3. An agency will approve or reject an application.
 4. The applicant is notified to pay application processing fee.
 - Payment instructions and details will be available to the Applicant through the **payment** menu.
 5. The applicant pays the requisite application processing fee and submits proof of payment.
 - The relevant agency is notified of the payment.
 - The finance officer of the relevant agency verifies the payment.
 6. Results of the approval process are made available to the applicant.
 - If the application is rejected, the status is updated to “Rejected”.
 - Reasons and information about appeal are provided to the Applicant.

- If the application is approved, all permits are made available to the user in .pdf format.
- Information on the next course of action is also provided.

F. Research Permit Approval Process by the Lead Agencies (KWS/KFS/NMK/KEFRI)

1. Applications for KFS research permits, are reviewed by, the Head of Biodiversity (Officer in charge of research).
 - The Officer may approve or reject an application for a research permit, i.e. make a "Grant" or "Reject" verdict.
2. Applications for KWS research permits are reviewed and deliberated on, by an approval committee—who give a "Grant" or "Reject" verdict.

Note:

- The system should provide a feature for the Officer in charge (Senior Scientist Research and Authorization) to send communications to the committee members concerning applications.
 - Members of the committee should be able to access application documents.
 - A feature for correspondence should be made available, through which committee members can deliberate and give a verdict without a face to face meeting.
 - If a committee member remains silent on a request to give an opinion concerning an application—within a specified period of time, it should be interpreted that the member does not have an abjection on any aspect of the application.
 - For the interest of efficiency, face to face meetings should only be held in exceptional circumstances.
3. The Officer in charge of research (KFS/KWS) grants or rejects to grant a research permit, (by clicking on a radio button).
 - If the permit application is rejected, the Officer in charge enters reasons for the rejection on a template that outlines appeal instructions/procedure.
 4. The processed application is forwarded to the approving authority for approval.
 5. The approving authority approves the processed application.
 - Applicant is notified to pay Application processing fee.
 - Applicant pays requisite fee.
 6. The application status is updated to "Permit Issued" or "Permit Denied". This status is viewed by both the applicant and other relevant agencies.

Note:

- The permit is not available to the user until all relevant permits have been approved.

- If the permit is not granted, the applicant is notified of reasons for the decision and the appeal procedure.

G. Research License Approval Process by NACOSTI

1. Once an application for a research license has been marked as complete, it is assigned to a research specialist.
2. The research specialist reviews the proposal, issues technical advice and submits the application for subsequent processes.
3. The Head of research approves or rejects to approve an application for a research license, based on technical advice—by clicking on a radio button.
4. The processed application is forwarded to the registry officer.
 - If the permit application is rejected, the Registry Officer enters reasons for the rejection on a template that outlines appeal instructions/procedure.
5. The processed application is forwarded to the approving authority for approval.
6. The approving authority approves the processed application.
 - Applicant is notified to pay Application processing fee.
 - Applicant pays requisite fee.
7. The application status is updated to "Permit Issued" or "Permit Denied". This status is viewed by both the applicant and other relevant agencies.

Note

- The permit is not available to the user until all relevant permits have been approved by relevant agencies.
- If the permit is not granted, the applicant is notified of the same, and reasons for the decision and the appeal procedure are provided.

H. Processing of an Access Permit Application by NEMA (Desk Officer)

1. After an application has been reviewed for completeness, the Desk Officer accesses the system feature that allows creation and publishing of a notice to invite public comments.
 - The notice is published on the websites of all relevant agencies.
 - Instructions on how to submit comments are provided.
2. Upon expiry of the stipulated publication period, the desk officer uploads/imports public comments to the system.
3. The desk officer accesses the system feature that allows communication and invites ABS Technical Committee (TC) to determine the application.
4. The ABS TC deliberates on the application, and arrives at a decision (grant or reject). The ABS TC hands a Records of Decision (RoDs) to the Desk officer.

Note:

- Members of the committee should be able to access application documents, and public comments by logging into the system.
 - A feature for correspondence should be made available, through which committee members can deliberate and give a verdict without a face to face meeting.
 - If a committee member remains silent on a request to give an opinion concerning an application—within a specified period of time, it will be interpreted that the member does not have an objection on any aspect of the application.
 - For the interest of efficiency, face to face meetings should only be held in exceptional circumstances.
5. If the permit application is rejected, the Desk officer enters reasons for the rejection on a template that outlines appeal instructions/procedure to the Environmental Tribunal.
 6. If a grant decision is arrived at, the Desk Officer prepares conditions of approval, and requests the applicant to agree to them.
 - Applicant agrees to the conditions of approval, (by clicking on a radio button).
 7. The processed application is forwarded to the approving authority (Director Compliance and Enforcement) for approval.
 8. The approving authority approves the processed application.
 - Applicant is notified to pay Application processing fee.
 - Applicant pays requisite fee.
 9. The application status is updated to "Access Permit Issued" or "Access Permit Denied". This status is viewed by both the applicant and other relevant agencies.

Note:

 - If the access permit is not granted, reasons for the decision and the appeal procedure is made available to the applicant.
 - If the Access permit is granted, all ABS permits are available to the applicant. The applicant can access the permits from the **Approval** menu.
 10. The Applicant is given instructions on how to access the GR.
 11. The Publishing Officer—NEMA is notified of the issued access permit, for the purposes of publishing the International certificate of Compliance.

END OF A2

I. Processing of the MTA

1. If the User intends to transfer genetic resources, a Material Transfer Agreement (MTA) must be executed.

- GR User downloads the fills MTA template. **Note** that the MTA is filled by the applicant when filling the PIC and MAT.
 - The MTA is signed by legally authorized persons in both contracting parties.
 - GR User uploads the MTA to the system.
2. The GR User proceeds to collect the GR.

J. Scientific Collection Stage

1. During the research stage, there is scientific collection of samples.
 - Samples collected as per the collection protocol.
2. Officers overseeing collections (Field officers), log into the system, and fills a checklist of the collections.
3. System generated labels are printed and the Materials packaged and labeled (as per the organizations’ SOPs).

K. Processing of an export certificate

1. If the applicant indicated that they wished to export the GR, he/she gets a notification to pay export permit and Certificate of Clearance application fee.
 - Applicant pays the stated fee as required.
 - Finance office of the relevant agencies verifies payment.
2. The export licensing officer—KWS, and the relevant clearing officer are notified of the application.

Note

 - **KEPHIS**: issues a Phyto-sanitary certificate—for plant genetic resources.
 - **DVS**: - issues Veterinary Health Certificate—for animal genetic resources.
 - **Biosafety authority**: - issues clearance for exporting genetically modified resources.
3. The applicant is instructed to takes the GR samples for inspection.
 - An inspection officer, inspects the GR and clears or declines to clear the GR samples (by clicking on a “cleared” or “not cleared” radio button).
 - i. If not cleared, the Inspecting officer enters reasons on a template that outlines instructions/procedure on the next possible course of action and updates the system.
 - ii. Else, the Certificate of clearance is made available to the Applicant.
 - The KWS Licensing officer is notified of the clearance status.
4. The KWS Licensing officer considers the application and “Issues” or “Declines” to issue an export permit (by clicking on a radio button).

- If not issued, the KWS licensing officer enters reasons for the rejection on a template that outlines instructions/procedure on the next possible course of action and updates the system.
 - If issued, the export permit is available to the Applicant in .pdf format.
5. The System gives information to the applicant on the export procedure.

L. Publishing of International Recognized Certificate of Compliance (IRCC)

1. When an access permit is issued by NEMA, the system sends a notification to the [NEMA] Officer in charge of publishing the ICC.
 - The Officer prepares an ICC, by editing a standard ICC template.
 - The Officer accesses the system feature that enables him/her publish the ICC.
 - The officer publishes the ICC.

M. Uploading reports

1. The GR user logs into the system and accesses the system feature that allows him/her to upload reports.
2. The GR user uploads the report.
3. All relevant parties are notified of the report upload.

END OF A3

4.3 RESEARCH APPLICATION PROCESS STAGES PRE ACCESS

Table 6: Research Pre-Access Process

Activity / Step	Output	Participating Orgs	Required Documents
1. Identification of a Local partner	<ul style="list-style-type: none"> MoU or other collaborative framework with a Kenyan counterpart a letter of affiliation from the collaborating institution 	User Collaborating Partner Lead agent	
2. Identification of GR Provider	(Joint) Research proposal	Lead agency Community Individual Location of the GR	
3. Application for Research License	Research Permit	NACOSTI	<ul style="list-style-type: none"> letter of affiliation Partnership MOU Project proposal
4. Acquisition of Researcher's Pass	Pass / Visa	Immigration	<ul style="list-style-type: none"> letter of affiliation
5. Acquisition of Prior Informed Consent and Mutually Agreed Terms		GR provider Public administration Lead agency (KWS ,KFS)	<ul style="list-style-type: none"> Research permit Prior informed consent
a) Visit NEMA		Local partner	
b) establish contact with the resource provider	- <<Letter from NEMA endorsing the researcher>>	NEMA Public administration	

Activity / Step	Output	Participating Orgs	Required Documents
c) Hold meeting with the GR provider	<ul style="list-style-type: none"> - Confirmed minutes - signed attendance list by the participants - photos, videos, etc - Details of the signatory person on behalf of the provider - Revised proposal 	Lead Agency Local administration stakeholders	<ul style="list-style-type: none"> • Formal info provided by the user to the GR provider
d) Complete and sign PIC and MAT	Signed PIC and MAT	Lead agency Provider Local community User Witnesses	
6. Acquiring Access Permit			
a) File Access Permit Application	<ul style="list-style-type: none"> - An application 	NEMA	<ul style="list-style-type: none"> • Application form • Research permit • MoU or collaborative framework • PIC • Proposal • CV of all personnel involved • EIA certificate where applicable • MAT ²(+ abstract) • Minutes – confirmed and duly signed • Attendance list - Evidence of payment to NEMA - ID / passport / PIN

² There is a template stating what is format and required attachments e.g. GPS. LR No., species and nature of material, confidential binding agreements,

Activity / Step	Output	Participating Orgs	Required Documents
b) Formal Review of the Application	- Checked application to ascertain completeness	NEMA	
c) Publication of the application	- Invitation for comments from the public	NEMA Desk officer	<ul style="list-style-type: none"> - Details of applicant - Activity to be carried out - Timeframe of submitting comments
d) Determination of Application	- Decision on application	ABS technical committee NEMA	
e) Communication of the Decision on Application	- ACCESS PERMIT	NEMA	
f) Appeal	- Verdict	National Environment Tribunal	

ACCESS

- Carry out the Research

POST ACCESS

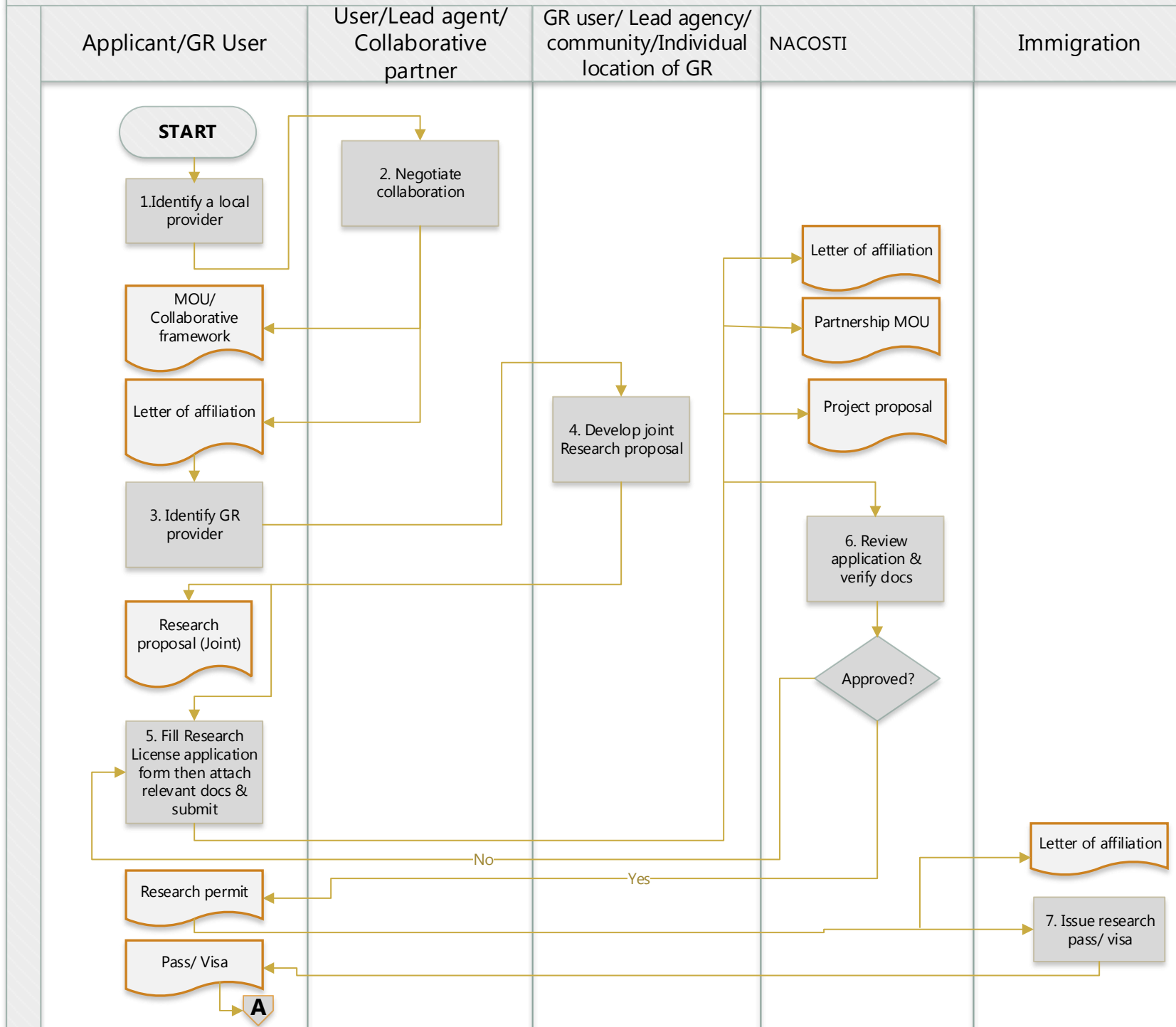
Table 7: Research Post Access Process

Activity / Step	Output	Participating Orgs	Required Documents
1. Execute a MTA		•	
a) Negotiate and sign the MTA	Signed MTA	<ul style="list-style-type: none"> • User • Relevant lead agency for the material • GR Provider 	
b) Submit to NEMA		<ul style="list-style-type: none"> - User - NEMA 	
2. Apply for Export		KWS	ALL OF THE ABOVE
a) Apply for clearance		KWS	

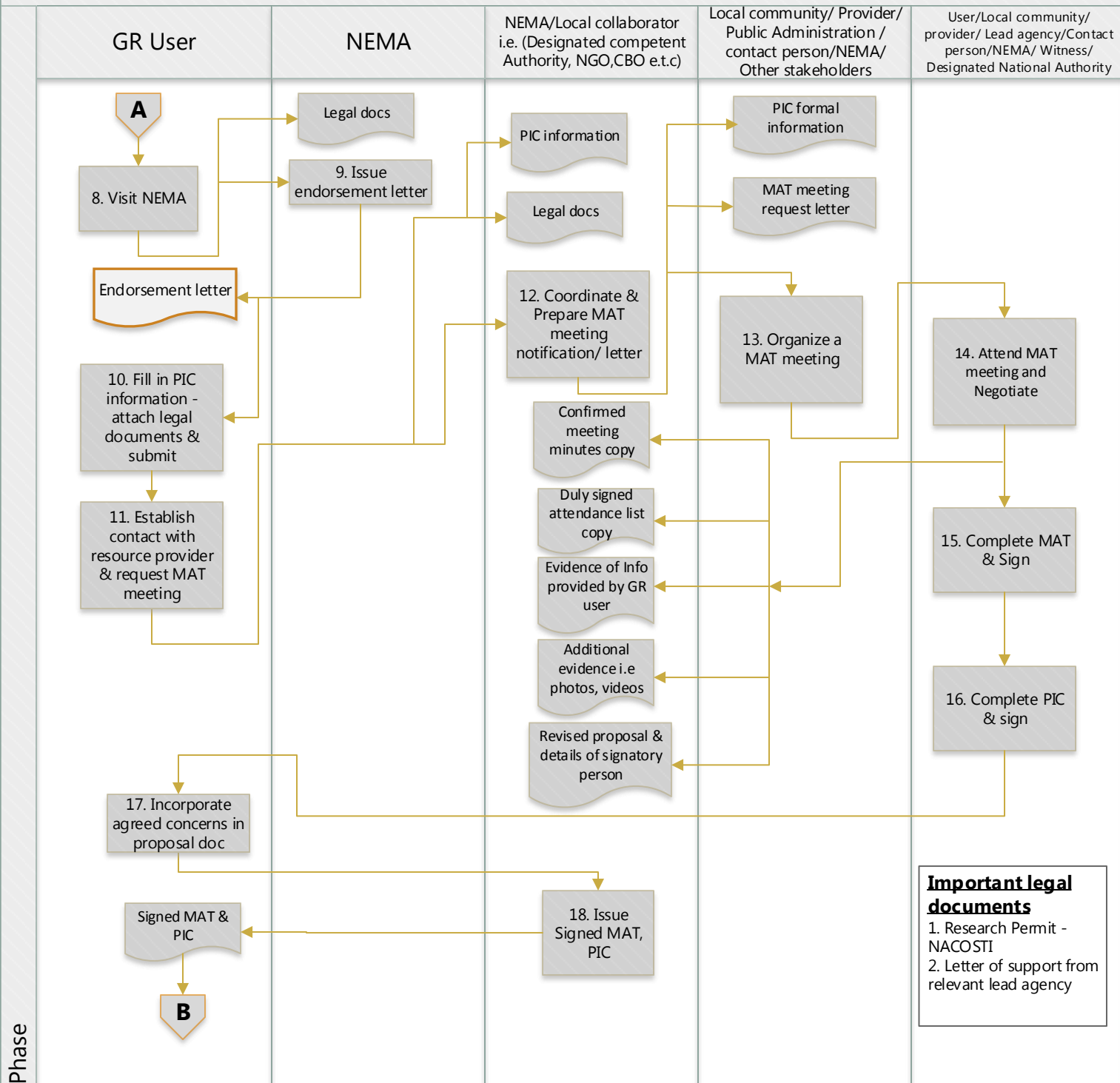
certificate:			
If Plant GR	Phytosanitary certificate	KEPHIS	
If Animal GR	Health clearance certificate	Dept of Veterinary Services	
3. Issuance of Export Permit		KWS	

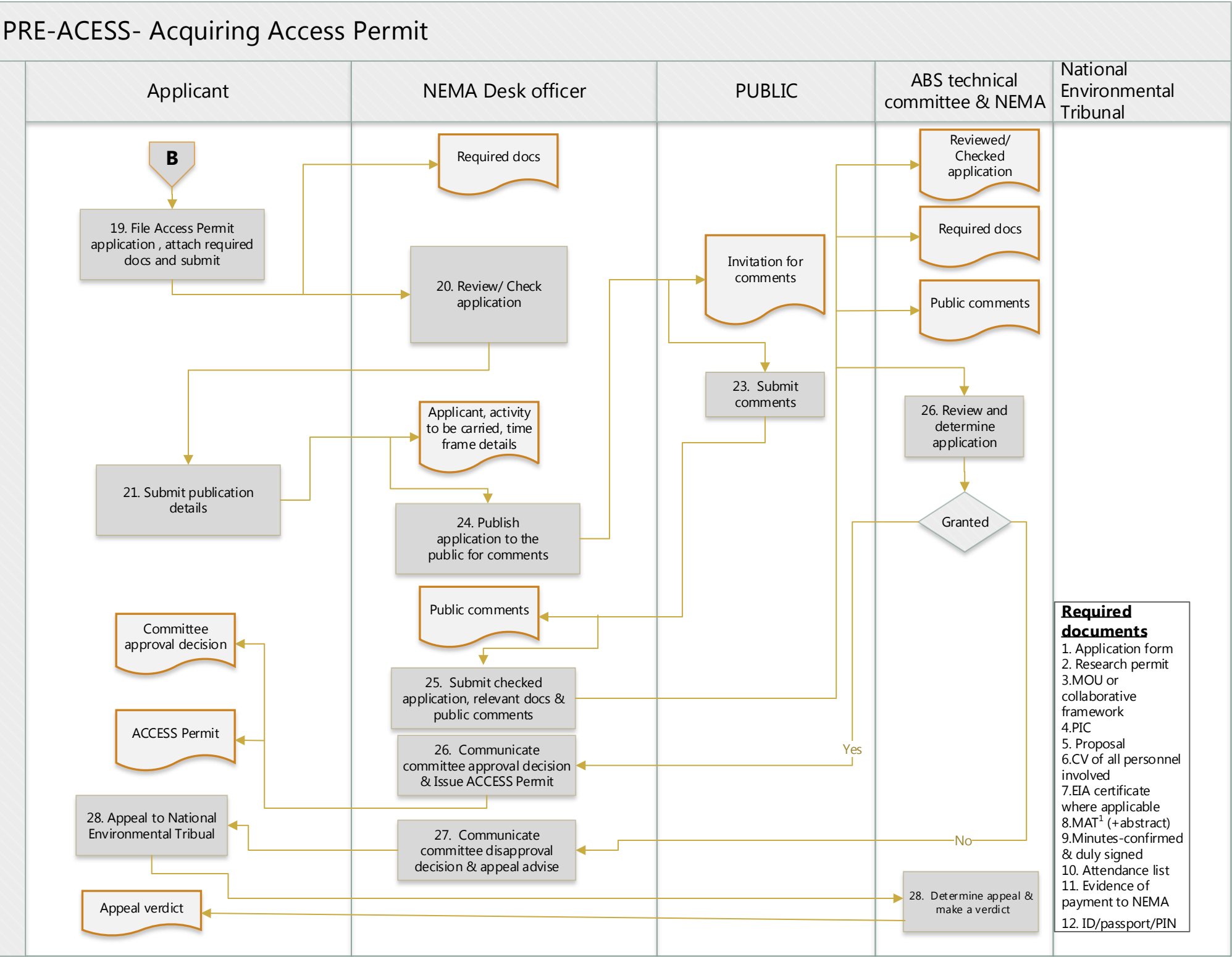
EXPORT / Cross border transfer of the material

PROCEDURE: PRE-ACCESS Process FLOW

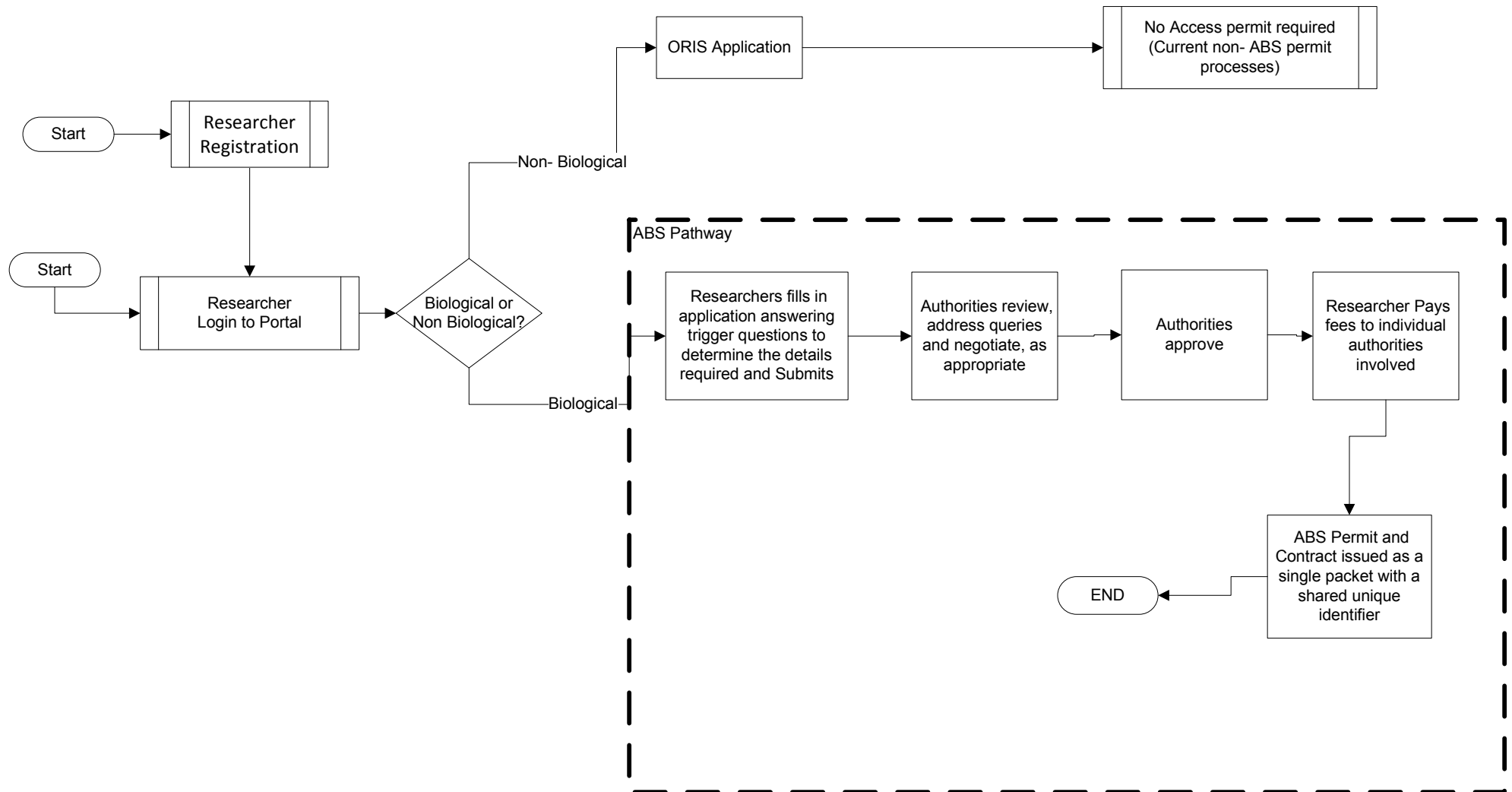


PRE ACCESS- Acquisition of PRIOR INFORMED CONSENT and MUTUALLY AGREED TERMS PROCESS FLOW

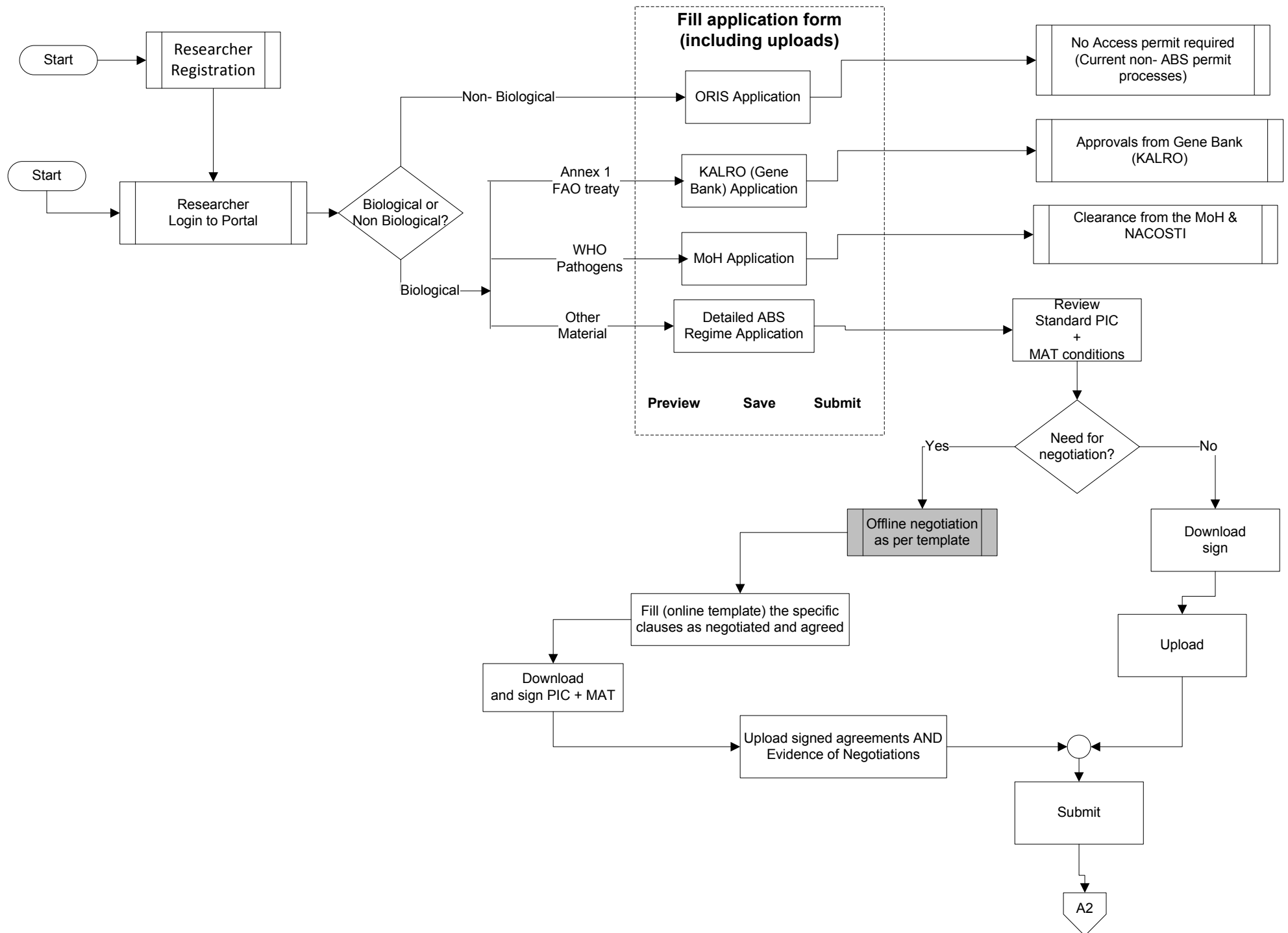




Permitting Requirements for Access to Kenya Biological Resources

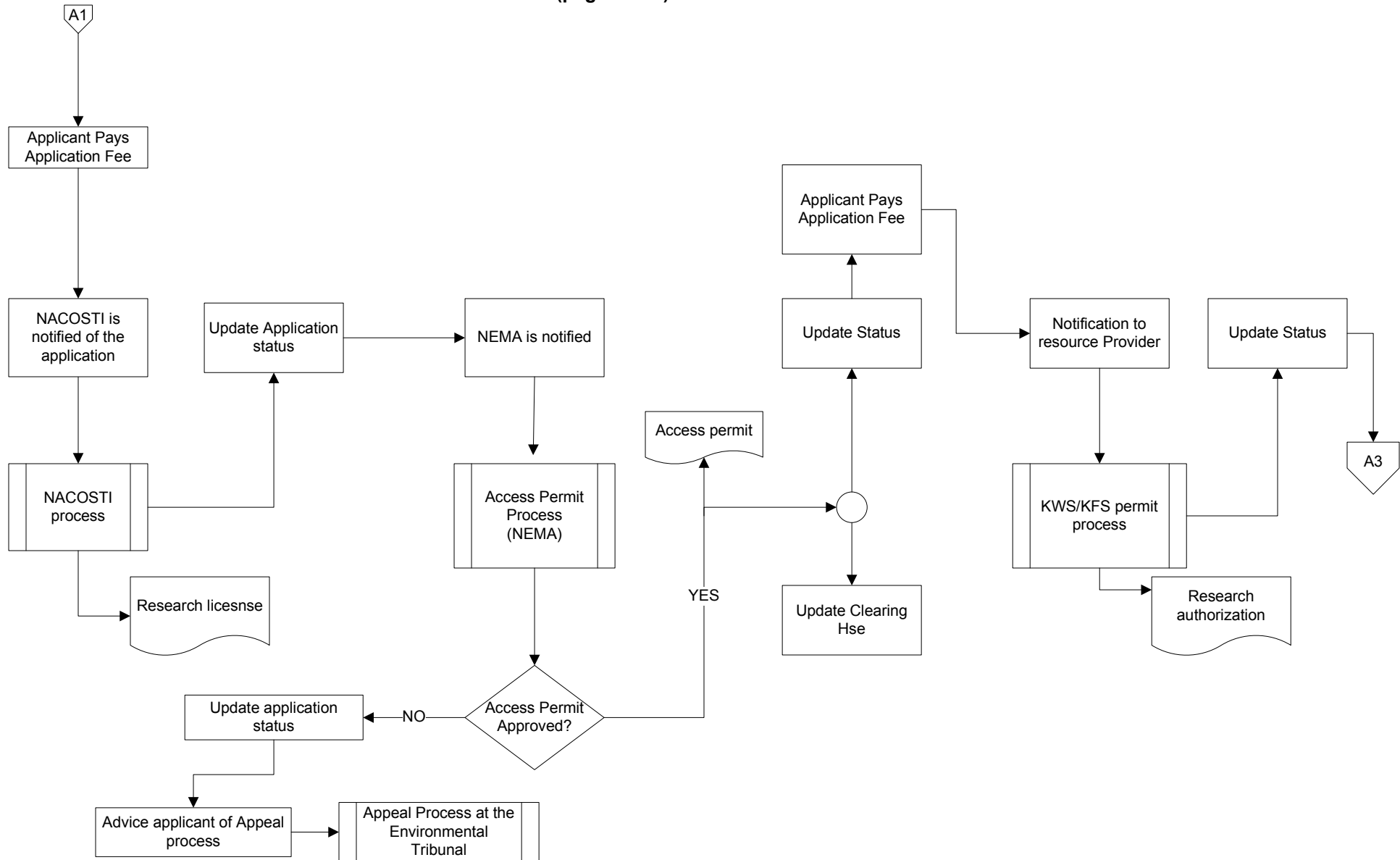


Permitting Requirements for Access to Kenya Biological Resources



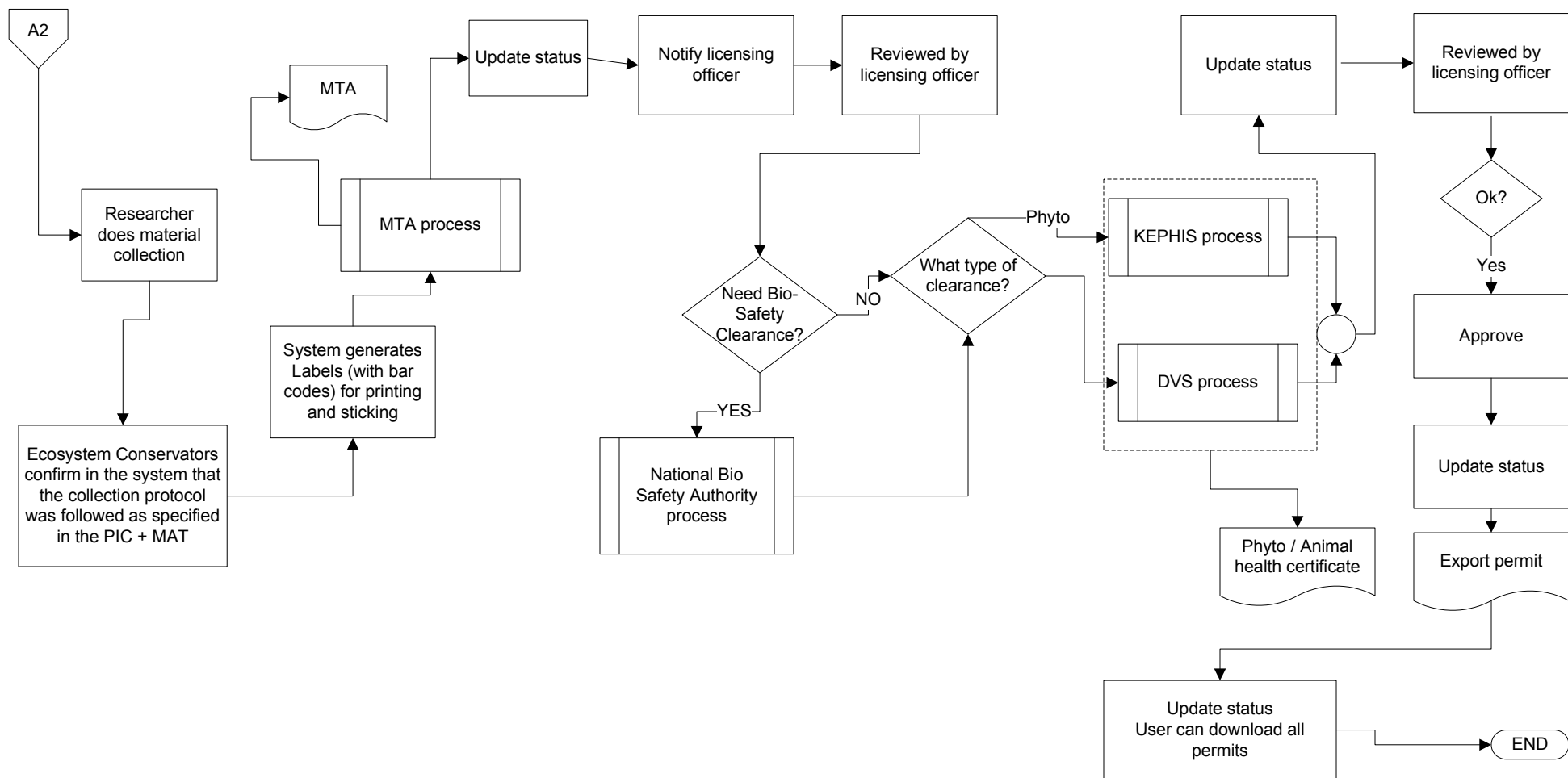
Permitting Requirements for Access to Kenya Biological Resources

(page 2 of 3)

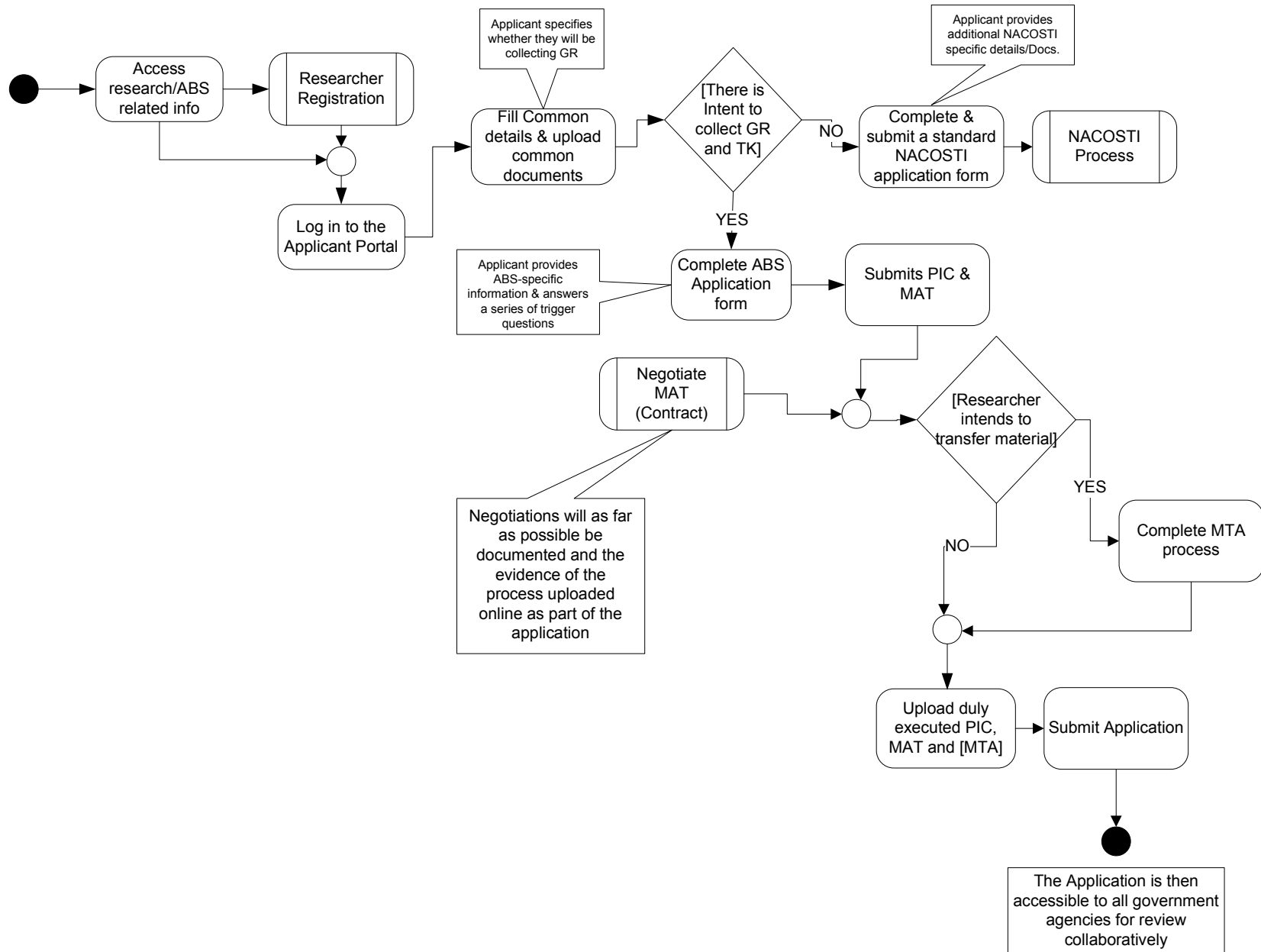


Permitting Requirements for Access to Kenya Biological Resources

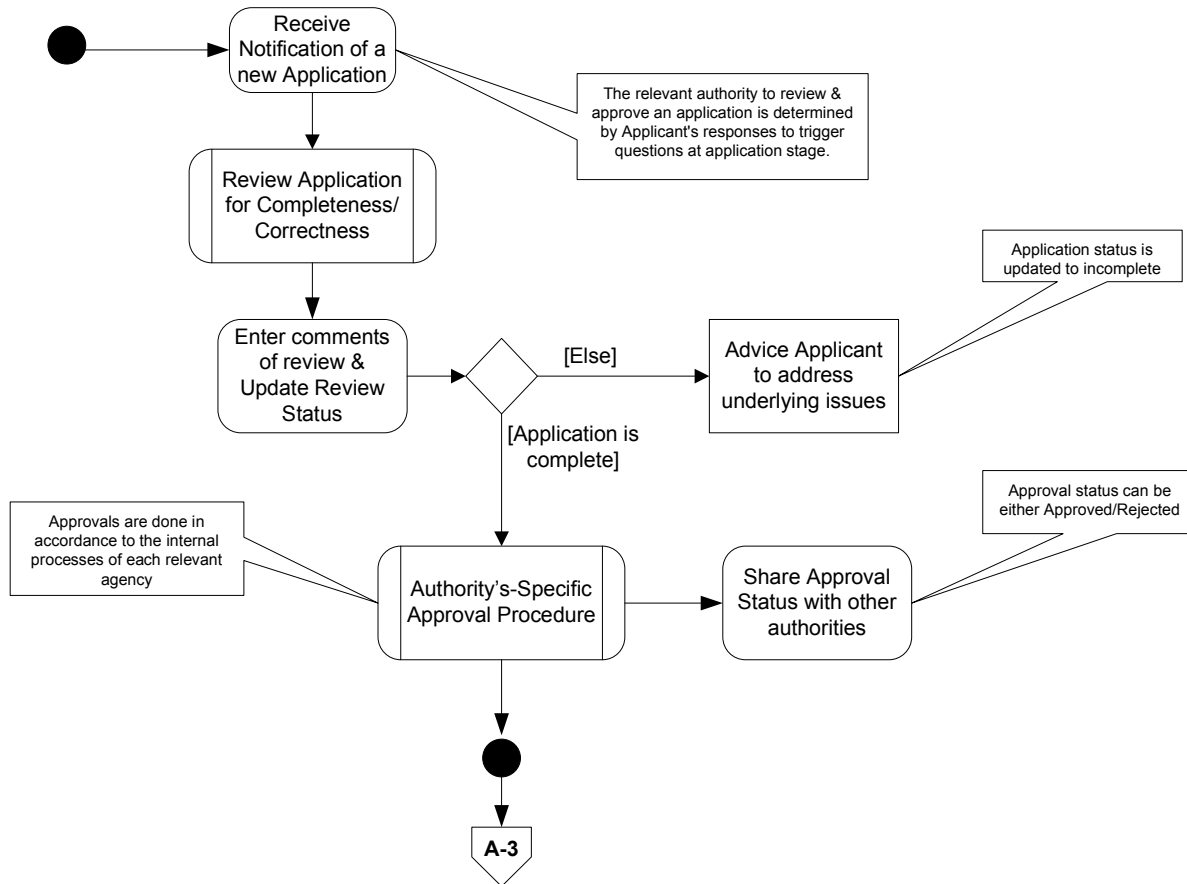
(page 3 of 3)



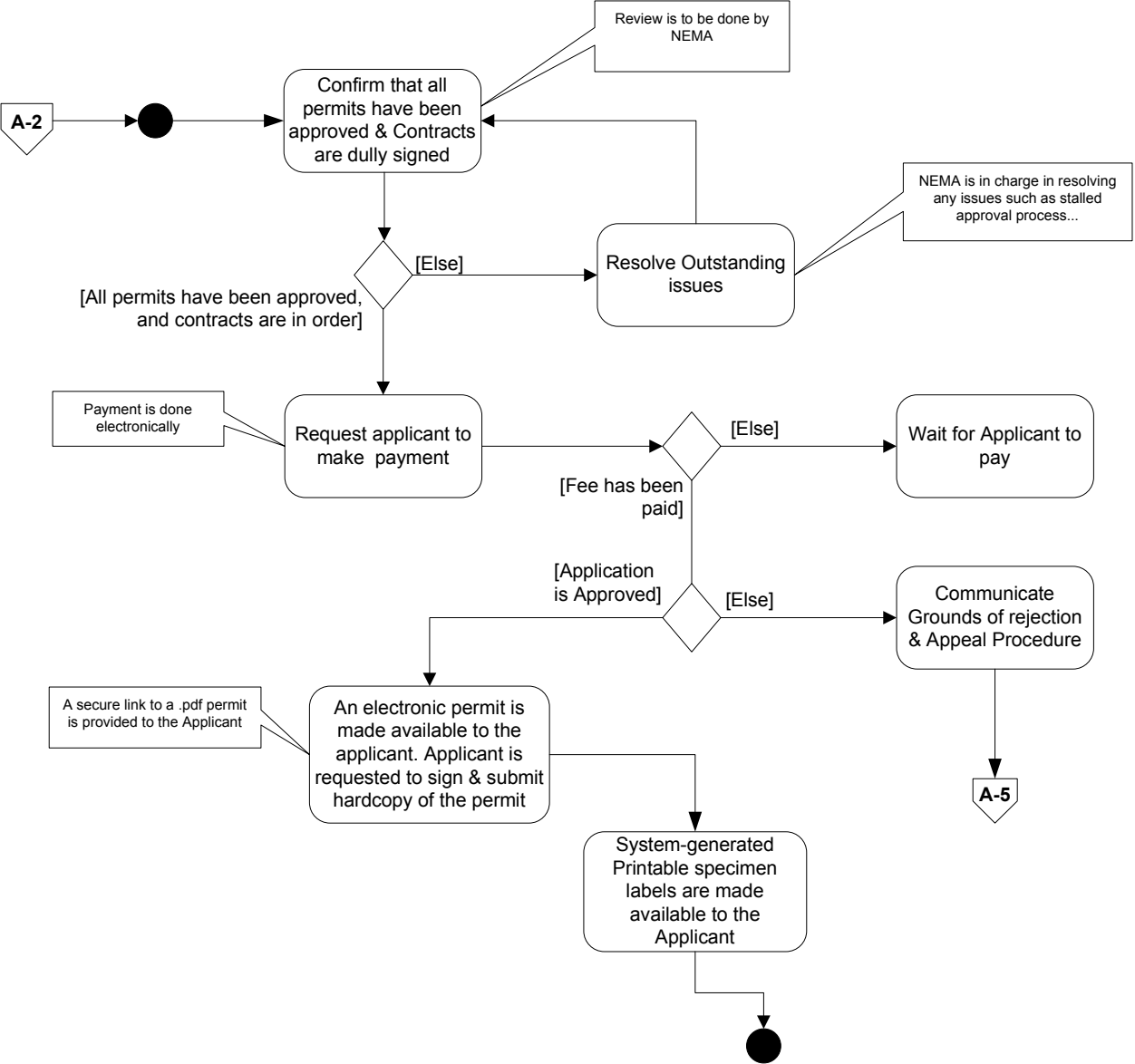
Registration And Application Phase



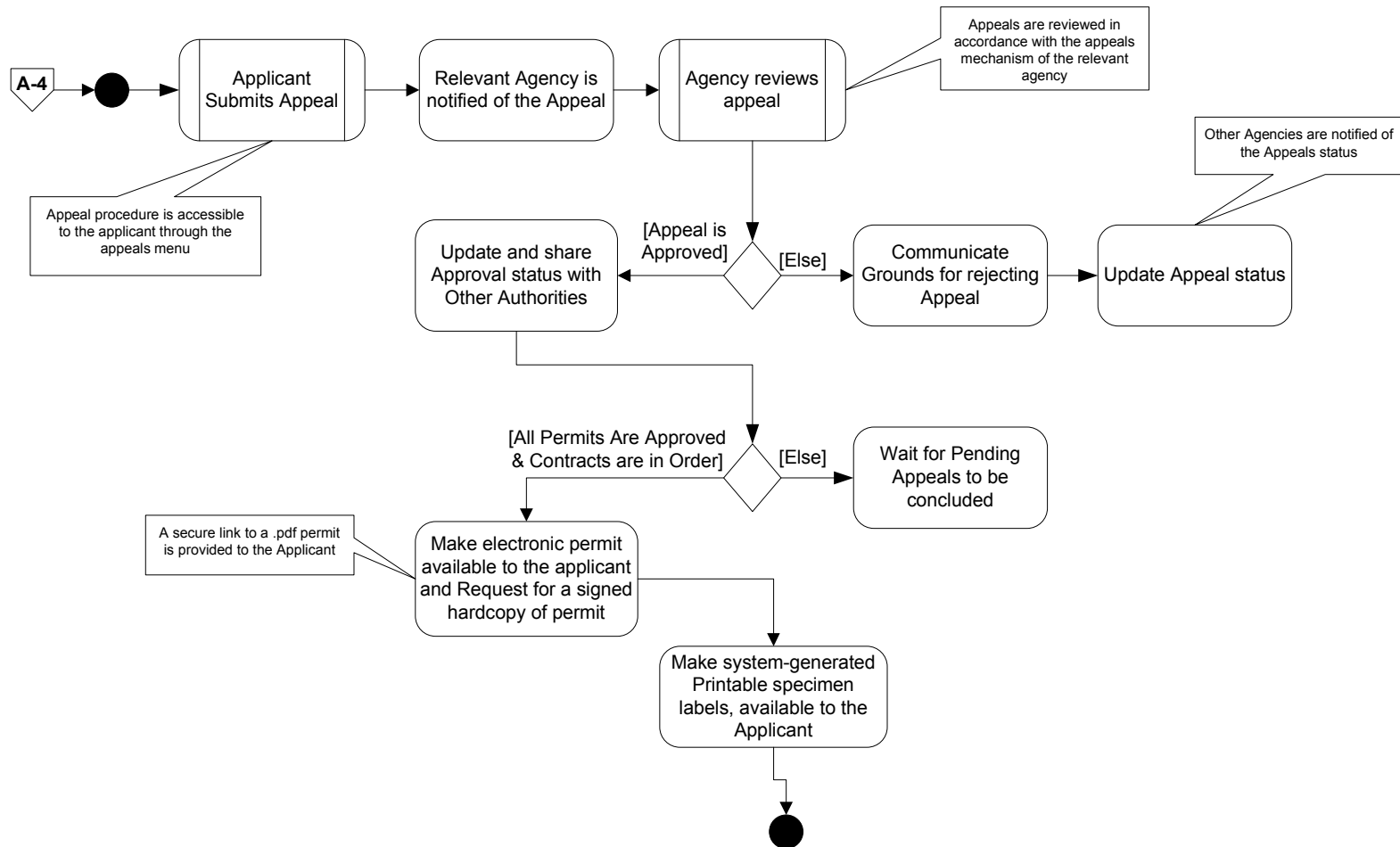
Authorities Review and Approval



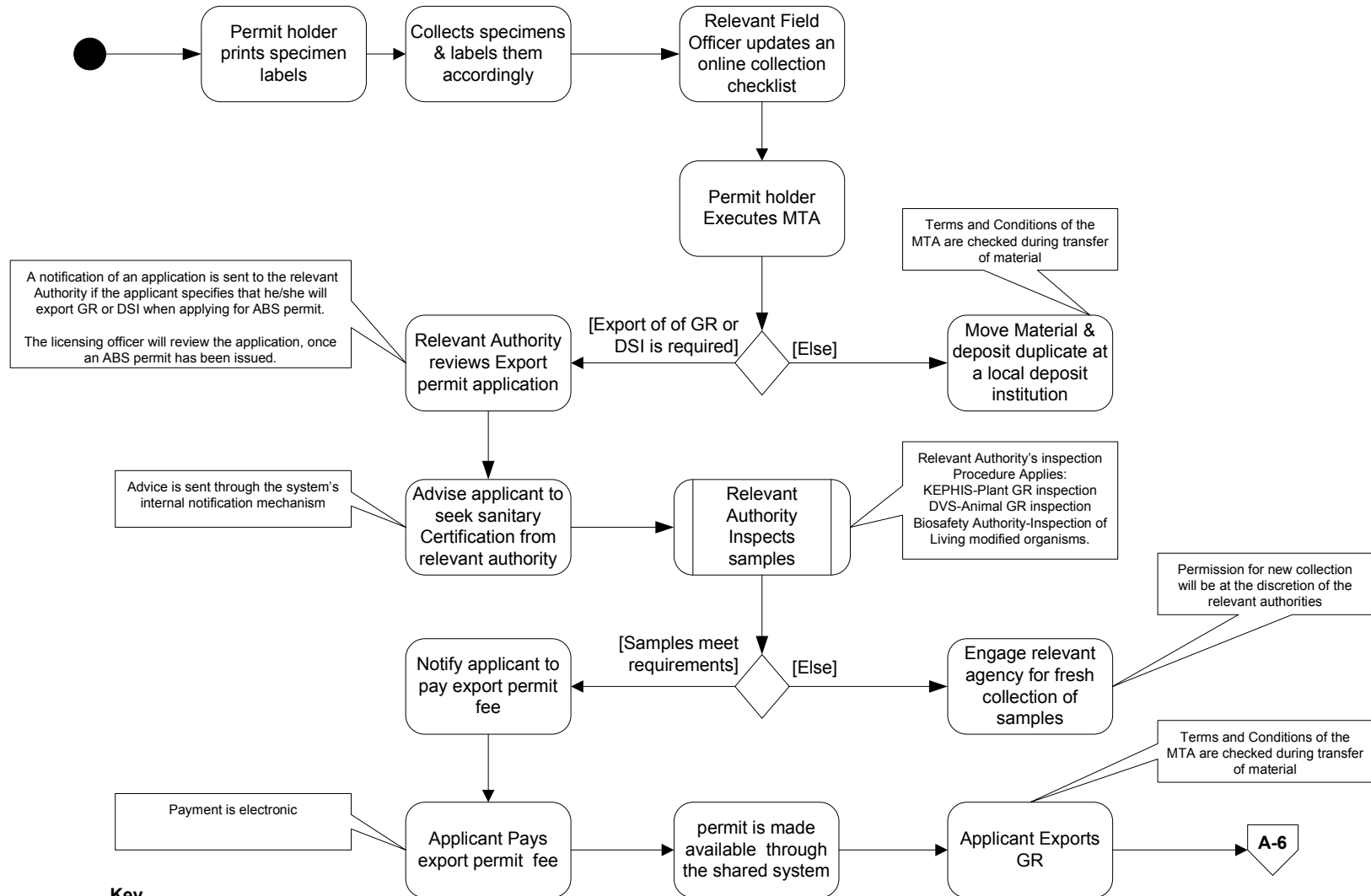
ABS Permit and Contract Generation



Rejection of Applications and Appeal



Post ABS Permit and Contract Arrangements



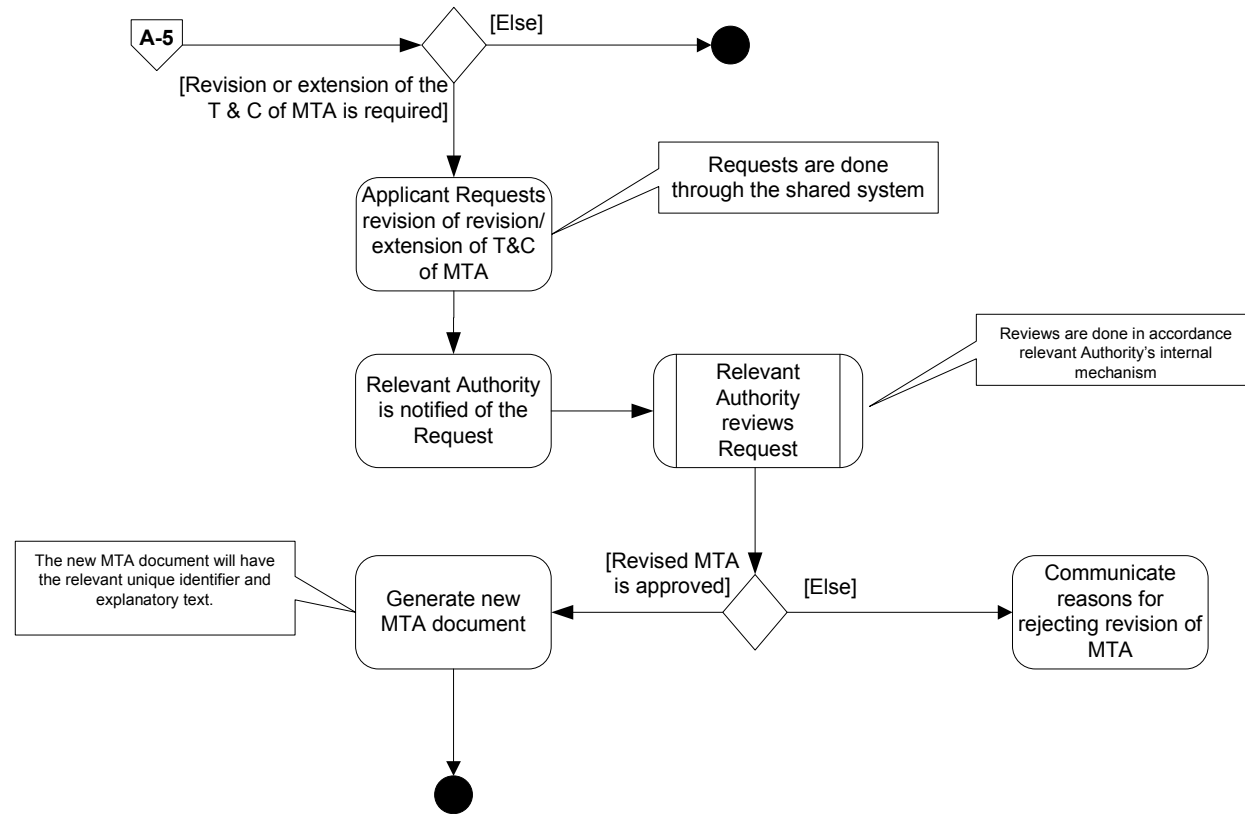
Key

DSI: Digital Sequencing Information.

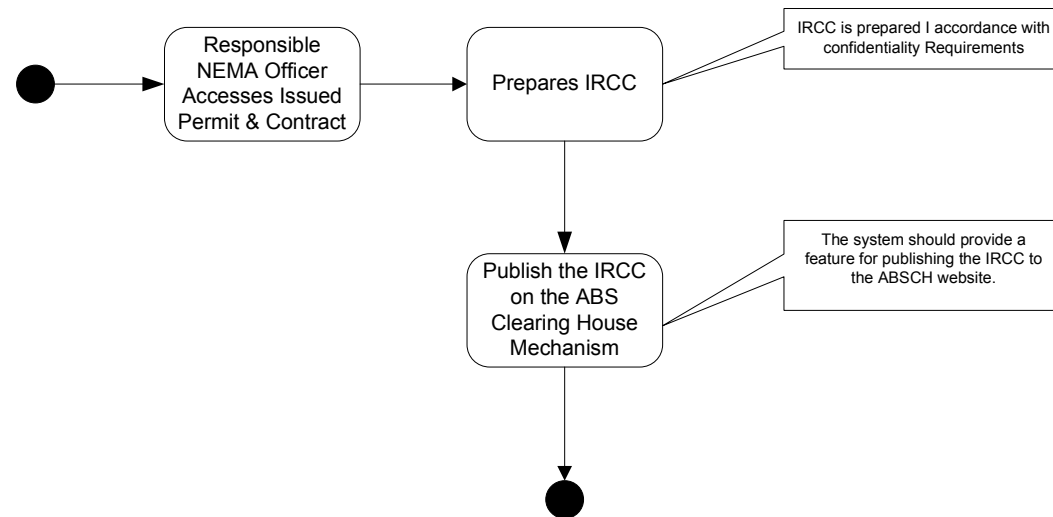
T & C: Terms and Conditions.

MTA; Material Transfer agreement.

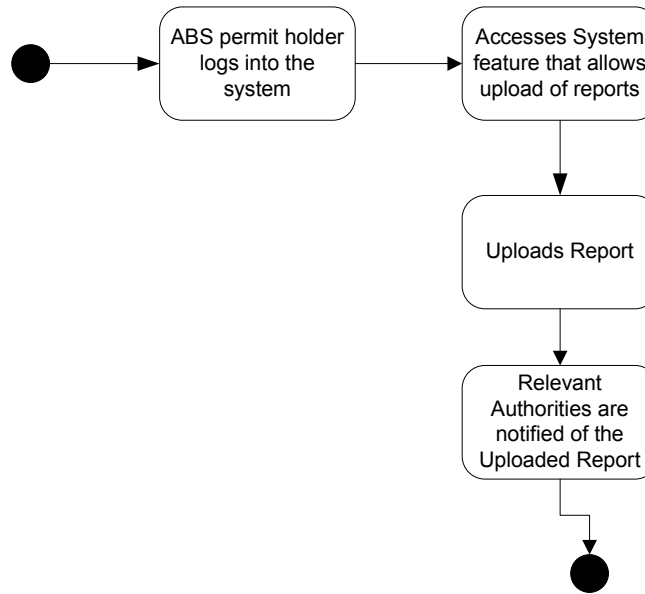
Post ABS Permit and Contract Arrangements



Publishing of an Internationally Recognized Certificate of compliance (IRCC)



Uploading reports



5. BENCHMARKING AND CHANGE MANAGEMENT

To consolidate the BPR exercise results, the team did a benchmarking visit to KENTRADE. The objectives of the benchmarking exercise were set out through the following guide;

5.1. Ken Trade Single window system summary

Kenya Trade Network Agency (KENTRADE) is a state Corporation under the National Treasury that is mandated to facilitate cross border trade and establish, manage and implement the National Electronic Single Window System (Kenya TradeNet System) as a Vision 2030 flagship project under the economic pillar. Ken Trade was formed by a presidential directive in 2011.

The Kenya TradeNet System provides for a single entry point for public and private entities involved in cross-border trade (imports and exports). Exporters and importers use the system to lodge relevant imports/export documents and make relevant payments electronically, whilst government agencies use the System to process and approve requests and issue permits. The ken trade single window system facilitates import and export trade by simplifying and harmonizing business processes through effective management of the Trade Net System and provision of related services for Kenya's global competitiveness".

When an entity (importer or exporter) wants to do an import or export, the entity seeks consent/clearance from a relevant body and obtains required documentation.

The entity (permit applicant) then logs into the Kenya TradeNet System and creates an account. The system sends a password to the permit applicant's email address, which he/she uses to log into the system, and proceeds with the application process.

The Permit-applicant is required to fill in details related to the consignment (such as nature of goods, origin, destination etc.). The system also assigns the consignment a Unique Consignment Reference (UCR) number, and HS codes. The UCR number is used to track the consignment, and the HS codes are used to generate reports. The UCR number is also used by used by customs and KRA officials to assign an entry number to grant import and export of research resources.

The applicant is also required to upload all the requisite documents, and also make payment for the export certificate—if required to do so. The payment can be done through the Kenya TradeNet System—if the entity/government agency issuing the permit has allowed KENTRADE to automate the payment process. Otherwise, the applicant has to make payment to the entity/government agency issuing the certificate.

When the application form is dully filled, payment made and all relevant documents have been uploaded, the applicant submits the application for approval. The relevant entity then approves the application through the Kenya TradeNet System, and issues the certificate of export.

5.2. Benchmarking Guide at KENTRADE

1. To have an overview of KENTRADE single window and import/ export process from beginning to end and understand how the single window system operates.
2. To examine the single window modules and how the system has been integrated with other systems at other government agencies.
3. To learn how KENTRADE went about implementing the single window system, the methodology KENTRADE used to implement the single window system and how KENTRADE staff and other external users have been trained on how to use the system.
4. To get a first-hand experience of the single window system through a demonstration of the system in an interactive process to help us get recommendations for the ABS system.
5. To know how the single system works in the other government agencies where it has been integrated.

5.3. Benchmarking Exercise

Below are the questions we posed to John Mbithi, the system analyst of Single window system at KENTRADE.

Q: How are other systems linked/interfaced with the KENTRADE system?

- KENTRADE provides an electronic single window system, which is used by exporters and importers to apply for import-export permits, and GA's to issue these permits.
- There are two options through which stakeholders use the system:
 - i. An agency can integrate their system with the single window system (e.g. KEPHIS). In this case, the systems share data in real-time.
 - ii. A stakeholder logs into the single Window system and do everything on the permits portal. Templates for GAs permits are available on the single Window system.

Q: What is the Starting point when an applicant wishes to apply for a permit?

- The starting point for application of a permit is to create an account on the single window system
- A user applies for user registration (KRA PIN)
- KENTRADE team validates registration details i.e. PIN checker
- KENTRADE organizes training
- A user goes to the Trader Portal then logs in.
- The applicant then obtains a UCR number (an alphanumeric number -auto generated), which is tied to and used to track his/her consignment.
- The applicant provides necessary details and submits the application.
- KENTRADE logs in sees the application then either rejects or accepts (Review by KRA)
- A approval notification sent to an applicant by mail

- The relevant GA, is notified of the application.
- The GA approves the application, if all requirements have been met.
- The applicant is sent a PDF copy of the permit.

Q: How do you handle payment for various corporations?

- When the user clicks on submit, if the permit requires payment, the system generates an e-slip, and the application is put into “pending state”.
- The applicant prints the e-slip and presents it to the bank.
- Upon payment, the status of the application changes from pending to submitted.
- Application fee goes directly to the relevant GA’s account.
- Payment is done through the National payment gateway (NPG)—(a KRA system).
 - ✓ The bank, the Single Window system, and the NPG are linked by revenue codes.
 - ✓ When an e-slip is presented to the bank, the teller inputs e-slip details (UCR no, payment number) into the NPG portal then submits. Once this is done, payment is reflected on the single window system. (Payment details from the gateway, are sent to the single window system).
 - ✓ The banker generates payment receipt and gives to the applicant

Q: Does integration of the single Window system with other systems require streamlining of processes of the system’s owner?

- BPR is done in the event that a GA wants to integrate their system with the single window system.

Q: How do you handle corporations whose permitting processes are manual, but wish to use the KENTRADE System?

- Do everything on the single window system. Templates for GAs permits are available on the single Window system.

Q: Have you encountered a situation where the law establishing a certain corporation impedes it from using the single window system?

- YES. In cases where competing interests exist between GAs. This has led to legal battles

Q: Major Challenges in implementing the single window system?

- No major challenges, apart from the case where competing interests exist.
- For example Kenya Medical Laboratory Technicians and Nursing Board verses Nursing council. In such a case an executive order is needed.

Q: Any advice on how we can implement the ABS system?

- Use M-pesa or any other payment option. Use of an e-slip, requires the creation of a payment gateway, which is a longshot.
- The Option of integration with other systems is a bit difficult.

5.4 Change Management – Lessons Learnt

The staff of NEMA, KWS, KFS, NACOSTI, KEPHIS, DVS, UoN, NMK and KALRO shared their experiences and the insights shared led to the following best practices that should inform the ABS system:

1. Use of Pilot sites – The ABS system should be piloted in NEMA, KWS, KFS, NACOSTI, DVS and KEPHIS and the other subsequent government agencies can be brought on board later on.
2. Identification and working with Champions in the organization
3. Participation of all (proper users/stakeholder management) will lead to acceptance of the ABS system. A clear vision should be communicated to all stakeholders, and an explanation of how the ABS system is being used as a vehicle to achieving the organizational vision should be made clear.
4. Culture management – Ken Trade had to deal with resistance of change by long serving officers to embrace new ways of working.
5. Being flexible and responsive to the user needs. The solutions must be organizational processes driven and not technology driven
6. Retreats – Incorporation of user training for all staff whether junior or senior staff such that the processes are clear to all
7. Mapping of the services – Ken Trade carried out mapping of the services and that helped to capture the details and design user interfaces and functionalities that resonated with the user expectations. Proper Job descriptions should be given once the system is implemented.
8. Run on a broader organizational transformation agenda – there was a spirit of innovation at Ken Trade. Such a momentum and focus on change and innovation should be created.
9. Ensure high level support by the executive management of all involved government agencies
10. Carry out benchmarking – to learn from similar experiences as well as to set realistic standards

6. FIRST CEO's BREAKFAST MEETING

NEMA in conjunction, technical and financial support organized a CEO's breakfast meeting on 16 May 2017 to brief the Director Generals and directors of all the involved government agencies on the outcome of the entire process.

The breakfast meeting was well attended with the Prof. Geoffrey Wahungu (NEMA), Dr. Moses Rugutt (NACOSTI), Dr. Mzalendo Kibunjia (NMK), Emilio Mugo (KFS) and Dr. Felister Makini (KALRO) representing their organizations in full capacity as Director Generals. While Dr. Isaac Macharia and Simeon Kibet (KEPHIS), Dr. Francis Gakuya (KWS), Dr. Naftaly Mwaniki (DVS), Prof. Gideon Nyamasyo (UoN) and Daniel Kiange (KENTRADE) represented their director generals.

The outcome of the meeting was positive with all the DG's and their representatives pledging support for the process and the new system and also planned for a CEO's only meeting to thrash out the remaining contentious issues such as the

- payment process and technique
- system hosting
- sustainability
- maintenance
- security and
- capacity building
- and related budgetary implications.

The final CEO's thoughts were this system couldn't be delivered fast enough and deployed as it is critical to their organization processes.

7. CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This project sought to carry out a Business Process re-engineering exercise at the NEMA, KWS, KFS, KEPHIS and NACOSTI in order to develop a Business Requirement Document for the proposed ABS system. AMBAND has facilitated that process and this document captures the findings. We believe that the results of this exercise form a solid foundation for the development and implementation of an integrated, web based ABS system. The ABS system will help NEMA, KWS, KFS, KEPHIS, NACOSTI, DVS, NMK and KALRO achieve:

1. **Improved Efficiency:** Increase permit processing efficiency by as much as 80%.
2. **Improved Productivity:** Since all permits application details will be shared by all the government agencies it will be easier to consult each other and make a rapid decision.
3. **Better Permit Service:** The research will be able to interact with the government organizations and be updated on the progress of his application
4. **Enhanced Service Delivery:** The permit application process will be shortened since all organizations will be able to collaborate and share information on all applications
5. **Higher Revenues:** Since the permitting application process will be automated, the involved organizations will process permits faster and within a shortened period translating to higher revenues.
6. **Increased Applicant Satisfaction**
 - Enables faster, convenient, and quality services to permit applicants
 - Promotes uniformity and fairness in permit application processing
 - Encourages better applicant compliance with the relevant permit issuing organization permitting rules and regulations
 - Enhances permit information dissemination efficiency
7. **Improved Organization Efficiency**
 - Streamlines internal permitting processes and procedures
 - Simplifies steps for permit application
 - Reduces permit processing from 6 months or more to less a month
 - Enables more informed decisions on permit issuance or rejection
 - Improves permit information flow between different government agencies
8. **Enhanced Records Integrity**
 - Ensures permit records accuracy and integrity
 - Makes permit records readily available
 - Minimizes paper-based permit documentation
9. Consolidate disparate permitting, licensing and compliance systems
10. Assess permit compliance faster and with greater accuracy
11. Increase visibility into process, status and workflow across permit processing departments in the different government institutions

12. Facilitate timely, accurate and efficient revenue billing and collections
13. Enable research and permit application -friendly processes with permit self-service
Application available online
14. Reduce permit submission error rates by over 50%
15. Support field-based staff through remote connection to the central database.

We have also prepared a detailed software requirements specification document accompanying this report that highlights functional requirements, detailed software characteristics, non-functional requirements as well as hardware requirements.

We thank the GIZ HQ, NEMA, KWS, KFS, KEPHIS, NACOSTI, DVS, NMK, UoN and KALRO for the opportunity to work together, for their continuous unwavering support throughout this process and their cooperation.

7.2 Recommendation

This section brings together the steering committee, stakeholders and workshop attendees recommendations.

Table 8: Summary recommendation from the workshop attendees

Comment	Recommendation – where applicable
1. Reduce number of trigger Questions (Biological Non- Biological) <ol style="list-style-type: none"> a. Advice on terms used (what is Biological and what is not) b. Determination of whether material will leave the country 	1. <ol style="list-style-type: none"> a. use appropriate terms, information portal b. review feedback to the applicant in the process at various stages
2. Add KALRO as a national resource provider	2. SMTA for those national plant genetic resources for food and agriculture (PGRFA) which are in Annex 1 of the ITPGRFA and have been notified by Kenya to be accessed under the SMTA– can be executed at KALRO KALRO could negotiate MAT for other PGRFA not in the SMTA
3. How to handle non-permitting issues in the ABS framework	3. Further work / thoughts <ol style="list-style-type: none"> - on Gene bank / access in ex situ collections, specifically to GR which were not collected in Kenya - on Bio-trade / ABS related to privately (farmer) owned GR harvested and exported for uses which fall under the ABS Regulations - on Pathogens / discussions how to implement NP Art. 8 b) on "expeditious" access and benefit sharing with regard to pathogens, taking into account the system established by the WHO PIP Framework

4. Timelines – should be achieved	4. System to have provisions for time logs, as events happen Number of committees
5. How can notifications be recognized by an institution	
6. How do we ensure the costs are competitive	- Needs legislation review
7. Make the publication available to all stakeholders	7. Make review comments transparent to all the agencies involved
8. Have MTA concluded at PIC+MAT process stage but signed after collection	
9. Add appeal provision in the process flow	
10. Add aspect of capturing collection protocol and generating Labels in the collection phase	
11. Reference to Bio safety authority comes before DVS and KEPHIS	
12. Payment	CARD (VISA,etc), paypal, mobile money (Mpesa, etc)
13. Enforcement of Agreements	13. how can we check/assure the agreements are being followed?
14. NOTHING IS APPROVED UNLESS EVERYTHING IS APPROVED	

Further work / thoughts

- on Gene bank
- on Bio-trade
- on Pathogens
- Amendments to an application
- Contracts
- Bio safety

7.3 Summary of the Steering Committee Meeting on 5th May 2017

Below is a summary of the deliberations by the multi-organizational Steering Committee meeting held on 5th May 2017 at GiZ country office (Riverside drive road, Nairobi)

Table 9: Summary recommendation of the steering committee meeting

Feature / Aspect	Feedback in the steering committee
Trigger Questions	<ul style="list-style-type: none"> The feature was very well received. The creative commons page was shown It was stressed that information should be provided to ensure that the applicant/researcher makes the appropriate choices in the trigger questions Provide definition of terms – including in the Kenyan context as guided by the legal framework <p>Consequences of user choices:</p> <ul style="list-style-type: none"> - System to allow during application review process, the officers in a given government agency (like scientists at NACOSTI or KWS) to scrutinize the application proposals closely such that if there is a discrepancy between the information provided, the application properties are updated accordingly (this will include feedback to the user and user intervention as necessary). An example is where it could be recognized that a user marked a research as non-biological (in answering trigger questions) whereas the research actually involves genetic resources
Associated knowledge	<ul style="list-style-type: none"> It was noted that this was missing in the summary diagram It was agreed that we need to include it in the summary diagram. The first decision point then has the following two possible choices <ul style="list-style-type: none"> --Non Biological OR --Biological and/or associated knowledge→
Holding container	<ul style="list-style-type: none"> This was agreed upon to explain that the permits are available only when all permitting organizations have approved
Payment	<ul style="list-style-type: none"> Electronic payment was agreed upon (Mobile Money, cards, paypal, etc) Each institution to collect payments as per their mandates Issued to be escalated to other levels (CEOs and legal) include: <ul style="list-style-type: none"> Review of the amounts charged for research What point of pay – as application fees or as payment for a permit once approved Standardization of permits and serialization of the ABS framework outputs
Feedback in the application review (processing)	<ul style="list-style-type: none"> System to ensure transparency to all institutions Allow inter agency consultations with appropriate security features Applicant not to have access to internal messages between the agencies
Link to Immigration department (foreign researcher VISA application)	<ul style="list-style-type: none"> Agreed that this should be considered – the foreign researchers need the research permits to apply for a visa from the Kenyan authorities
Confidentiality	<ul style="list-style-type: none"> System to respect confidentiality requirements and ensure access to information is restricted.

Feature / Aspect	Feedback in the steering committee
	<ul style="list-style-type: none"> • Even in the clearing house mechanism, it's not all the information in the agreement (contract) and the research proposal that is shared publicly
Renewal of research permits after one year	<ul style="list-style-type: none"> • System to incorporate a feature such that a research does not start the application process afresh • This should include facilities for researchers to upload progress reports
PIC + MAT process	<ul style="list-style-type: none"> • There is no standard PIC and MAT. • PIC especially is a process – the various national resource providers – KFS and KWS have provided guidelines • System can provide a template to guide what MUST be covered in an agreement • At the end the applicant should upload the duly executed (signed) consent and agreement
MTA	<ul style="list-style-type: none"> • MTA process can be initiated once access permit process has no objections – this will ensure a shorter period is taken for the export license permit processing • The standard MTA is applicable for the Annex 1 FAO treaty resources
Development of the system	<ul style="list-style-type: none"> • Agreed that the level of analysis so far was good. Development can start and the participants looked forward to a demo of a prototype • Other issues to be addressed: <ul style="list-style-type: none"> ○ Hosting of the system ○ Sustainability ○ Capacity building (Infrastructure as well as personnel training) ○ Risk analysis: the strong and weak points of the system ○ Digital rights management ○ Security of information – who has access to what

8. APPENDICES

List of the Appendices

8.1 Software Requirements Specification

