

Economic Valuation of Tangible and Intangible Assets of the Ethiopian Orthodox Tewahedo Church: A Review of Possible Quantifications and ways forward

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የኢትዮጵያ ኦርቶዶክስ ተዋሕዶ ቤተ ክርስቲያን የበርካታ ሀብታት ባለቤት፣ እንዲኹም ለብዙኃን የኩራት እና የመመኪያ ምንጭ ነች። በመኾኗም ያሏት ሀብታት በአግባቡ ሊጠበቁ፣ ይዘታቸውን በጠበቀ መልኩ እድሳት ሊደረግላቸው እና ዘላቂ ጥቅም ሊሰጡ እንዲችሉ ለማድረግ በጣም ትኩረት ሊሰጣቸው እንደሚገባ የሚካድ አይደለም። ነገር ግን እነዚህን ሀብታት በአግባቡ ለመመዝገብ፣ ለማደራጀት እና የባለቤትነት መብትን ባረጋገጠ መልኩ ለመጠቀም የሚያስችል የተዋቀረ ሥርዓት ባለመኖሩ ወይም እብዛም በመኾኑ ቤተ ክርስቲያኒቱ ያሏትን ሀብታት ለማስተዋወቅም ኾነ ከሀብቶቿ ልታገኝ የሚገባትን ጥቅም እንዳታገኝ ትልቅ ፈተና ኾኗል። ይኸንን መሀረት በማድረግ ይህ ጥናት በኢትዮጵያ ኦርቶዶክስ ተዋሕዶ ቤተ ክርስቲያን ዋነኛ ሀብታትን የመለየት እና በምጣኔ ሀብት (ኢኮኖሚክስ) ንድፈ ሐሳብ ውስጥ የተካተቱትን በጣም ተገቢ የኾኑ የንብረት ግምገማ ቴክኒኮችን በመገምገም ቀደምት የጥናት እና ምርምር ውጤቶች (ተዛማጅ ጽሑፎችን) ክለሳ ባደረገ ዘዴ ላይ ተመርኩዞ ቀርቧል። ጥናቱ ሦስት ውጤቶችን አካቷል። በመጀመሪያ ጥናቱ የኢትዮጵያ ኦርቶዶክስ ተዋሕዶ ቤተ ክርስቲያን ሀብታትን በዐምስት ክፍሏል (ለንብረት ግምገማ ምቹ በኾኑት ላይ በማተኮር) እነዚህም አካላዊ ንብረቶች፣ አእምሯዊ ሀብቶች፣ ባህላዊ እሴቶች (የሚዳሰስ እና የማይዳሰሱ)፣ ከአካላዊ እና አእምሯዊ ደኅንነት ጋር የተያያዙ ንብረቶች፣ እንዲሁም የተፈጥሮ እና ሥነ ምግባራዊ (ኢኮሎጂካል) ንብረቶች ሲኾኑ፣ በኹለተኛ ደረጃ ጥናቱ ተጓዳኝ ንብረቶችን ዋጋ ለመስጠት በጣም ተገቢ የኾኑትን የግምገማ ዘዴዎችን ለይቷል። በመጨረሻም፣ በቀጣይ በቤተ ክርስቲያኒቱ የንብረት ምዘና ጥናት ለማካሄድ መሰናክል ኾነው ሊቀርቡ የሚችሉ ኹኔታዎችን በቅድመ ማስጠንቀቂያነት በመለየት አቅርቧል።

Key words: asset, EOTC, economic valuation methodology, monetized values of assets

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1. Introduction

It is no exaggeration to say that the Ethiopian Orthodox Tewahedo Church (EOTC) as an institution owns a vast set of assets that has remained untapped. This is related to the fact that the EOTC is one of the oldest churches in the world (Mehretu et. al. n.d.), intertwined with the country's culture and history (Engedayehu, 2013). Indeed, the EOTC is not only one of the oldest churches in the world but also it is renowned for its tangible and intangible resources which have been preserved for centuries under the wisdom and intelligence of Church's fathers (Addisu, 2014). The church is also credited with safeguarding a significant share of the country's movable and immovable cultural heritage (Elene & Getu, 2012).

However, asset management in the EOTC is fraught with challenges. To mention a few, the iconic Lalibela, complex of 11 rock-hewn EOTC buildings, and many other rural churches are exposed and vulnerable to extreme weather events such as flooding, rainfall and landslides and overall climate change (Delmonaco et al., 2009). Other threats include lack of well-studied and planned maintenance and preservation systems to assets, exposure to looting (Singh, 2018) as well as fire hazards (Mahibere Kidusan, 2002).

One way of ensuring the survival, preservation, and sustained use of the EOTC's assets would be having clear and systematic identification and valuation of these assets. Among the many opportunities, a few include the potential values resting with the embodied physical, intellectual, cultural, physical and mental well-being related as well as natural and ecological features directly associated with the EOTC's assets. One step towards overcoming such a stumbling block would be proper accounting and valuing assets associated with its asset, to which this study could contribute to in some ways.

Our main research question was, how can the different assets of the EOTC be valued using techniques from alternative valuation methods? This paper presents answers to these research questions using an integrated review of the literature from two sources: literature on assets of the EOTC and literature on an array of methodologies that are used to valuing assets similar to those belonging to the EOTC. The approach specifically attempts to answer these important questions by exploring how non-market valuation

techniques—used extensively in environmental economics – can be applied to the EOTC’s assets.

The essence of this exercise is three fold. First, it would avail state-of-the art methodology for researchers interested in quantifying the values of the different components of EOTC’s assets. Second, it would guide practitioners in sorting, registering, certifying assets that are understood to belong to the EOTC but are not legally certified otherwise. Further, valuation would also encourage investing in property rights for proprietors of the assets. Third, monetizing the benefits will create awareness about resources that people take for granted¹. Unless we become aware of the values of these assets, then the right incentives will not be in place to use, preserve, and restore these particular assets.

While this exercise is imperative, valuation of resources and assets associated with an institution like the EOTC cannot be a trivial task. For one, the assets are diverse, and valuation of each of the different categories requires a different valuation methodology which in turn calls for a deeper understanding of the nature of the resources as well as expertise in valuation methodology. As such, the objective of this paper is to identify best approaches to estimating the values of the different assets, without actually taking into consideration patents, trademarks, designs and end user rights.

2. What is (not) to be valued in EOTC’s assets-avoiding pitfalls

As a spiritual institution, a legitimate question that could spring to one’s mind is whether attempting to attach monetary value attributes that spring from spirituality is even appropriate. This short section is, thus, meant to clarify how our approach addresses this issue. First of all, the paper thoroughly acknowledges spiritual attributes cannot be monetarily valued in any shape or form.

Hence, the focus of this study is only on the materialistic benefits of the assets², which are only by-products of the EOTC with spirituality at its core. As a religious institution, material assets—be tangible, and intangible come only secondary to its spiritual services.

¹ For instance, assets of the EOTC might be sold off on very cheap prices, be destroyed or damaged whilst many think they are not in the process of disappearing.

² An asset is a resource owned by an entity that provides economic value or can be expected to generate revenue currently or in the future. While a large portion of the EOTC’s assets can be considered as heritages, the wealth of the EOTC in the context of the paper here dwells on the concept of assets.

Albeit being by-products, being a self-financing endogenous institution, its assets are essential components of its functioning. Hence by valuing its asset, we only value the worth of its by-products as an institution just like any other, and not its contribution to spiritual wellbeing³.

For clarification purposes we mainly focus on assets that safely fall under the valuation exercises. We identify those as ones that are sold in ordinary markets and are openly under use outside of the EOTC's spiritual purposes. Examples here include the EOTC's musical instruments and dresses worn by the different ranks in the EOTC's services. We also focus on assets that derive their very values from EOTC's teachings and rituals but are either identify their use values as largely materialistic. These could be, for instance, the use of the Churches' forests (for sanctuary and medicinal purposes as well as homes to diverse tree species) and for physical and mental healing. It could also encompass the utilization of the EOTC's intellectual assets for education, design and creativity inspiration, and travel pursuits. By doing so, what we steer clear from is any attempt to value any attribute that serves the purpose of spirituality and divinity.

3. The need for valuation of EOTC's assets

Valuation of assets belonging to an institution carries the aim of deriving estimates of their monetary values from a societal point of view (Bakhshi et al., 2015). Along the lines of these broader aims, this section is devoted to providing justification for the need for valuing EOTC's assets in the context of the distinguishing features, challenges, and virtues of the EOTC as an institution.

3.1. Lack of patenting and proprietorship leading to theft or inappropriate utilization of EOTC's assets

The EOTC's assets have long been subjects of direct and indirect theft. In this context, direct theft includes physically transferring the assets to an 'owner', without the EOTC's knowledge and blessings. Ethiopian cultural properties, specifically the tangible and movable ones, are exposed to illicit trafficking. Despite the presence of vast heritages in the country a considerable number of them are now found out of the country in museums

³ It should be noted that it may be difficult to really separate the materialistic benefits from the spiritual benefits in many instances. However, as we detail in many of the discussions utmost care is done to make the crucial distinction.

of Europe and America and in the hands of individuals (Hewan, 2016).⁴ Indirect theft in this context includes the inability of the EOTC to control or share proceeds from benefit derived from its assets. Such theft is also meant to include appropriation and use of the assets by those who have no right or authority to use them. The EOTC's assets also suffer from inappropriate use whereby they are utilized for, outside of the purpose they are intended to as per the ETOCs guidelines.

Even for well-meaning EOTC constituents, much of its assets (what is inside of it, what the purpose of it and what its current use is) remain unknown and underappreciated by those who reside in its vicinity. While much could be said for this, at least on the part of the Church and its scholar, lack of documented awareness creation and media broadcast could be cited as some of the culprits for the state of knowledge of the assets (Gerima, 2007).

Given this, robust valuation of EOTC's assets will contribute towards setting specific financial claims in the face of such thefts. In line with this, Bakeshi et al. (2016) argue that valuation allows cultural institutions to demonstrate in quantitative terms the value that they create for society in a manner that is consistent with best practice. In this context, the essence of assessing these values is associated with generating the current and potential future market value created through legislated protection measures including patent law, trade mark law, design legislation and the like (Blackwell et al., 2019).

3.2. The extensive need for finances to restore, preserve and expand EOTCs assets

Religious and cultural institutions commonly find themselves under financial pressure. Therefore, understanding the efficacy of alternative funding strategies is a key component of the management and policy decisions regarding these public goods (Alpizar et al., 2014). For EOTC, the financial pressure is evident in restoration, maintenance, running and expanding its physical, intellectual and cultural assets. For instance, restoration associated with Lalibela's Rock-Hewn Churches is estimated to cost upwards of \$20

⁴ Recently, a Yemeni national posted on twitter a copy of birana books and with Amharic and Ge'ez scripts, claiming that he inherited it from his family <https://www.facebook.com/-tadeletibebut/photos/pcb.914905288904899/914904862238275/?type=3&theater>

million (Yirga, 2018). Similarly, Addisu (2014) estimated the annual value of the Lalibela site to be more than ETB 800 million. This indicates the need for appropriate valuation of the EOTC's total assets such that the proceeds from the revenues generated could be used for their restoration, preservation, and expansion.

3.3. The problem of free riding with regards to the use of EOTC's assets

Much of EOTC's assets, particularly in the field of tourism, generate a lot of income for the various actors involved in the sector (e.g. tour agents, hotels, translators, governments, etc). However, the EOTC is not receiving its share in a satisfactory manner. While this is different from the theft issue discussed in section 2.1., it is a classic problem with the so-called public goods, where there is the propensity for resource users to free-ride.⁵ In addition, reproduction of EOTC's assets-based crafts, designs, and other intangible assets materials for commercial purposes remains free, with no mechanism designed for recapturing the benefits derived thereof by the EOTC. Therefore, in order to claim the benefits generated from its assets, the EOTC needs to put values into its assets.

3.4. Appropriate and efficient utilization of voluntary contributions

Despite, as discussed above, the assets being susceptible to free-riding, the EOTC massively draws from voluntary contributions from its followers as its source of income. Scientifically too, both introspection and empirical literature show that many people voluntarily contribute to public goods and tend not free-ride (Alpizar et al., 2014), although there are instances, as discussed in section 2.3. that quite a few tend to do so. Allocation of these funds into their most efficient use would be aided by information on the values of the different assets, their income generating potentials, and costs associated with utilizing and maintaining the assets.

⁵ There may be a second category of external effects resulting from the existence of cultural asset. These benefits are "public" in the sense that they can be realised in a nonrivalrous way, i.e. the benefits experienced by one individual do not diminish the benefits that can be experienced by other individuals. Additionally, there may be nonexcludability, leading to free riding, as in the case of the development of national identity and prestige. These benefits arise mainly from the fact that tangible objects of the cultural asset are a necessary precondition for the existence of the intangible part of the cultural asset. In a sense, they may be regarded as the crystallisation point for norms and ideas that are rooted in a common cultural tradition. (Koboldt, 1995).

3.5. Making EOTC's assets eligible for high-quality insurance

One of the prerequisites for insuring the EOTC's assets against the risks of loss, damage and theft is to have tangible values attached to them. Given that there is a history of the assets susceptible to all these risks (see sections 2.2., 2.3 and 2.4 above), safeguarding the assets into their sustainable use and existence requires proper valuation.

4. Assets of the EOTC⁶

As discussed in Sections 1 and 2, the EOTC's assets are rich and diverse enough to warrant systematic research on their preservation, restoration and appropriate utilization. Indeed, the aim of this section is not to provide a comprehensive review of these assets nor would this paper do justice to providing their appropriate categorization. As the main goal of this paper is to identify the main environmental valuation techniques that can be employed to value EOTC assets based on review of available literature, our inclusion and categorization of the assets is guided by their valuation criteria.

4.1. Physical assets

In the physical assets category, we look into assets that are tangible; and that, in principle, can be traded in ordinary goods markets. Accordingly, the physical buildings (churches, monasteries, museums), physical literary assets (books, manuscripts, scrolls), church musical instruments, and arts and artifacts are included in this category.

In terms of physical buildings, Stitz (1975) compiled total of 12327 churches are to be found in Ethiopia, which he argued to be an understated figure considering numerous undocumented churches across the country. While this is the earliest most comprehensive documentation, a more recent study identifies a total of 35000 churches and monasteries- an indication that they continue to be built over the years (Gebrehiwot, 2012).

EOTC is also home to a large body of books, manuscripts and scrolls. In the early 1980s, the number of EOTC's manuscripts in Ethiopia was estimated at around 200,000 (Sergew 1981). Addis Herald (2022) puts more recent estimates of manuscripts housed in

⁶ It should be noted that the aim of identifying and categorizing the assets is not showcase their quantity and types in full but to relate to how the different assets can be matched with the different valuation methodologies.

churches and monasteries at 500,000. Fascinatingly, most of the earlier books and scrolls are parchment-based. According to Ethiopian Authority for Research and Conservation of Cultural Asset, it has prepared catalogue for *bīrana* books and indicated that there are more than 10,000 *bīrana* books registered in the authority database (Hewan, 2016). In Ethiopia, large collections are found in two institutions in Addis Ababa: the Institute of Ethiopian Studies and the National Archives and Library of Ethiopia (ca. 1500 and ca. 835 manuscripts, resp.; the collections are still largely uncatalogued). The number of known Ethiopian manuscripts greatly increased in the late 1970s-80s, thanks to the successful microfilming project of the Hill Monastic Manuscript Library (now Hill Museum and Manuscript Library, St. John's University, Collegeville, Minnesota, USA), directed in Ethiopia by Dr. Sergew Hable Selassie (EMML: Ethiopian Manuscript Microfilm Library). More than 9,000 manuscripts were photographed, 5,000 of which were described in the 10-volume catalogue prepared by Dr. Getachew Haile (Nosnitsin, 2012).

Literature related to the EOTC is revered so much that Ethiopian manuscripts are known to have reached Europe as early as the 15th century, or even earlier, via Egypt, through Ethiopian pilgrims to the Holy Land (Israel) and through members of the Ethiopian monastery Santo Stefano dei Mori in Rome. In later times, adventurers and travelers, missionaries, and military officers, as well as scholars contributed to the emergence of extensive collections which provided material for numerous studies. Today, in Europe alone, only the three biggest collections of Ethiopian manuscripts (Rome, Biblioteca Apostolica Vaticana; Paris, Bibliothèque Nationale de France; London, British Library) together include ca. 2,700 manuscripts. Oriental collections of nearly all significant European libraries include also Ethiopian fonds, some of them still getting new acquisitions (see for example, Nosnitsin, 2012).

Musical instruments is another form of physical assets in the EOTC. These include *māsānqo* (The Ethiopian Single String Violin), *mälākāt* (The Trumpet), *bägäna* (The Ethiopian Harp), *imbilta* (A pipe-like, wind instrument), *wašint* (The Flute), *qäšāmara*, *maharam* (The Handkerchief) (Girmaw, 2020). The EOTC has also a rich collection of arts and artifacts.

4.2. Intellectual assets

The EOTC has one of the most pivotal roles in the intellectual life of the Ethiopian society, particularly before the onset of modern, western education system in Ethiopia. For instance, the ancient classical language of Christians in Ethiopia, Ge'ez, has massive contributions to the development of literature, as it has remained the literary language of the church and beyond, contributing to the Bible, theological and church literature, history, and other works (philological philosophical) until the 19th century (Chailliot, 2002). The development of mainstream secular, academic and other literature arguably count the Ge'ez literature as their basis including the Ge'ez alphabet (Woldegaber & Portella, 2013). Indeed, one of the most significant intellectual asset of EOTC is its contribution to the literary culture-contribution to the development of modern literature. Ethiopia's exceptional status in Sub-Saharan Africa as having its own written tradition in Ge'ez and the quantity and quality of the works is largely intertwined with the Ethiopian Christian literature (Nosnitsin, 2012; Lee, 2011).

The EOTC is a pioneer for various educational services in Ethiopia (Tamerat, 2018) and has been complementary to modern education in filling the gaps that cannot be covered by modern education (Atale, 2018). Indeed, for centuries the church education has been the only source of education in Ethiopia (Chailliot, 2002). Equally significant is EOTC's contribution to the musical culture (Girmaw, 2020; Atale, 2018). Church music in the Ethiopian tradition is said to go back to St Yared in the 6th Century with variations added up until the contemporary times (Chailliot, 2002). One such intellectual asset is associated with the contribution to architecture and architectural amenities. The artistic culture of the EOTC is the fourth intellectual contribution (Chailliot, 2009; Ullendroff, 1981).

4.3. Cultural assets

The EOTC holds significant place in the cultural life of many Ethiopians. In this arena, EOTC has considerable contributions to dress codes, ornamental culture and dietary culture. At par with these tangible cultural contributions is the intangible cultural assets such as individual milestone celebrations, holidays and festivals. These include baptism, wedding and burial (Stitz, 1975).

Beyond these, holidays and festivals are crucial aspects of cultural life for Ethiopians. In the era of facilities, provided by mass-media, traditional touristic products remained attractive for a diminished group of consumers, especially for conservative persons. Vacations and on-site visits are increasingly motivated by the interactive character and less on general information, easy accessibility through media (Papathanasiou-Zuhrt & Weiss-Ibáñez, 2015).

4.4. Natural assets: forest and biodiversity of the EOTC

Over the past century, nearly all of Ethiopia's native forests have been cleared to as a way of converting land use towards farming and grazing. Many of the church forests, though, remain, protected by their religious stewards and the communities around them. They are tiny fragments of a lost past, and the center of hope for conservation and future restoration (Borunda, 2019). The resilience of forests in the EOTC is associated with the belief that they provide “respectful covering” for the churches at their centers and the riches they hold.

Given that some of them are estimated to be 1,500 years old—tiny, ancient islands of historic habitat in a changed landscape, they are arguably the biggest sources of forest biodiversity in the country (Borunda, 2019 ; Eshete, 2007). In terms of composition, the thousands of Ethiopian Orthodox church forests scattered across Ethiopia's Northern Highlands represent ecologically and institutionally diverse libraries of biodiversity, whose full ecological and institutional values have only begun to be appreciated. For example, there are over 8,000 church forests in the Amhara Regional State of Northern Ethiopia (Reynolds et al., 2015) Church forests can be found at virtually every latitude, longitude and elevation, and in every agroecology in the region (Reynolds et al., 2015).

4.5. Contribution to physical and mental wellbeing

The EOTC has been a sanctuary to those who suffer from physical sickness, mental disorders, marital problems and family conflicts, poverty and economic problems, behavioral and conduct disorders and evil spirit possession (Tamerat, 2018). The EOTC has been providing many types of spiritual services to its followers for centuries, by providing prayer, holy water baptism, holy unction, biblical counseling and other spiritual treatments. For example, if we see the holy water baptism service, the Church

has organized, and sanctified tens of thousands of holy sites and assigned clergies in order to serve the people (Tamerat, 2018).

Research conducted in related areas suggest that the EOTC's contribution to the psychological and social wellbeing of its followers has been significant to say the least. For instance, Kidanekal (2016) in his research has found out that there is a statistically significant association between sacraments of repentance in the EOTC sustainability of Christian marriage which suggests as to the positive impacts of the Church in families. Berhane (2015) in his study on some selected Churches of Addis Ababa Diocese underlined the positive impact made by the Church and priests' vital contribution to solve marital problems.

Another area of EOTC's contribution is related to the use of holy waters. Asher et al. (202') documented the use of holy water in Ethiopia to treat people with mental disorders. Otherwise, there is a scarcity of literature on the issue. Zena (2006, 2007) focus on the holy water sites and document the experience of PLWHAs at Ethiopian sites where holy water is used as an alternative or complementary treatment to the ART. In fact, a significant number of AIDS patients in Ethiopia move to holy water locations in quest of spiritual support (Zena, 2010).

In addition to strictly spiritual services, medicinal knowledge associated with the EOTC has indigenous knowledge element and therefore has a very different set of economic characteristics compared with standard intellectual property, particularly where it is created from community traditional knowledge or cultural expressions. According to the World Intellectual Property Organization (WIPO, 2018a, b), Western IP systems historically view traditional knowledge and cultural expressions as being in the public domain, free for anyone to use and thus subject to unwanted misappropriation and misuse.

A portion of these assets falls under the category of Cultural Ecosystem Services (CES), which are generally described as the "nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences" (Millennium Ecosystem Assessment, 2005). CES are among the most highly recognized and directly perceived by people, and they may have the most direct links with well being (Daniel et al., 2012; Plieninger et al., 2013).

5. Derived values from EOTC's assets and valuation theory

This section presents the concept of economic values as applied to EOTC's assets and the scientific underpinnings of valuation from the perspective of economic theory.

5.1. Definition of relevant economic values associated with EOTC's assets

The total economic value that is associated with the benefits derived from cultural institutions such as the EOTC can be divided between use value, non-use value and option value.

5.1.1. Use value

Use values include the direct use benefits to visitors of EOTC's churches, museums, and the surroundings. Such benefits are associated with visits for recreational, leisure, and entertainment activities, as well as education, inspiration, and knowledge (Bakhshi et al., 2015). In line with this, Valentina et al. (2015) argues that such 'cultural consumption' has the benefit of stimulating self-reflection, critical thinking, and time-space knowledge. Increasingly, there are also new trends in cultural asset consumption demand expressed by "active consumers", to enrich their knowledge and cognitive experience using new cultural products based on distant use benefits, generated by media, photographic or artistic representation of collections and assets as well as by digital engagement (Bakhshi et al., 2015; Valentina et al., 2015).

5.1.2. Non-use value: bequest and existence value

Non-use value represents additional benefits to use value that individuals do not directly benefit from, individually. Non-use values can come from simply knowing that others will benefit, either now, or in the future. Non-use value may also be derived from simply knowing that the cultural institution exists. For example, this may refer to a sense of pride associated with the existence of a renowned institution. This includes values attached to conservation and research work of an asset, or its community outreach work. Indirect use benefits could also arise in the form of enhanced community image, and social interaction (Bakhshi et al., 2015; Valentina et al. 2015; Dasgupta & Serageldin, 2000, Mourato & Mazzanti, 2002).

5.1.3. Option value

Option value refers to benefits from a potential future use of the institution and its services. A so-called option value can also be attached to potential future use of collections or of the services the cultural institution provides. Option values are typically attached to welfare increases associated with knowing that future generations will benefit. Existence values are associated with welfare enhancements from knowing that the cultural institution, its services and collections, exist even if an individual does not experience a use benefit now or in the future (Bakhshi et al., 2015).

5.2. Theoretical underpinnings of economic valuation and alternative valuation methodologies

The value of a good or service relates to the impact that it has on human welfare (Freeman, 2003). Hence, the economic value of a given asset is a measure of the change in human welfare, or utility, that results from it and can be expressed in terms of compensating or equivalent measures as first devised by Hicks (1934). Compensating surplus (CS) is the amount of money, to be paid or received, that will leave the agent in his initial welfare position following a change in the good. Equivalent surplus (ES) is the amount of money, to be paid or received, that will leave the agent in his subsequent welfare position in absence of a change in the good. In essence, CS and ES refer to the change in income that holds welfare constant in light of the change in the provision of the good. This will be positive for goods that are welfare-increasing and negative for goods that are welfare-decreasing. CS and ES were later linked to the economic concept of preferences, such that changes in welfare can be measured empirically⁷.

⁷ The preference satisfaction account of welfare states that “what would be best for someone is what would best fulfil his desires” (Parfit, 1984, p. 4) and rests on the so-called rationality assumptions. These assumptions allow us to map choices over a number of binary options on to a well-defined utility function which demonstrates that people behave as if they are maximizing some utility function. Through these rationality assumptions preference satisfaction and welfare become synonymous with each other (Bakhshi et al., 2015).

Traditional economic theory holds that utility is not observable, but measures of welfare change and monetary value can in theory be elicited from the expenditure function⁸.

The expenditure function enables computing the compensating surplus as the difference between the level of expenditure before and after the change in the non-market good i.e., the amount of money required to compensate the individual for the drop in the non-market good. CS and ES are often rephrased in terms of willingness to pay (WTP) or willingness to accept (WTA).

The theoretical construct discussed above provides the basis for the different empirical valuation methodologies that could be applied to the culture sector in general and the EOTC's assets in particular. The empirical approaches are broadly classified into two: revealed and stated preference methods. Revealed preference methods relevant to the cultural sector include the travel-cost method, the hedonic pricing method. Other revealed preference methods that are directly reliant on observed/proxy market prices include production function and asset-based/cost approaches. When proxy markets do not exist for the non-market good in question, the application of revealed preference methods discussed above becomes difficult. In these situations, economists have traditionally turned to direct elicitation of WTP and WTA through survey-based stated preference valuation methods.

6. Approaches to valuing the different EOTC's assets

As discussed in section 4, EOTC's assets are wide-ranging with synergetic, shared and complementary features, in many instances. Hence valuing a specific asset is likely to overlapping with an asset, embedding several economic values and some specific economic values derived from a combination of assets. The exercise below, therefore, recognizes the shortcomings of the classifications followed in this paper, while striving to be as comprehensive as possible. The discussion below presents possible values associated with the EOTC and their corresponding valuation approach.

⁸ Using the duality principle, the indirect utility function derived from the direct utility function can be represented through the expenditure function. The expenditure function circumvents the problem of un-observable utility as it allows calculation of the amount of money needed to give or take away from the individual to make him/her equally well-off after the policy or provision of the non-market good.

6.1. Valuing Physical Assets

Part of the value of assets associated with physical assets (church buildings, cathedrals, monasteries, and medieval cities) could be estimated using market-based valuation techniques which assess the sale value of the actual assets. The values of the EOTC musical (*zema*) instruments can also be derived from proxy/alternative markets for similar instruments. Similarly, arts and artifacts could also have their values derived in art collector, art auction markets for equivalent. However, not all (aspects of) physical assets have use values that can be captured by the sale values in proxy markets. For instance, books and manuscripts have largely non-use values. The values of these features can be captured by employing stated preference valuation techniques such as CVM or CE that measure the (locals or international visitors/collectors) willingness to pay to enjoy these assets.

Table 1: Examples of values associated with physical assets and the associated valuation techniques

Item valued	Approach	Value	Study site/Reference
Historic building	Visitor contribution: The British Natural History Museum	The £17.72 per visitor (per visit and annual contribution)	United Kingdom. Bakhshi et al., 2015
Restoration of the Arab tower	Contingent valuation method	395,642 Euros to 443,089 Euros	Salaza & Marques (2005).
Rare/antique book (Ulysses)	Auction method	410,000 USD	Heinrich (2020)
Australian Aboriginal Art	Auction method	A\$440,000	Johnson, 2001
Musical manuscript (Mozart's Symphony)	Auction method	\$150,000	
Antique violin	Market price	1-5000 ncs	

6.2 Valuing intellectual assets associated with the EOTC

The essence of valuing intangible assets such as brands, intellectual property and licenses now comprise a greater percentage of the economic value of successful businesses than ever before. Some economists argue that they represent the main performance drivers in the current transition from a traditional financial economic structure to a new knowledge-based economy (Bakhshi et al, 2015). One way of measuring the value of

Intellectual Property (IP) is through surveying the producers for how much they are willing to pay for equivalent creative products (books, articles, plays, music notes, poems). Complementary ways of valuation could also involve surveying consumers to gain their willingness to pay (or demand) for the IP used in creating specific goods and services across a selection of sectors.

The most common sources of IP associated with the EOTC are those linked to writing and scripture. Spiritual musical production could also be argued to be an additional source of IP. Another source of IP are architectural features embedded in the EOTC's assets. They are sources of pride for Ethiopians that do not live in the vicinity of them or do not even visit them. By probing such individuals about their WTP for the existence or visitor value of such assets, non-market valuation could be employed as a technique. Architectural features of the EOTC also serve as inspirations for architectural designs in non-spiritual settings. Values associated such features could be derived using information on the market value of producing equivalent architectural design and revealed preference valuation techniques.

Table 2: Examples of values associated with intellectual assets and the associated valuation technique

Item valued	Approach	Value	Study site/Reference
Music composition	Direct costing approach: Broadway single show composition fee	\$5,000-12,000 per show	USA. Nigeria, glass-dor advertising
Blockbuster art exhibitions	Travel cost method:	28-93 Euros per visit	Vicente & de Frutos, 2011

6.3 Valuation of celebrations, festivals and holidays associated with the EOTC

In the context of the paper, the values associated with the cultural assets of the EOTC are derived from celebrations, festivals, holidays, and accompanying goods and services. The public holidays associated with the EOTC such as *Mäsqāl* (the findings of the True Cross) and *T'imqet* (*Epiphany*), *Gännä* (*Christmas*) in *Lalibäla* attract international visitors. As well, a lot of national festival goers attend such holiday celebrations as

well others of large significance for Ethiopians mainly such as celebrations of *Axum S'iyon*, *Gışen Mariyam*, *Qulibi Gäbr'el*, and *Midra-Käbd Abo*, among others. Hence, the valuation exercise could involve measurement of visitor value for such festivals. Visitor use value provides an estimate of direct use value from the perspective of the current visitors to the holiday event. This could be elicited as an entry fee in the case of the international visitors, and as a donation in the case of the national visitors, vice versa, or a combination of the two.

Table 3: Examples of values associated with cultural goods and the associated valuation techniques

Item valued	Approach	Value	Study site/Reference
Cultural festival	Travel cost method: peace and love festival	SEK. 36.5 million	Galis, 2014; Sweden
Cultural festival	Contingent valuation method	\$43-50 per person	Báez & Herrero, 2012; Spain

6.4 Valuation of tangible cultural goods/artifacts derived from the EOTC

Several cultural goods such as dresses, ornaments, household utensils and decorations with either draw inspirations from or borrow their designs from the EOTC or have some EOTC's features on them. Their value added from such perspective could be considered as a contribution of the EOTC. For instance, ornamental crosses, while made by goldsmiths, have the EOTC as the owner of their design. The value of the design, therefore, forms one component of the (sale) value of the cross. The value of such contributions would be associated with revealed preference methods, whereby the design values will be estimated based on a survey of similar market values of designs. Table 4 presents an example of valuation of a cultural dress design where the payment for the design is taken as the cultural value of the design.

Table 4: Examples of values associated with cultural goods and the associated valuation techniques

Item valued	Approach	Value	Study site/Reference
Cultural dress design	Direct costing approach: designer salaries for Indian and African cultural dresses	₹57,744/month (India); ₦2034.73 (Nigeria)	India. Nigeria, Glass-dor advertising
Heritage based architectural amenities	Hedonic pricing approach	HK\$302.3/ft ² -HK\$1672.7/ft ²	Fung & Lee, 2014

6.5 Valuing physical and mental well-being associated with the EOTC

In the context of the EOTC, contribution to physical and mental wellbeing of individuals includes medicinal knowledge and provision of counselling and holy-water. The value associated with the types of healing approaches could be derived from the costs of accessing equivalent treatment/therapy from conventional (mainstream) as well as alternative (non-mainstream) medicine or health services.

Table 5: Examples of values associated with physical and mental wellbeing and associated valuation techniques

Item valued	Approach	Value	Study site/Reference
Complementary and alternative medicine	Direct and indirect costing approach: manual therapy including hours of help from family and friends, and hours of absenteeism from work or other activities	\$402/person	Herman et al. (2005), USA ,
A spiritual site	Travel cost methods	NRs.784.37/hour	Sharma et al., 2019; Nepal

6.6 Valuing forest benefits of the EOTC

The benefits associated with EOTC's forests include its services as a sanctuary of forest trees, plants and biodiversity. Biodiversity related benefits in EOTC's forest resources can be valued using both stated and revealed preferences. For instance, the direct productive value of forest biodiversity can be valued using production function approach. Whereas,

biodiversity benefits related to option value (e.g. future medical values) as well as existence values (the satisfaction derived from knowing that indigenous forest trees are preserved) could be valued using stated preference methods. As an example to valuing the benefits from forest, Alpizar et al. (2015) conducted a stated preference study to explore visitors' preferences for donating money to raise funds for a protected area given different entrance fee levels. Specifically, they conducted a choice experiment-based willingness to pay exploring visitors' donation preferences given different entrance fee levels in Cahuita National Park in Costa Rica. Additional example includes the choice experiment approach employed in forest biodiversity conservation where individual forest owners identified the amount they are willing to accept to carryout biodiversity conservation project in their own forest land. Table 6 presents the valuation technique employed for this purpose.

Table 6: Examples of valuation techniques and values of Natural and ecological assets

Item valued	Approach	Value	Study site/ Reference
Forest biodiversity conservation	Choice Experiment: biodiversity conservation contracts among private forest owners, and the amount of compensation needed to keep the forest owners at least as well off as before the contract	224 Euros/ha	Finland, Horne (2004)
Natural forest park	Travel cost method	12,500 Iranian Rials per visit	Limaie et al., 2014; Iran

6.7 Valuing EOTC's asset that carries a combination of attributes

While many assets carry singular attributes that can be valued independently, it is also often the case that some feature many attributes simultaneously, requiring valuing them as a whole. The best example in this case is the Rock-Hewn Churches of Lalibela, a site famed for its architectural, literacy, musical, design, etc. assets in almost all rounded way.

in line with this (Smith, 2003) provides a vital framework for analyzing cultural tourism in its complexity and its increasing globalization.

At the interface between the global and the local, a sustainable and people-centered approach to cultural tourism planning and development is advocated to ensure that benefits are maximized for local areas, a sense of place and identity are retained, and the tourist experience is enhanced to the full.

Table 7:

Item valued	Approach	Value	Study site/Reference
The rock hewn churches of Lalibela heritage site	Travel cost method; contingent valuation method	800 million birr	Addisu, 2014; Ethiopia
The Italian Heritage City of Noto	Contingent valuation method	300 million lire	Signorello & Cuccia (2002), Italy

Conclusions and recommendations

The EOTC's assets, while admittedly rich, diverse, and a source of pride for many, is in dire need of preservation, restoration and sustainable use of continued utilization. However, the fragmented/non-existent nature of accounting, documenting, patenting, trademarking of EOTCs assets poses a significant challenge to promoting organized means of tapping into the assets to generate funds. With this background, the paper carries the aim of identifying key EOTC's assets and corresponding methods of valuation that are embedded in economic theory.

The objective of this work has not been to present an exhaustive list of assets (physical and non-physical) belonging to the EOTC, but to highlight the different kinds, and indeed suggest scientific methods of valuing its assets. In that respect, this paper serves as a spring board for future scientific valuation studies that look into attaching concrete values into the different assets.

The outcomes of this study has been three. First, the paper has categorized the assets of the EOTC (focusing on those that are amenable to valuation), into five: physical assets, intellectual assets, cultural assets, contribution to festivals and holidays, and contribution to physical and mental well-being. Second, the paper

has identified tools that are suitable for valuing the assets placed in the different categories. Third, the stumbling blocks to conducting the actual valuation tasks are identified. Addressing these constraints will be paramount to conducting effective valuation exercises in the future.

This study has explored what are the most commonly used valuation methods that have similar features as assets belonging to the EOTC. The methods can be divided into revealed and stated preference approaches. Revealed preference methods relevant to the EOTC include the travel-cost method, the hedonic pricing method, and the production function approach. Stated preference methods are appropriate when proxy markets do not exist for EOTC's assets and direct elicitation of WTP and WTA are relied on. They include contingent valuation, choice experiment, and well-being valuation methods. The paper also presented examples of quantified values of assets that have similarities to the ones examined in this paper, as a way of giving a peek in to what actual valuation of EOTC's assets can deliver.

Research on economic valuation of assets of institutions like the EOTC suffers from paucity a given the diversity and complexity of the items to be valued. While the exercise in this paper could be seen as an effort to contribute to closing such gaps in the literature, it is expected to suffer from a series of shortcomings. The first is multiplicity, duplicity and complexity of the valuation exercise. The value of assets belonging to religious institutions such as the EOTC could be different to those who use it and those that do not, as well as by different groups in society. As much as possible our approach attempts to capture the value of the assets of the EOTC from a non-spiritual perspective. As described in the introductory section, the paper strictly focuses on the materialistic/non-spiritual benefits, steering clear of discussing its spiritual functions. While the main reason for this is the unmeasurable value attached to spiritual benefits, it is inevitable that some of the assets whose values we capture could also include such benefits. Additional caveat is the different dimensions many assets could assume and the corresponding wide-ranging ways of measuring it. Given this, it is imperative that eliciting values for a particular asset would require framing the methodology such that the methods could be used to measure the benefits that people place on visiting these sites, using their services, and conserving them (Navrud & Ready, 2002). Further, some non-market valuation techniques tend to fall short of accurately capturing the cultural value of the assets (Throsby, 2003).

The second caveat is related to the comprehensive listing of assets. While attempt has been made to list and categorize the different assets of the EOTC identifying diverse set of valuation techniques that match the assets may not be complete in this exercise. That is because comprehensive valuation requires extensive identification, characterization, and categorization of the EOTC's assets is yet to be accomplished. Such task involves undertaking a comprehensive literature review on assets with a focus on research or promotion contributing to the understanding of the current and potential value of the assets.

The third constraint is related to patenting and proprietorship. It should be noted that valuation, with a view to attributing market value to the assets, would be a prerequisite for the protection and proper utilization of the EOTC's asset, given that it is supported by the legal instruments that establish its proprietorship of the assets. These instruments could be enforceable instruments or voluntary protocols, standards and guides. Enforceable instruments have a clear connection to market value, typically being tradable with a cost incurred to protect their attributable asset. Whereas, legal costs, patent prices and license fees are tend to be private. No enforceable rights such as protocols, codes of conduct and certification may involve compensation or payments designed to protect the assets (Blackwell et al., 2019). A diverse range of instruments helps to provide choice to the EOTC and creates a system that may support the development of social and market norms that encourage the recognition and protection of EOTC's assets.

Finally, identifying appropriate methods for valuation corresponding to the different types assets of EOTC has been the key purpose of this paper. Completeness to this task, however, comes when these different values are quantified. Hence, a pivotal follow up activity to this work would be conducting valuation exercises for each type of assets. That is, as set out in the earlier sections of this paper, would require a considerable amount of resources-financial and human-and therefore requires planning and pulling together different resources.

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