

Sustainability practices in the turkish construction sector environmental science...

[Education](#), [Sustainability](#)



Abstract. The Turkish building services bunch is the thirteenth largest in the universe in footings of exports and has demonstrated really high growing of 63 % in international projects. Katsarakis et Al (2007) split this bunch into two parts and call them as the lower-quality domestic-only set of houses and the higher choice international houses. On the domestic side, there are more than 30, 000 active local houses (TCA, 2009) . On the international houses ' side, there are over 140 houses, 23 of which are among the 225 largest building companies worldwide in footings of abroad activities per ENR 2008 listing. This degree of activity, peculiarly the international activity, places upon the Turkish building bunch a duty to guarantee good working conditions for all its employees and to play a polar function in continuing the environment, extenuating bing polluted countries, salvaging natural resources such as H₂O, energy and natural stuffs. This paper examines, through a literature survey, the current degree of sustainability apprehension in the Turkish building sector. The survey concludes that the degree of sustainability apprehension and hence its execution is unstructured, bit-by-bit, and inappropriate for the prima regional function that the Turkish building bunch will play. The paper concludes that a more holistic attack is required, which will necessitate political policy and larning from best pattern from other states and immensely increased instruction and preparation in the constructs of sustainability.

Keywords: Construction bunch, policy, scheme, Sustainability, Turkey

1. Introduction

Sustainability is more and more going a cardinal concern of every person. It is a concern that has grown out of a wider acknowledgment that lifting populations and economic development are endangering a progressive debasement of the Earth 's resources per CIOB (2009) . The building, care and usage of edifices have significant impact on our environment and are presently lending significantly to irreversible alterations in the universe 's climate, atmosphere and ecosystem.

Endeavoring for sustainability is a uninterrupted procedure of alteration. The building industry is confronting ever-increasing demands to better its sustainability public presentation. Sustainable development applies at the political and macro economic degree to communities. The clients and stakeholders of the building industry demand betterments of its patterns and its public image. Karacay (2003) stated that the epoch of `` more production-more ingestion '' is over and a great trade of accent should be to sustainability for uninterrupted sustainable economical growing and development.

Sustainable building is a manner for the building industry to travel towards accomplishing sustainable development, taking into history environmental, socio-economic and cultural issues. Specifically, it involves issues such as design and direction of edifices, stuffs and edifice public presentation, energy and resource ingestion - within the larger orbit of urban development and direction.

In this paper, sustainability of the substructure undertakings will be concentrated on. Recent publications related to sustainable building in the context of Private Finance Initiative (PFI) route undertakings (AkbA±yA±klA± & A ; Eaton, (2009a and B)) and sustainable substructure developments in the instance of Public-Private Partnership (PPP) (Eaton & A ; AkbA±yA±klA± , (2008)) are available.

2. Sustainability

Sustainability, as stated by Werbach (2009) , is more than `` green " ; it is concern agencies, above all, guaranting that the concern thrives in the long term and takes into history every dimension of the concern environment. Sustainability is the concern with long-run profitableness. Sustainability needs a scheme behind that includes all the supply concatenation, top direction engagement and support ; and it relates all the concern organisation. We are in an epoch that the Nature and the equilibrium in the Nature that will govern and regulate the developments in our industry. We will be concerned more than of all time in the value adding in the building concern that will be a combination between sustainability (societal, economic, environmental and cultural) , efficiency and effectivity. In Werbach 's (2009) words, `` Until the 1980 's concern leaders used the word sustainability to intend a company 's ability to increase its net incomes steadily (Werbach, 2009) .

Sustainability represents the besttechnologyattack of all - the acknowledgment that no undertaking exists in a vacuity, but in a societal

and natural context that affects the undertaking and is affected by it in bend. If we take this holistic position of technology, which involves esteeming the natural and human environment in the design, building and operation of our undertakings, we find distinguishable benefits in footings of quality, proficient inventions, and long-run societal, economic and environmental returns (Tanal (2004)) . Harmonizing to Werbach (2009) , a sustainable concern means a concern that can boom in the long term.

Brundtland Report (1987) , besides known as Our Common Future, alerted the universe to the urgency of doing advancement toward economic development that could be sustained without consuming natural resources or harming the environment. The study was published by an international group of politicians, civil retainers and experts on the environment and development, and provided a cardinal statement on sustainable development specifying it as `` development that meets the demands of the present without compromising the ability of future coevalss to run into their ain demands " . The study besides suggested that equity, growing and environmental care are at the same time possible and that each state is capable of accomplishing its full economic potency whilst at the same clip heightening its resource base.

Furthermore, in the same survey it is reported that accomplishing the equity and sustainable growing would necessitate technological and societal alteration. In stead to this fact, Sage (1998) stated that sustainability necessitates the development of enlightened establishments and substructure and appropriate direction of hazards, uncertainnesss, and

knowledge imperfectness to guarantee intergenerational equity, intergenerational equity, and preservation of the ability of Earth 's natural systems to function world.

As defined by Chaharbaghi & A ; Willis (1999) and presented in a study on sustainability by FIEC (2005) , sustainable development is a construct based on a construction which stands on 3 pillars, viz. economic, societal and environmental. This inter-related model is shown in Figure 1.

Fig. 1. Three pillars of sustainability (Chaharbaghi & A ; Willis (1999) in `` Managing Knowledge in the Context of Sustainable Construction '' ITcon Vol. 11 (2006))

3. The building industry and sustainability

Sustainable building can be defined as a building procedure which incorporates the basic subjects of sustainable development (Parkin (2000) , Chaharbaghi & A ; Willis (1999) , Sage (1998)) . Such building procedures would therefore convey environmental duty, societal consciousness, and economic profitableness aims to the bow in the reinforced environment and installations for the wider community (Langston & A ; Ding (2001) , Miyatake (1996) , Raynsford (2000)) .

Companies are the cardinal elements of modern economic life and they have an of import function in conveying about the alterations needed for sustainable development. Harmonizing to Wilson (2003) `` corporate sustainability is a concern attack that creates long term stockholder value by

encompassing chances and pull offing hazards deducing from economic, environmental and societal developments. While corporate sustainability recognizes that corporate growing and profitableness are of import ; it besides requires the corporation to prosecute social ends, specifically those associating to sustainable development such as environmental protection, societal justness and equity and economic development " . Werbach (2009) argues that, if imagined and implemented to the full, sustainability drives a bottom-line scheme to salvage costs, a top-line scheme to make a new consumer base, and a endowment scheme to acquire, maintain, and develop originative employees.

The three pillars or as named by Fiksel (2001) , the `` ternary underside line " , economic prosperity and chance societal equity and quality of life and ecological resource saving represents sustainability as an organisational committedness to accomplishing competitory advantage through the strategic acceptance and development of ecologically and socially supportive production procedures, merchandises and services and advanced human resource direction patterns. (Dunphy et al (2003)) .

For those organisations prosecuting sustainability, it is cardinal to their corporate schemes and a critical ingredient in how they assess their effectivity. A survey by Dunphy (2004) states that `` sustainability consequences from activities which extend the socially utile life of organisations,

heighten the planet 's ability to keep and regenerate the viability of the biosphere and protect all life species,

enhance society 's ability to keep itself and to work out its major jobs,

keep a nice degree of public assistance for present and future coevalss of humanity "

The building industry and the reinforced environment must be counted as two of the cardinal countries required to achieve a sustainable development in societies. It is a widely known fact that, the edifices are responsible for over 40 % of all the waste produced in the European Union.

In developing and passage economic systems, building has a immense part to the Gross National Product (GDP) ; but this has to be done in a more sustainable mode while bettering the quality of life and making wealth. However, sustainable building adopts different precedences in different states. There are widely different positions and readings between developed and passage and developing states. The developed economic systems are in a place to give more attending to making a more sustainable constructing stock by upgrading, by new developments or the usage of new advanced engineerings. All public procurance should be made consistent with authorities policies for presenting sustainable development, most notably in footings of waste minimisation, H2O efficiency, community regeneration and societal inclusion. In that sense, Private Finance Initiative (PFI) as an advanced procurance path can play a cardinal function within the industry due to the graduated table of investing involved ; the greater easiness of act

upon the little figure of historians involved ; and the manner in which PFI contracts secure the long-run battle of contractors. However, sustainability considerations are not sufficiently embedded in the PFI procedure to guarantee consistent bringing, and success is extremely reliant on the motive and expertness of single public sector clients and private contractors (Green Alliance (2004)) .

Sustainability within the building industry has no clearly settled definition and no settled organic structure of being pattern and procedures. The industry has to understand what sustainability is in its context and concentrate on creative activity, prolonging and airing of cognition for sustainable building across the multiple interest holders involved in building undertakings (Shelbourn et al. , 2006) . Many building companies in the UK follow the authorities 's aim for sustainable development which is economic growing and prosperity, effectual protection of the environment, careful usage of natural resources (natural resource protection and environmental sweetening) and societal advancement.

The UK authorities has produced enterprises to title-holder sustainability within the building industry to accomplish sustainable development marks. Recent research plans such as 'Partners in Innovation (Pil) ' (Shelbourn et al, (2006)) and others have been funded to back up sustainability within the building industry (Raynsford (2000)) . The 'Government Construction Clients Panel ' (dwelling of representatives with duty for procurance for most authorities organic structures) besides has a mark to accomplish sustainability in each undertaking. This enables the authorities to take a

prima function, and showcase good pattern in advancing sustainable building (DEFRA, (2004)) .

It is the writers ' contention that, every company in the building concern must hold a sustainability policy which will be developed and communicated within the organisation. Those policies can be Sustainability Policy, Environmental Policy, Healthand Safety Policy and Sustainable Procurement Policy. The policy and rules of sustainability creates a sustainable development which is supported by a sound sustainability scheme. The purpose of such schemes is to develop a common apprehension of the sustainability issues and present effectual and targeted attacks for each stakeholder to lend to accomplishing a more sustainable building industry. In order to recognize all these policies and scheme it is perfectly necessary to hold a Board and Advisory Committee within the organisation that supports and commits to sustainability as a scheme and acts as a nexus between office and operational activities at site degree. Having set these marks fitting with the Government 's sustainable development, building houses must put specific one-year marks for each concern unit and each building undertaking as a whole. After that each house must besides put for his undertakings and company a sustainability appraisal standard which is linked to marks and Key Performance Indicators (KPI 's) aligned with the concern scheme of the house. These are meant to be some sporadic thoughts from the writers to the building houses that are likely to follow in execution of Sustainability Policy and Strategy in their organisations.

The experiences from some taking UK building companies have shown that there are strong concern benefits for more sustainable building. As a successful instance `` Early Solutions Together - Eastern time '' programme of Morgan-Est (Part of Morgan Sindall) and `` Making Tomorrow a Better Topographic point '' programme of Carillion can be named as two good illustrations of sustainable thought and execution in the UK building industry (Morgan-Est, 2009 ; Carillion, 2009) . Carillion is winner of its category - Best Green Company in the UK for medium to big houses Awards in 2008 and Morgan-Est is the victor of Green Apple Award for Environmental Best Practice. This is besides demonstrated through research carried out by Sustainable Construction Task Group (BRE (2001)) , which concluded that there are clear advantages to be gained, but merely if sustainability is portion of a long-run concern program. This is reinforced by the Building Research Establishment, where research has concluded that `` a^|being sustainable is every bit much about efficient profit-orientated pattern and value formoneyas it is about assisting the environmenta^| '' (BRE Report (2002)) . Such consequences have given the building industry an improved consciousness of sustainability issues. In 1999, around 150 quality of life indexes were produced to better the wellbeing of UK citizens (Audit Commission (2002)) . The industry has begun to acknowledge that monitoring and coverage on sustainability is a critical portion of their concern. Cardinal Performance Indicators, Environmental Performance Indicators, and the acceptance of benchmarking have become progressively common topographic point, and many companies are now bring forthing

environmental and sustainability studies, with corporate societal duty going common pattern (Movement for Innovation, (2000) , CIRIA (2001, 2006) .

Sing building in developing states, Ofori (2007) states that, an organized action should be taken to guarantee that the high volume of building that will be undertaken in the development states in the procedure of urbanisation in the ways that are socially and ecologically impact of building. He stresses that this will necessitate a wide dialogue between authorities, building industry, academe and NGO 's at national and international degrees towards the development and execution programs for sustainable building.

4. Turkish building services bunch

Harmonizing to Katsarakis et Al (2007) , the building services bunch in Turkey is the thirteenth largest in footings of exports and has demonstrated a compound one-year growing rate (CAGR) of 63 % for the period of 2002 - 2006 in international projects. While the building services bunch represents merely the 6 % of Turkey 's gross domestic merchandise (GDP) , together with all complementary and related industries, it still accounts for 30 % of GDP harmonizing to the TCA (2009) records. Construction plays a important function in Turkey 's economic system using about 1. 4 million people which is about 5. 5 % of Turkey 's entire employment.

Turkish building sector is chiefly composed of Small and Medium Enterprises. This composing is really similar to the European building sector. The building sector is chiefly a domestic sector and merely 4 % is international building.

The European building industry excessively is composed of about 97 % of

SME 's. The bunch is divided into two groups: the lower-quality domestic-only set of houses and the higher choice international houses by Katsarakis et Al (2007) . These two groups portion some but non all bunch participants. On the domestic side, there are more than 30, 000 active local houses. On the international side, there are over 140 houses registered to the Turkish Contractors Association, 23 of which are among the 225 largest building companies worldwide in footings of abroad activities (ENR, Engineering News records (2008)) . Harmonizing to a study on the web site of TCA about the Turkish Contracting in the International Market, `` in the last 36 old ages, up until the terminal of 2008, Turkish Contractors have undertaken about 5, 000 undertakings in 70 states, with a combined value of some 130 billion USD. Turkey ranks among the top 12 manufacturers of edifice stuffs in the universe, with such merchandises as cement, glass, steel and ceramic tiles taking a prima function. "

Further detailed information is provided in a publication by Yapi Endustri Merkezi (2007) as follows sing the services of the building and the related industries,

Turkey is the 11th largest manufacturer of steel in the universe and third-largest in Europe.

Turkey ranks 6th in Europe and 15th in the universe in the production of articles of steel.

Turkey is the universe 's richest state in marble, with a 40 per centum portion of entire planetary militias.

Turkey is the universe 's 5th and 4th largest manufacturer of ceramic tiles and ceramic healthful ware, severally.

Turkey is among the top glass makers of the universe.

Turkey is the 6th largest manufacturer of pigments in Europe.

Turkey is the 3rd largest manufacturer of plastic doors and Windowss in Europe.

There are 200 major technology confer withing companies in Turkey which are supplying 65 % of the proficient consultancy services realized in Turkey and 90 % of the consultancy services required by the Turkish houses abroad, harmonizing to the records of Association of Turkish Consulting Engineers and Architects (ATCEA) presented at their web site. Their one-year turnover is about \$ 350 million, and they employ about 5, 000 people.

5. Turkey 's place on sustainable development

Business involvement in corporate sustainability is turning in Turkey. Nemli (2009) investigated taking Turkish companies ' attack to corporate sustainability regarding,

Their attitudes and attacks toward sustainability,

Their chief patterns associating to environmental and societal sustainability,

The grounds why companies adopted sustainability patterns,

The grounds why companies have non adopted sustainability patterns and

Which companies produce environmental, societal or sustainability studies.

Nemli 's pre-research surveies showed that merely a few of these companies had formal sustainability schemes. Therefore an scrutiny of the sustainability patterns of these few companies would be more enlightening about sustainability in Turkey. The fact that there are so few companies prosecuting sustainability schemes in Turkey indicates that Turkish companies are at the beginning of sustainability execution in their concern. Nemli 's research was related to the fabrication companies and none of the examined companies was involved in the building sector.

Harmonizing to Turkey 's National Report on Sustainable Development by Ministry of Environment (2002) and besides summarized in a survey made by Ozkan (2003) , most of the environmental statute law in Turkey has been affected during the past decennary. An overall appraisal of the Turkish environmental statute law indicates that during the past two old ages, the construct of sustainability was clearly included in the Torahs and ordinances put into consequence. The undermentioned ordinances are considered to be vitally of import,

Environmental Impact Assessment Regulations,

Solid Waste Control Regulations,

Hazardous Waste Control Regulations,

Air Quality Control Regulations,

Water Pollution Control Regulations,

Waste Control Regulations,

Hazardous Waste Control Regulations.

Furthermore, the Ministry of Environment is taking farther legal steps to forestall and command environmental pollution. In this respect, the existing statute law is being reviewed as part of the attempts to harmonise them with EU statute law. It is anticipated that this measure will lend well towards accomplishing the ends for sustainable development.

Turkey had been prosecuting policies in the countries of energy efficiency and environmentally sound engineering, every bit good as industrial pollution control. To accomplish sustainable energy development and energy efficiency, the Government had been beefing up attempts to develop and utilize safe engineering, advancing research and development for appropriate methodological analysis, raising public consciousness of the issues, and measuring environmental impacts (A°lkin (2006)) . A

Harmonizing to the National Report on Sustainable Development 2002, during the past few old ages at that place has been an addition in industrial preparation plans related to work safety, environmental direction systems, quality confidence, and in-service preparation. These plans have been initiated by the Union of Chambers of Commerce and Industry, stock exchanges, Small and Medium Industry Development Organization (KOSGEB

), the Quality Association (KALDER), universities, and research establishments (Ozkan, (2003)) .

Recycling of edifice stuffs is a really new construct in Turkey. It is merely after the lay waste toing temblor of 1999 in the Marmara part, that some attending has been paid to the huge sum of constructing dust accumulated from the collapsed and dismantled edifices. Waste recycling is recommended and encouraged by the Turkish Ministry of Environment (Ozkan, (2003)) .

The Regulations for solid waste disposal go so far as to order that recycled stuffs should be preferred to new 1s. However, the waste referred to in the ordinances belongs to industrial procedures or boxing merely. Harmonizing to the National Report on Sustainability,

`` Waste direction is one of the major constituents of the execution of the sustainability rules. Industrial waste direction requires that wastes caused by industry, production and services be managed for the protection of environmental and human wellness by cut downing the loss of natural stuffs used in fabrication. Reducing the sum of waste at the beginning, waste recovery and recycling, every bit good as implementing appropriate waste disposal techniques are among the basic constituents of sustainable development. '' (Ministry of Environment, 2002)

Harmonizing to Turkey 's National Report on Sustainable Development (2002) , the type of industrial waste in Turkey as a underdeveloped state, is non much different from the type of waste encountered in the developed states of the universe. In order to quantify the sum and composing of

industrial waste and to look into the attendant environmental jobs caused Turkish Statistical Institute (TUIK) and assorted local authorities and industrial organisations (Union of Chambers of Commerce, Industry, Maritime Trade and Commodity Exchanges of Turkey, Chambers of Industry of Istanbul and Kocaeli) have conducted independent surveys to develop industrial waste stock lists for the period of 1991-1995. Although the industrial waste stock lists of the fabrication sector for 1994-1997, prepared by the TUIK, did not cover the full state, it is the lone legitimate waste stock list information bank that exists in Turkey. Besides the Industrial Waste Statistics of TUIK, the Ministry of Environment has besides concluded an elaborate industrial waste stock list undertaking in 2002, which encompasses the Marmara, the Mediterranean, and the Western Anatolia Regions (Ozkan, 2003) .

Waste generated by the building industry has not been accounted for in the statistics for industrial or family wastes. Since information for waste produced or disposed by the building industry has not been collected by any of these bureaus, the impact of waste from building industries is besides not known. Esin and Cosgun (2007) argue that retrieving of building waste is not yet prevailing in Turkey. The primary environmental concern should be the prevention/reduction of the effects of building waste.

Since the sum of waste generated, Turkey declared in the 9th Five Year Development Plan that the primary mark for commanding solid waste is the decrease of the sum of waste generated (State Planning Organization (SPO) , (2006)) . One of the basic rules of the said Development Plan is ``

Natural resources, cultural assets and the environment will be protected since the hereafter coevals, every bit good ". The study furthermore underscores the Turkish State 's decision and will sing the sustainability in resource use in following diction: `` Rapid population growing and industrialisation continue to be of import factors endangering sustainable usage of natural resources. The uncertainness about theresponsibilityand authorization distribution among establishments, for the sustainable usage of natural resources while protecting the environment without adversely impacting the production procedure, could non be adequately eliminated (Item 159, p. 38) " and `` More efficient production and less waste will be achieved by increasing the effectivity in natural stuff usage with the execution of environment friendly techniques in industry (Item 463, p. 87) " .

6. Discussion

Turkey has a strong building sector which can easy be considered as a regional leader in quality building and building stuffs. From the literature study it is evident that Turkey 's building industry 's sustainability place is non to the full structured yet. A few writers indicate that Turkish companies are at the beginning of implementing policies for sustainability. A study done by Turk (2009) studies that out 68 companies which are members of TCA surveyed had revealed that merely 28 of them had ISO-14001 enfranchisement.

The prevailing governmental sustainability papers in Turkey is dated to 2002. Sustainability is a path that all building industries must travel through.

This necessitates the industry to alter their concern scheme and organisational constructions and civilizations. This is a long-run and uninterrupted procedure that needs alteration and version of the sustainability attack to make competitory advantage over other challengers in the industry.

Global challenges associated with sustainable development are multifaceted, affecting economic, societal, and environmental concerns. These challenges have deductions for virtually every facet of a building house 's scheme and concern theoretical account. Most directors frame sustainable development non as a multidimensional chance, but instead as a unidimensional job, affecting ordinances, added cost, and liability.

The jobs of stuff ingestion, waste, and pollution associated with industrialisation nowadays an chance for houses to lower cost through the development of accomplishments and capablenesss in pollution bar and eco-efficiency. Investings made to protect the environment or as portion of societal duty were seen as investings that increase the overall costs and diminish fiscal return. Clean engineerings are normally more efficient therefore cut downing emanations and increasing productiveness. Reducing natural stuff usage and increasing recycling and recovery can cut down production costs. There are chances for cost nest eggs that may non go evident even though the benefits accrue straight to the company, until the company is motivated either by ordinance or concerns to better sustainability public presentation to analyze ways of turn toing these jobs and to put in the necessary research (Nemli, (2009)) .

The companies' committedness to corporate societal duty and overall reputation may be an important motivation factor for its current and prospective employees. There is besides an insurance value associated with reputation. In the event of a job, a company with a good reputation can bring on more supportive responses from stakeholders. Output extends beyond organisational boundaries to include the full merchandise life cycle—from natural stuff entree, through production procedures, to merchandise usage and disposal of spent merchandises. Output therefore involves incorporating the desire of the stakeholder into concern procedures through extended interaction with external parties such as providers, clients, regulators, communities, non-governmental organisations, and the media. As such, it offers a manner to both lower environmental impacts across the value concatenation and enhance legitimacy and reputation by affecting stakeholders in the behavior of ongoing operations. (Hart et Al (2003)) .

The industry and the disposal have to develop a macro policy which will incorporate societal, economical and environmental policies needed to accomplish a sustainable development of the Turkish building industry as a whole. A holistic sustainability policy covering the full building bunch does not be in Turkey yet. The industry needs to make a political organizational organic structure which is compatible with the demands of sustainable development and which is compatible with similar organisations across the universe. For case, The UK Government's scheme for more sustainable building (DETR, 2000) suggests cardinal factors for action by the building industry by widening the basic subjects. These include design for minimal

waste ; thin building ; minimise energy in building and usage ; make non foul ; preserve and enhance biodiversity ; conserve H2O resources ; respect people and local environment ; and put marks, proctor and study, in order to benchmark public presentation (Raynsford (2000) , Langston & A ; Ding (2001) , Miyatake (1996)) . These could every bit use to Turkey.

Advanced experiments from good illustrations in other states can be adapted to the constitutions of the Turkish building sustainable development attempt. The sector requires more funding to build sustainable undertakings due to the current higher monetary value of stuffs, substructure costs and the land-use ratio. It is expected, nevertheless, that the high cost of sustainable building will worsen in line with a rise in the figure of such undertakings. Many clients and end-users are going witting of the sensitive state of affairs of the environment, and are demoing an increasing penchant for buying sustainable terminal merchandises. For illustration, sustainable lodging reduces operational costs and H2O use, and offers improved security. Meanwhile, lodging investors, though willing to establish nature-sensitive undertakings, are hesitating about the hereafter of the sustainable lodging sector given the high costs associated with it.

Sustainable development is one of the most outstanding issues which are emphasized in the Turkey. National Environment Strategy and Action Plan prepared in order to accommodate to the societal and economic state of affairss in Turkey. In the Turkish National Report (2002) , it is emphasized that in order to sum up the current state of affairs, it has benefited from the

Environment subdivision of the 9th Five Year Development Plan (2007-2013) increased sensitiveness to the demand for a clean environment.

Although the environment is a moderately of import issue in Turkey, it has some advantages and disadvantages in respects to environment and sustainable development. The advantages are as stated by TUBITAK (2003) ,

Our natural resources ' non being wholly polluted,

The increasing consciousness of the environment particularly among the immature population,

The adequateness of scientific and proficient human resources who can work in this field make it favoured in respects of accomplishing sustainable development.

The disadvantages of Turkey in this field are,

In malice of non being wholly polluted, their is go oning pollution of natural resources,

Making usage of natural resources related to an investing for environmental betterment without taking attention of the set purposes,

Not maintaining a record of information and informations consistently related to environment,

Data which are recorded holding no criterion in footings of informations aggregation, confirmation, rating and transforming into information.

In relation to development programs and sustainable development in Turkish metropoliss, Ercoskun (2005) argues that the current development programs of metropoliss do non see urban individuality and ecological values and the regional programs do non see infinites between edifices, clime, illuming, way, air circulation, natural energy, etc. , ensuing the Turkish metropoliss to be unsustainable. Furthermore, she states that planning is one of the chief tools in Turkish sustainable development and concluding that the Turkish planning system (Development Plans, Laws and Applications) has to be challenged from the sustainability point of position.

Supplying sustainable development is non merely limited to direction of natural resources, providing equipment or commanding them. Persons should carry through their responsibilities as responsible citizens in order to accomplish sustainable development with respects of environmental protection. Therefore, it is imperative that persons be taught the topic of sustainable development get downing in primary school, every bit good as doing them cognizant of the environment.