

Chapter VII. A Theological Framework for the Biblical Sustainable Development of Energy and Mineral Resources.

God's project is the earth (cosmos) community, not only the human community. God is acting with justice and mercy to redeem creation, not only human beings. So, it is necessary to reorient our faith and ethics focusing on relations and community, not only on individuals and objects, by the new story of the earth and cosmos bodying forth the power, wisdom and love of God (Hessel 2001:202). It is also necessary to deliberately breach the walls between church and world to show ecclesial authenticity in response to the environmental crisis and to build the biblical sustainable society by the will of God.

Environmental reformation is to re-examine Scripture in the context of the current environmental crisis. All Christians should read and interpret the Bible with more alertness to nature, attending to God's special regard for the poor and oppressed. Particularly, theologians can participate by taking seriously the plight of nature and reflecting on real praxis for biblical sustainable development through reinterpreting the Bible.

Dealing with superficial symptoms will not be sufficient for environmental degradation interlinked with all creation and penetrating into human daily life. Getting to the root issues will turn out to be an absorbing theological discussion because the earth is God's. So, it is an urgent task to overcome the modern Christian habit of divorcing social and ecological stewardship through biblical thought on environmental problems.

In order to do this urgent task, we should firstly recover the biblical doctrine of creation: the heavens and the earth are the Lord's (Gen. 1:1); they are the products of the Creator's ongoing love revealed through creation and through Christ. Secondly, Christians should be awakened, that through the death and resurrection of Christ, He is reclaiming all the creatures for Himself. Thirdly, we should demonstrate through our tangible works that as God is reclaiming human hearts, He has laid claim to the environment in which we live. We have a mandate to image God, not just spiritually but physically, for the physical has always served as a mirror of the human heart.

This demands a new consciousness in the hearts of Christians about the need to care for the earth, to restore it as much as possible, and thus to declare that the earth is the Lord's. This demands a determined effort on

the partake of Christians to heal the earth and to cease contributing to environmental degradation.

Therefore, I will firstly look at theological perspectives in which develop the rudiments of an environmental ethic grounded in the Bible. Secondly, I will suggest practical guidelines to lead this world into the biblical sustainable society based on the theological perspective. This will also be to hint at what criteria can be employed to evaluate the environmental impacts from nuclear plants and mining activities in Korea.

7.1. Theological Perspectives for Biblical Sustainable Development.

A careful look at the Bible will reveal that environmental concerns are very much central to its message. We can seek insights from biblical texts that address the critical issues we encounter in relation to the environment. The issue of the environment is fundamentally theological and is related to central truths of the Christian faith: creation, sin, salvation, and the proclamation of the gospel (Kinnamon 1991:55-72).

The word of God starts with the glorious account of God's creation. God promised the best of created things to the people he made to be his own. The prophets looked forward to a renewed creation. Jesus Christ displayed a very positive attitude to all that was around him. Paul spoke about creation groaning for redemption, just as much as human beings are groaning. The final book, Revelation, concludes with a glowing description of the new heaven and the new earth, a glorious continuity of what God has already done for the world.

However, in the light of the traditional Christian practice to mainly restrict the scope of grace to matters of personal salvation, the church does need new theological and ethical bases for biblical sustainable ecological integrity. This need does not entail abandoning or replacing Christianity's main themes. Rather, it requires extensions and reinterpretations of these main themes in ways that preserve their historic identity and that are also consistent with biblical sustainable development by the will of God. (Nash 1991:92).

7.1.1. Understanding of Creation for Ecological Integrity.

The scriptures reveal the essential truth that God is the Creator of all

creation (Gen. 1:1) and the Spirit of God continually sustains and renews the earth (Ps. 104:30). We confess the Triune God as the source of all life. The Holy Spirit manifests God's energy for life present in all things and reminds us of the dependence of all things on our Lord God. Through Jesus Christ all things have been made, and God's creation comes to its fulfillment in Him. The boundless mystery of the universe, the abundance, beauty and grandeur of creation and of this precious planet manifest the glory of God.

7.1.1.1. Creation of Creation by God.

God is the sole governor and final benefactor, the sovereign source of all being and becoming, the ultimate provider and universal proprietor, the originator and systemic organizer. God is the Creator of all creation (Gen. 1:1), and has declared that it was very good (Gen. 1:31; 1 Tim. 4:4). All elements and inhabitants of every planet and solar system are creations of God and finally dependent on God's providential preservation and parental care.

The God alone is the owner: "The earth is the Lord's and all that is in it, the world and all those who live in it" (Ps. 104). Ancient Israel interpreted as imposing ethical restrictions on the use of the land by its temporary occupants, the human aliens and tenants (Lev. 25:23).

The logic of the doctrine of creation does not permit a nature-grace dichotomy. However, Christian churches used to restrict in practice the scope of grace to matters of personal salvation, and the means of grace (world and sacraments) to ecclesiastical functions. These typical restrictions distort the doctrine of creation. Grace is not only the forgiveness of sins but the givenness of life, a double gratuity of redemption and creation (Sitter 1972:74-78).

God is love. The creative process, therefore, is an act of love, and its creatures are products of love and recipients of ongoing love (Ps. 136:1-9). The whole of nature is an expression of grace, that is God's faithful loving kindness that characterizes God's nature and acts. Through elimination of a nature-grace dichotomy, we should endow all of nature with an intrinsic significance and have an attitude with an understanding of nature as a manifestation and beneficiary of grace.

7.1.1.2. All Creatures with their own Intrinsic Values.

Christian understanding of the world is the affirmation that all the creatures are God's good creation to have their own value and dignity in and of themselves, apart from any usefulness to humans. All creatures have divinely-imparted value independent of human interests. This value exists in a wild and virginal state prior to the taming and technical transformations of human managers. All God's creatures are worthy of moral considerations, as a sign of the worthiness imparted by God as an expression of the worship of God.

The non-human world is a sphere in which God reveals his presence and communicates with humans. The Spirit is present throughout creation. The presence of the Spirit fills the world with the glory of God. The monotheistic doctrine of creation does not desacralize nature: "Nature is still sacred by virtue of having been created by God, declared to be good, and placed under ultimate divine sovereignty" (Heyers 1984:47). We affirm that the universe, as created by God, is good.

However, we should not confuse with nature gods leading to pantheism, animism and/or fetishism. From the theological perspective of monotheism in the doctrine of creation, there are no lesser divinities. In this view, polytheism, animism, astrology, totemism, and other forms of nature worship are not only idolatry, but also vanity and stupidity as the prophets regularly suggested (Isa. 40:12-28; 44:9-20; 46:1-11; Acts 14:15).

Even though the manifestations of the pathetic fallacy are factually found in the Bible, the Old Testament definitely calls all the biotic and abiotic creatures to praise their Maker (Ps. 96; 98; 148). The Creator alone is worthy of worship. Nothing in creation is independent of God, nor identifiable with God. He is the Creator who created all creatures out of nothing (*ex nihilo*).

7.1.1.3. All Creatures Blessed by God.

The universe was not created mainly for human beings, contrary to the humorously arrogant pronouncements in most periods of Christian history. According to Genesis 1, creation and its creatures are declared to be good before the emergence of humans (*homo sapiens*). All animals are blessed with fertility, commanded to "increase and multiply" (Gen. 1:22; 8:17).

God is not only interested in human beings, but also loves all creatures

and is constantly involved in their lives (Psalm 104: 10-14; 145:13). In Job 38-41, the author not only stresses human humility in the presence of divine mystery, but also assumes God's positive evaluations of the whole creation apart from any human utility. God's compassion covers the whole of creation (Ps. 145:9).

The divine sovereignty and universal providence also imply that the Creator is concerned about the whole of creation and all its parts. All the creatures respond in their own ways to the goodness and love of God. This response will reach its climax when all share in the ultimate presence of God amongst His creatures.

7.1.1.4. Relationship among God, Human and Non-human Creation.

In the Old Testament, the creation account begins by showing the threefold relationship between God, human and non-human creation. This relationship is later exemplified in the covenant with Israel, which includes the people of Israel, the gift of the land of Israel and their responsibility for it to God.

If God is the Creator of everything, and if there is a strong bond between God and creation, there ought to be an integral relationship between all creatures as well. Since God is the source of all in the Christian doctrine of creation, all creatures share in a common relationship. Human and non-human creation share a common Creator as well as a common creative process (Gen. 1:1-28; 2:17-19)

On the assumption that one ought to value God's relational design, this theocentric kinship has been interpreted in Christian history as having ethical implications. In this vein, one of the fundamental tasks of Christian ecological ethics is to determine the moral responsibilities entailed by the reality of theocentric and ecological kinship (Nash 1991:98).

Human beings are a part of the world which our Lord God created with the intention of relationship between humans and non-humans.¹⁾ Non-humans can survive without humans, but humans must humbly accept that they cannot survive without non-humans. We should accept the total dependence of our well-being on the well-being of creation. So, a lack of the specific relationship with God in our lives results in a serious distortion of our values and attitudes to the rest of the creatures (Hall 1990:185-215).

The Noachic covenant (Rainbow Covenant) is interpreted as a biblical

symbol for environmental responsibility (Gen. 9:8-17). The ecological covenant, along with the story of Noah's Ark itself, is a symbol of the unbreakable bonds between the Creator and all creatures, not only a sign of the covenant between God and Noah.

While the covenant assumed responsibilities to future generations of humanity, the story provides a symbolic mandate for human responsive loyalty to God's ecological fidelity. The divine promise entails human obligation because faithfulness to God entails loyalty to God's covenants. Similarly, the ecological covenant requires caring and careful responses from humans.

Therefore, environmental degradation is a violation of the ecological covenant and an attack on the created order itself. It is disloyalty to God, other creatures, other humans, future generations, and ourselves, because we are all bound together with common interests in saving the ecological integrity of our home, the earth (McCoy 1992:369-370).

71.1.5. Land of God's Gift and Promise.

The land is God's gracious gift to habitants and God's promise to the landless, demonstrated in the story of the garden of Eden, the grant of fertile Goshen to Joseph and his clan in Egypt, the entrance into Canaan that flows with milk and honey, the return from Babylon to Zion etc. (Conradie and Field 2000:63-67).

So, the people must live in the land in accordance with God's covenant, because the land is God's. The land should be ruled with justice and mercy, providing for an equitable distribution and developing resources in the land by the will of God. The land is not only the object for reckless development for only the current generation, but the subject cared for and used in accordance with the will of God for all the future generations.

In particular, the limited energy and mineral resources deposited in the land should be exploited in accordance with biblical sustainable development by the will of God. They are inevitable resources in the current civilized

1) Douglas J. Hall classified human views about nature into three types such as humanity-over-nature view, humanity-in-nature view, and humanity-with-nature view (Hall 1990:185-215).

society so that we cannot imagine only one day of our lives without energy and mineral resources, as we can not maintain only one minute without pure blood in our lives.

For the legal mind at present, land and its resources are generally something that could be owned. However, ownership poses a serious problem in the light of environmental degradation. The first problem is that little concern has been given to ecological inter-connectedness. The second problem is that the growing disparity between the landed and the landless has caused havoc in many contexts with greed and envy increasing all the time.

Greed and envy demand continuous and unlimited economic growth of a material kind, without proper regard for conservation. The economic growth and unlimited greed have brought the land to the brink of destruction, because this type of growth cannot fit into a finite environment. So, the Bible traces the problems back to the sin of individuals compounded in the sin of society. We should note that the prophets repeatedly warn against the mismanagement of the land through breaking and violating the covenant with God.

7.1.1.6. Creation is waiting.

Paul says that the whole created universe groans in all its parts as if in the pangs of childbirth and waits with eager expectation for God's sons to be revealed (Rom. 8:19-22). The liberation of creation is inextricably linked to the salvation of humans. Creation is waiting for a new community of humans (the new creation) to be formed. Creation is in critical need of a community of people who will again obey God's creational laws and restore justice, peace, love and truth to daily life. Creation is waiting for a community whose lifestyle will comply with care for creation according to the wisdom of the Creator. Creation is waiting for a community that will take bread and wine as a sign of the earth's fidelity to its Creator, the Father of our Lord Jesus Christ (Zink 1985:109).

7.1.2. Christian Faith for Ecological Integrity.

The scriptures teach that human beings were created by God from the earth. In addition, God gave them the breath of life (Gen. 2:7) and created

them in the divine image and likeness (Gen. 1:26-27). So, we have to get rid of our ignorance to the fact that we are part of nature. We should acknowledge that we cannot exist apart from it. Mankind is part of nature and life depends on the uninterrupted functioning of natural systems which ensure the supply of energy and nutrients.

Therefore, it is important to realize that human beings are not the center of the universe, neither is the created order. God should be the focus of our attention. We should more than before proclaim the biblical answer: "The earth is the Lord's, and everything in it" (Ps. 14:1). We should have a unshaken faith that not humankind, not the wonders of nature, but God the Creator is the center of the universe. Without Him nothing else really falls into place (Kritzinger 1991:4-19).

7.1.2.1. Sin against Environment.

Christianity has functionally limited the meaning of sin narrowly such as murder, thief, sexual misdeeds etc. However, the concept of sin is broad and complex in meaning, and is an indispensable element in Christian theology. Particularly, in our time of facing the environmental crisis, the meaning of sin must be properly extended to cover environmental misdeeds and the human condition underlying them.

All human beings are created in the image of God to reflect the character of God and represent God's interest in the world (Gen. 1:27). They should share God's attitude toward all the creatures. They are also part of nature, a species in the community of creation.

However, they have had a tendency to emphasize their unique role among creation for so long. They have lived in the earth as if they were apart from nature. Their arrogance against the rest of creation away from the will of God resulted in a neglect of their responsibility to protect the environment (Gen 6:11-13).

The root of sin is egoism, acting for self-centered lust to arrogantly dominate others and the pretension of self-sufficiency at the expense of other beings. Sin makes the self the center of existence, in defiance of divine intentions and in disregard to the interests of other creation. Sin is turning inward, and thus turning away from God, neighbor, and nature (Gustafson 1981:242-47).

From these points of view, environmental sin is the refusal to act in the

image of God, as responsible representatives who value and love the host of interdependent creatures in their ecosystems, which the Creator values and loves. It is breaking the bonds with God and our comrades in creation. It is acting like the owner of creation with absolute property rights.

Environmental sin is again expressed as the arrogant denial of the creaturely limitations imposed on human ingenuity and technology, a defiant disrespect or a deficient respect for interdependent relationships of all creatures and their environments established in the covenant of creation, and an anthropocentric abuse of what God has made for frugal use.

These dynamics of environmental sin are evident in all dimensions of our environmental crisis. The avarice induced by our economic system resulted in the excesses of capitalistic destruction such as the gutted mines, the wasted forests, and even the construction of nuclear plants without counter-planning for nuclear waste disposal, and sacrificed the future generations to immediate enrichment.

7.1.2.2. Presence of the Holy Spirit.

The Holy Spirit of God is imminent as the life-giver in creation. This vivifying presence reconciles, liberates, enlightens, inspires, guides, counsels, comforts, suffers with, nurtures, strengthens, transforms, renews, sanctifies, empowers, and prods created being in its pilgrimage to its destiny disclosed in Christ. God is intimate with the creation, actively involved in personal, cultural, and natural histories (Nash 1991:111).

This stress on divine immanence breaks down the classical discontinuities between Creator and creation, faith and reason, natural and supernatural, and sacred and secular. It is a revolt against the perception of God as an absentee landlord who enters the premises only for miraculous repairs. Since God dwells in creation and not in deistic isolation, the world is the temple of the Holy Spirit.

Therefore, we can encounter our omnipresent God anywhere as countless Christians have testified. Because God is present not only in the burning bush (Exod. 3:2) but in the nurturing soil and atmosphere, sharing the joys and agonies of all creatures. The intuition of the Spirit's presence in power and love in the physical world have been a potential power in the development of a human appreciation, admiration, and affection for nature, with both spiritual and ethical consequences.

However, creation and its creatures are finite and transient: they are not divine and are, therefore, not to be worshiped. We must not assign natural objects to different deities or divide nature among competing gods like animism and polytheism. Christian sacramentality sacralizes nature but does not divinize nature. Christian monotheism provides an integrated world view: The world is one because God is one.

7.1.2.3. Salvation in Jesus Christ.

Jesus Christ came to the earth in the incarnation of God to enter into solidarity not only with humans but also the world (John 3:16-17). He confers dignity on everything in creation. Christ will redeem the whole creation, liberating all creatures from death and reconciling them for harmonious interactions (Isa. 11:6-9; 65:17; Col. 1:14-20; 1 Cor. 15:28; Eph. 1:10; Rom. 8:19-22).

Every creature is destined for resurrected glory, and Jesus' resurrection is the pledge of that universal salvation. The hope is not for salvation from the human body, but rather the redemption of the whole body of creation (Becker 1980:149-181).

However, the characteristic of Western theological traditions has been the absence of hope for the salvation of creation. Heaven is exclusively for humans who alone have rational and immortal souls, and generally only for a few of them who believe the appropriate doctrine and who behave in the proper manner. There is no room for non-human creatures in the heaven at all (Regan and Singer 1976:179-180).

In this ultimate dualism, redemption is the release from nature, and oblivion is the fate of nature. This exclusive belief has served as a major justification for depreciating the value of creation and destroying its allegedly valueless components. Humans can neglect or abuse what is not redeemable. It can be treated as only an instrumental value without considering its intrinsic value for God to be respected by others.

A non-redemptive God cannot be steadfast with love or justice. Any lover who allows the final annihilation of the beloved fails all the tests of love, including the preservation of the loved one's individuality, potentiality, relationships, and sense of ultimate meaning. There is no ethically sustaining ground in such a situation. Words like love, justice, fidelity, harmony, and reconciliation are all relational terms that have relevance only in relational

contexts.

From this perspective, the resurrection hope is central to the Christian faith. Without this hope, Christian theology and ethics are incoherent. The condition of creation is ultimately tragic and the character of God is ultimately immoral. Only with this hope can the Christian faith maintain its apostolic integrity (Acts 4:2; John 14:2; Rom. 5:10; 8:10-11; 1 Cor. 15:12-16; II Cor. 4:14; Col. 1:18; 1 Thess. 4:14; 1 Pet. 1:3-5; Rev. 1:5).

7.1.2.4. Poverty and Environment.

We should recognize that a fundamental cause of poverty is almost the same as that of environmental degradation as mentioned in 6.4, which is the sinful nature of humankind, manifesting itself through violence, greed and self-interest overriding the God-given mandate to meet the needs of both human and non-human creation, and particularly of a new poor.²⁾ We therefore accept that it is of equal importance when addressing the needs of creation to deal adequately with the needs of the poor (Mcfagu 1999:159-195).

Poverty comes under added scrutiny with an environmental crisis. Wherever there is poverty it is directly or indirectly linked to the perversion of justice. There is injustice against the poor masses and against their environment. There are people who in their poverty are compelled in their desperation to strip their surroundings of all natural resources that could help them survive. However, the poor were sometimes blamed for over-exploitation and consequent degradation of natural resources (Hallman 1994:225-247).

The poor invariably suffer first and most from a degraded environment. In a world intricately interconnected, their struggles are thus a critical and practical starting point for restoration and the well-being of all creation. To overcome the suffering life of those at grassroots as a result of indifference, overconsumption and overdevelopment mainly in the affluent society, people should be persuaded to follow biblical sustainable

2) Eco-feminists tend to consider nature as part of the new poor like maltreated females who suffered in a patriarchal society (Mcfagu 1999:159-195).

development in accordance with the will of God while resisting the pressure of greed and covetousness that pervades humanity.

Our wanton pollution, profligate consumption and human-induced extinctions of creatures are sins from the perspective of the incarnation of Jesus Christ. We should reject anthropocentric valuations by means of spiritual contempt of earthly materials and goods and indifference to other humans and other creatures. Therefore, our Lord Jesus Christ definitely declares that individuals and nations will be judged on the basis of their care for the "have-nots" (Matt. 25:31-46).

7.1.2.5. Christian Hope for Future Glory.

Even though the world is physically decaying and spiritually infected with sin, Christians do not need to be pessimistic. Because we have hope for future glory. In spite of such a disappointing life of human beings, our Lord God has been faithfully carrying out the plans for a new creation to establish the Kingdom of God on earth as it is in heaven (Mat. 6:10).

If Christian salvation is the resurrection of Christian bodies and the new creation of all non-humans, the salvation Spirit of Jesus Christ is the creation Spirit of our Lord God (Col. 1:14-17). All humans and non-humans on earth are the existences of loving solidarity in the hope of salvation (Rom. 8:21-23) waiting for the new heaven and new earth (Rev. 21: 1).

Through Christ's cross and resurrection, we are assured that the entire creation is made new. All things have been reconciled to God in Jesus Christ, and through the Spirit we begin to experience God's future. We look forward to the new heaven and new earth that God has promised, and we wait for God's new order that will free the world of sin, sickness, and evil. This is exemplified in the new messianic era inaugurated through the life, death, and resurrection of Jesus Christ.

7.1.3. Christian Responsibility for Ecological Integrity.

Human beings have the burden to exercise their responsibility along with love and concern for one another within God's creation. We have the responsibility to maintain God-given rights in our dealings with nature. Dictionaries define rights as having to do with justice and moral goodness as well as with entitlement to privileges. Responsible behavior will show

respect for the rights and values of all the parties involved.

The responsibility given to Adam and Eve in the Garden of Eden to name and exercise control over all creation is a good pointer to the fact of such a responsibility (Gen. 2:15). We are quick to interpret it to refer to human authority over the natural world, but ignore a reference to the responsibility entrusted to us to respect and assign rightful place and value to everything by the purpose of God.

7.1.3.1. Divine Image and Human Domination.

According to Genesis 1:26-28, humans are created to be the image of God and to exercise domination in relation to all other creation. The meaning of these two related concepts has been the subject of numerous speculation and debates among theologians in Christian history.

Too frequently and falsely in recent centuries, both the image of God and domination have been interpreted as the divine grant of a special status making humanity the sole bearer of intrinsic value in creation with the divine mandate to pollute, plunder, and prey on creation to the point of exhausting its potential. Domination often became a major pejorative in the environmental complaint against Christianity (White Jr 1967:1203-7).

However, it is surely a distortion of the notion of the image of God and a perversion of domination in their arguments. It is a projection of human greed rather than a revelation of God, since it makes God into the image of arrogant humans. The image and domination in Genesis 1 and 9 are not ground for human abuse of nature (Steffen 1990:1990:18-22). What do these concepts originally mean in the theology of creation?

7.1.3.1.1. Divine Image in Human Beings.

The image of God does not allocate to humans a special status as the sole bearer of intrinsic value or a special sanction to destroy with impunity, but rather a special commission, calling and/or task to serve as responsible representatives of God's interests and values and function as protectors of the ecosphere and self-constrained consumers of the world's goods.

The image is environmentally as much a responsibility as a right. Thus, humanity is both part of the created world and charged to be God's steward of the created world. Human beings are charged to keep the earth and

serve it (Gen. 2:15), in an attitude of that blessed meekness which will inherit the earth with the peculiar rational, moral and creative facilities.

The New Testament understanding of the image of God enhances this sense of environmental responsibility. Christ is the perfection of the image of God and the paradigm of domination over creation so that He is the moral model (II Cor. 4:4; Col. 1:15; Heb. 1:3; John 1:14-18). Christians are to imitate or mirror the love of Christ because love is the essence of the image (Eph. 5:1-2). The mission of Christians is to reflect that love in relationship with all that God loves.

Human worth is not based on possessions, achievements, physical attractiveness, or public acclaim. Instead, it is based on the ability to reflect the character of our Lord Jesus Christ in our love, patience, forgiveness, kindness, and faithfulness. We are persons of worth to help all humans love God, know Him personally, and make a valuable contribution to all other creation around us.

Thus when interpreted in the context of Christ, the realization of the image and the proper expression of domination are not manifestations of exploitation, but rather representations of nurturing and serving love. That is a reason why one of the basic questions for Christian ecological ethics is how to express love, including justice in an ecological context.

7.1.3.1.2. Domination over Creation by Human Beings.

Human domination was neither possible nor necessary until the late development of strong creative and destructive capacities along with the development of science and technology. Our planet thrived under the provision of God without human assistance. Humans have played only very recently destructive roles in the biological and geological history of the planet, our home (*oikos*).

In this context, the idea that the earth was made for humans is not only ludicrous but sinfully arrogant. It is a violation of the integrity of Christian faith. The earth is God's. He has ultimate rule over the earth, and he exercises His authority with loving care. When God delegated some of his authority to human beings, He expected us to take responsibility for the environment and other creatures that share the planet.

Approval for the exercise of unlimited power is alien to Genesis 1 and to the Old Testament as a whole. Humans are creatures, always subject to

divine domination. The land is God's, entrusted to humanity to till and keep in accordance with God's ground rules (Gen. 2:15), which even includes a soil conservation mandate to let the land rest every seven years (Lev. 25:3-5; Exod. 23:10-11).

Therefore, the notion of human domination over nature must be tempered by two interwoven considerations. First, God created human beings to operate under His lordship. Second, God intended mankind to "image" Him on the earth, dealing with the environment as representatives of the Creator, as if He Himself were at work. Our goal as Christians belonging to God is to nurture the environment, not to harm it; to support it, not to destroy it.

We must not be careless and wasteful as we fulfill this charge. God was careful how he made His earth. We must not be careless about how we take care of it. Whenever tendencies are inherent in the world "subduing" for overreaching human boundaries through using up-to-date science and technology should be checked and balanced by the biblical concepts of domination itself, and by other moral constructions in the Bible.

7.1.3.2. Basic Ethic of Jesus's Teaching.

A Christian environmental ethic must focus attention on the life and work of Jesus Christ. The redeemed community of God must develop a redeemed ethic that will demonstrate the redemption message and its impact on all of God's creation. Environmental problems are not accidental, technological, religious or philosophical, but is the problem of sin and sinfulness.

Our Lord God has demonstrated grace that has brought redemption through the cross of Jesus Christ. This encourages us to see environmental concerns as part of our Christian life. Therefore, the permanent solution to environmental degradation will hopefully come through a responsible ethic from a redeemed community.

7.1.3.2.1. Twofold Dynamic of Environmental Ethic.

Jesus Christ summed up the law in a twofold dynamic: love for others as oneself and love for God above all else. A love for God must not only lead us to a deeper dedication to our Creator, but also draw us into a more wholesome relationship with creation. We have thought that love for God

means hatred for the world. On the contrary, we need to discover a more integral link with God's world.

The injunction to love one's neighbour takes us away from any individualistic ethic to a community foundation where we see the needs of others as being as important as ours. Broadened to its fullest implications, this must apply from community to community, and nation to nation. The kind of love that Jesus Christ is teaching is not merely an emotional response but one which calls for heart, mind and will to act. It is a total commitment to others so that equity becomes a natural response rather than a forced demand.

An ethic that is demonstrated through the power of Christ's indwelling presence will have to show in love the central dynamic of Christ's life and ministry. God created and demonstrated Himself as love through the history of the people of God. Election, covenant and redemption were all indicators of the love of God being made available freely through God's grace.

The climax is when "God so loved the world that he gave his only begotten son" (John 3:16). Love is nature, character and outworking of all that God is and does. Therefore, love ought to be the foundation for all that we will do and say as Christians. Love is the center of the gospel, which offers a strong grounding for a Christian ethics. The Christian life is faith working through love (Gal. 5:6).

7.1.3.2.2. Limited Carrying Capacity of the Earth.

Our omniscient and almighty God could create the earth with the unlimited carrying capacity to meet all selfish human greed without relating to ever-increasing population and environmental degradation. What is His purpose not to create it like that for human beings?

We should carefully read His purpose that He wants to teach us to have an attitude of humility, frugality, relationality, solidarity and sustainability in our daily lives and follow the life of our Lord Jesus Christ in the light of the limited carrying capacity of the earth. Thus common affirmation is to love each other (John 15:17), fairly sharing it between the rich and the poor, humans and non-humans, and from generation to generation.

If there is no such thing as an amazing grace from the Creator God, and in particular loving humans and this world, can you imagine what selfish humans will do to meet their unlimited desires?

7.1.3.4. Eco-justice.

Eco-justice is a word which weaves together concepts of ecology and justice, calling us to be responsible and just living to help correct ecological as well as economic imbalances. Christian responses to environmental problems urgently need to be developed in the light of biblical commitment to justice and ecology.

The God portrayed in scripture is a lover of justice (Ps. 99:4; 33:5; 37:28; 11:7; Isa. 30:18; 61:8; Jer. 9:24). Jesus is not only Love but also Justice of God (Haughey 1977:264-290). Jesus clearly was in the prophetic tradition of Isaiah, Amos and Hosea. He denounced those who "pay tithe of mint, dill, and cummin, and have neglected the weightier matters of the law: justice and mercy and faith. It is these you ought to have practiced without neglecting the others" (Matt. 23:23).

Jesus Christ came to us in the form of human need and in the context of a deprivation of rights, soliciting just and compassionate responses. He also took active part in the realities of our sinful world. In doing so, Jesus initiated the transformation of this present earth into a new earth. So, we should affirm that God creates and cares for the earth and wants us to be concerned about the earth, our home. And to neglect the deprived is to reject Christ. Individuals and nations will be judged on the basis of their care for the "have-nots" (Matt. 25:31-46).

The major concerns of ecojustice are today (1) matters relating to our personal relationships, (2) issues relating to countries or communities that exploit the poverty of another country, and (3) matters of a just relationship between humans and creation itself etc (Hessel 1996: 211-222).

People have exploited their laws for their own ends; for their class; for their own nation without considering neighbours and nature. The strong taking advantage of the weak, the luxurious life of a few in the face of misery of many is today leading to environmental catastrophe. The reckless exploitation by the rich North and multilateral corporations in the poor South are to deprive the poor of their natural environment and means of livelihood. Such exploitations lead to uneven distribution and use of the earth's natural resources (Hallman 1994:3-9).

The more sensitive issue is the dumping of toxic waste into developing countries where environmental restrictions have not yet been introduced as

discussed in 2.3.2. This threatens the life of the poor. A nation must not only ensure basic rights for its own people, but must also take care that its neighbours are not deprived because of its policy.

However, today it appears common to blame the South for all environmental problems. It is not often stated that it was the rich North that made some of these countries poor through their reckless exploitation in the name of industrialization. Amos condemned those who, pretending to be religious, participated in rituals to conceal their misdeeds. God confronts all people in every place, in all nations and in all history.

Biblical eco-justice can be defined as a fair treatment of others and full respect for their rights with their own intrinsic values as part of this world by the will of the Creator. So, all things must be treated with respect in accordance with divine valuation, and all creatures must be treated as ends in themselves, not simply as means to human ends. Nothing is any longer valueless or meaningless or irrelevant. Every creature counts for God ultimately.

Eco-justice is not an option for Christians, but a moral imperative. Loyalty to the lover of eco-justice entails a love for eco-justice, especially focusing on securing the needs and rights of poor and oppressed humans and non-humans. The Jubilee principle of Leviticus 25 and Deuteronomy 15 is a good exposition of social and ecological justice. The principle is aimed at protecting the rights of victims of injustice, both humans and nonhumans.

We are summoned to shape the present on the model of God's New Heaven and New earth. That is part of the meaning of the words in the Lord's Prayer: "Your kingdom come, your will be done, on earth as it is in heaven" (Matt. 6:10). God expects his people to demonstrate just and equitable relationships which will bring about integrity in our world today. Christians must reflect God's concern in actions that reflect this relationship.

7.1.3.5. Love, Responsibility and Ethics.

A responsible ethic couched in God's love will result in a practical outworking that will help develop the right ethical perspectives. First, Christians who are called to care for creation will see the need for a recognition of harmony, unity, purity and integrity in creation. our care for creation will show in our love to protect, conserve and bring healing to a wounded earth. Ecology implies inter-relatedness and this will show in our

own hurting for a creation that has been hurt.

Second, we are called to preserve and conserve creation's resources. Preserving could imply abstaining from use, whereas conserving calls for responsible (careful) use. We need to develop the responsibility to preserve some endangered species, and conserve some depleting energy and mineral resources not only for our present needs but also for future generations.

Third, responsible ethics calls for a demonstration in responsible lifestyles. Greed and materialism have caused havoc and disparity which continue unabated with human exploitation. We are called to a life of sharing in the world's community rather than accumulating for ourselves. While this may start interpersonally, it must be realized internationally. In fact, when a nation starts living with integrity, its people will develop a more responsible attitude. Some of the major environmental violations are those that have emerged through international activities.

Fourth, responsible ethics call for an acceptance of the rights of all of God's community and creation. The environmental crisis has brought people to recognize the need to protect the rights of future generations. The rate at which resources are utilized in our world at present is alarming. The question is asked: How much longer will these resources last?

Finally, we have a responsibility towards God to honour Him for the way in which He has honoured us with creation and love. An ethic based on our own human love and responsibility will always be limited by human sin. But knowing that God has honoured us despite our rebellion, we must respond in acts of love, care and responsibility that will in turn honour God. And this will form an integral part of the biblical basis of Christian environmental ethics.

7.1.4. Practical Obstacles for Ecological Integrity.

There are some practical obstacles in realizing the biblical sustainable development in accordance with the will of God. One of the major obstacles lies in ideologies which separate subject from object, mind from matter, and nature from culture. Political economic thinking still sees progress as production and consumption of more goods, because development is equated with growth. But the planet, our home is finite and its capacity to sustain growth already is seriously affected (WCC 1991:60-61).

A second constraint lies in the division of the world into industrialized

and non-industrialized nations. The isolation of wealth from the needs of the poor has resulted in a North-South confrontation which is causing more polarization. Historically with energy and minerals, exploitation of nation by nation and of people by companies has been practiced since the industrial revolution. We enjoy plenty of energy and minerals at the environmental expense of others. We have quality food while our neighbours are hungry. That affects creation very negatively.

Thirdly, we should keep an eye on the potential misuse of technology which is less than perfect. Nuclear plants provide such an example of which we should keep an eye on. Particularly, the disposal of nuclear waste is a preconsideration for the burden of our next generations.

In the end, the main obstacle to the realization of biblical sustainable development lies in our own hearts, in our fear of change, in our lukewarmness, in our lack of spirituality, in apathy and uncritical conformity to the status quo, in our lack of trust in God.

As the world becomes more exploitable, more profligate, more crowded, more unequal, hotter, stormier, less biodiverse, and more violent, the environment of the planet, our home becomes worsened into the brink of total destruction, contrary to the will of the Creator God (Hessel and Rasmussen 2001:186).

Therefore, we need the dynamic power of the Spirit that integrates our faith with our daily lives, our worship with our action, and our justification with our sanctification. When we try to do our best according to the practical guidelines of biblical sustainable development, "no new day will surely begin without having a night to precede it. We contemplate the earth at sunset. Now is the time to make it blaze with glory just once more, before the night falls and a new day shines" (Badke 1991:154).

7.2. Practical Guidelines for Individuals regarding Biblical Sustainable Development.

Humans have natural rights to use physical goods as resources to satisfy human needs and fulfill our cultural potential, but Christians have moral responsibilities as the salt and light of the earth (Mat. 5:13-15) to use these resources frugally, fairly, and prudently in respect for all the belongings of our Lord God.

Christians should not insist only on their rights in accordance with their selfish minds, but they should truly perform their duties to love others and

recover the environment of nature. They must do the best to restore a balance between civilization's ravenous appetite for energy and mineral resources and the fragile equilibrium of the environment by means of a theocentric temperate life in contrast to an anthropocentric extravagant life.

The earth and everything in it are part of God's creation (Ps 24:1) and therefore should be treated appropriately. It is the handiwork of God and therefore qualified as good. We should note that the blessings of God were certainly inclusive of material resources from the world God created.

When we see the earth being destroyed for economic growth, we no longer stand on neutral ground. Environmental exploitation must be resisted by Christians. We should make a determined effort to heal the earth, to cease contributing to environmental degradation, and thus to bear a tangible testimony that God is reclaiming all things lost by the fall. We must repudiate any polluting project, because pollution is a reflection of sin. We must be by all means the scourge of pollution in the world.

Christians have to account for all the rest of creation before God in various ways: as servants, stewards and trustees, as tillers and keepers, as priests of creation, and as nurturers. This requires attitudes of compassion, humility, respect and reverence about nature.

In the Bible, danger and destruction are understood as the signs of the time which calls for repentance and renewal of the relationship with God and the whole of creation. Accordingly, we should return to God and call upon the Spirit to reorient our lives.

7.2.1. Practical Guidelines on Attitude.

We have to begin with basic attitudinal transformations: a recognition that it is proper for a Christian to be involved in the physical realm; willingly believing that the individual is at the heart of any revolution in society, and recognizing that there is nothing we can achieve without people and nature, and we need them as much as they need us.

Even though we cannot relate humans and nature in a biocentric equality, this does not negate a God-intended relationship of respect, care and love in stewardship. We must, therefore, approach solutions to the environmental crisis through a closer look at the inextricable link between humans and nature. In the context of the ecological crisis, we should be reminded that humans and nature belong to one another in an integral relationship within

God's intricate design.

Changing our center from human beings to the Creator God is the first step to practice biblical sustainable development in accordance with the will of God

7.2.1.1. From Anthropocentrism to Theocentrism.

Some environmentalists argue that Christianity should replace its attitude with ecocentric perspectives, because it has an anthropocentric attitude to nonhuman creation. The Bible however upholds a theocentric perspective so clear that the arguments are very far from Christianity.

Ecocentrism is the emerging ecological worldview and advocated as the only hope to save humanity. This new paradigm is the product of the ecological awareness in society, influenced by Eastern philosophies, systems theory, quantum physics, and native cultural insights (Gnanakan 1999:124).

While ecocentrism provides the needed alternative to anthropocentrism, it does not provide the biblically justifiable solution for the Christian. It is a valid corrective for the arrogance that we have been accused of, but these insights need to be placed alongside our strong commitment to God as Creator and one who continues to sustain this creation. It is theocentrism we need to consider.

Paul summed up theocentricity with a total submission to the Creator God: "In him we live and move and have our being" (Acts 17:28). Transposing this to the entirety of God's creation, we affirm that everything finds existence, meaning and purpose in its relationship to our Creator and Redeemer God. Our being stands or falls in relationship to this God. With the environmental degradation we face in our daily lives, we need to clarify the focus of our theocentricity.

Pure ecocentrism tends to defy nature, while pure anthropocentrism will divinize humans. Such an attitude can idolize or romanticize our dealings with nature. It is when we relate to the Creator God that all creation will take its rightful place.

7.2.1.2. From the Dualistic Habit to the Interconnecting Habit.

In many parts of the world, the ways of human life are organized by the assumption of dualism such as our body and soul, emotion and reason, man

and woman, the black and the white, and the rich and the poor etc. The dualism of division in polarity results in a split culture, which breeds people of split personality. In this culture, we are divided against ourselves (Chung 1991:37-47).

We forget that we all come from the same source of life, God, and all the webs of lives are interconnected. When God created the universe, God liked it. It was beautiful because it was in right relationship, no exploitation, and no division. It had its own integrity. All beings in the earth danced with the rhythm of God.

However, when the dualistic habit came into the world in the name of science, philosophy and religion, we began to objectify others as separate from ourselves. In dualistic thinking, others are the objects one can control as one likes. There is no balance, mutuality and interdependence in this objectification. There is only a wall of separation between competitors. If we are to survive, we must learn to live with not dividing dualism but integrating the interconnectedness of all beings.

7.2.1.3. From Self-realization to God-realization.

The Creator God's most important agenda is to have His children share in His authority on earth. We are created so that we may dominate for His purpose, no matter who we are, we have a part to play in His master plan. When His purpose is not understood, our abuse is inevitable.

Many are the plans in a man's heart, but it is the Lord's purpose that prevails (Proverbs 19:21). We have lots of ambitions, dreams and visions which we would like to become and do. But if we are children of God, we should give priority to His plan and His words and fit our plans into His purpose for our lives (Towns 2003 83-87).

There are people who are doing wonderful things today, but God never told them to do such things just to make money. Our society is built on the erroneous concept that wealth is equal to happiness. There are many rich people who have been a waste of God's time because they never did what they were born to do. God is more concerned about obedience than wealth. He is more interested in the fulfillment of his purpose for our lives than that everybody should think we are great through lining up with His plans.

7.2.2. Motivation for Practical Guidelines.

In order to carry out practical guidelines with a strong motivation and without trial and error, it is necessary to consider some propositions (Cho 1997:95-103). Firstly, we are to recognize and avoid common mental traps that lead to denial, indifference, and inaction. These traps include gloom-and-doom pessimism, blind technological optimism, fatalism, extrapolation to infinity. Secondly, we need to keep our empowering feelings of hope slightly ahead of our immobilizing feelings of despair.

Thirdly, we need to begin to look at our world through the eyes of God to see what is fitting and what is not as we deal with the physical earth around us. Fourthly, we are planning to make it our goal to bring a certain kind of beauty to our surroundings which harmonizes with nature. Recognizing that there is no single correct or best solution to the environmental problems we face is also important.

7.2.2.1. Steward as a Representative of God.

In the Old Testament the steward refers to a servant who takes orders and executes them and/or who can make decisions and manage the affairs according to specific instructions. The owner or master, usually a king or ruler, has trust in him such as Joseph and Daniel introduced in Exodus and Daniel (Jang 2006:60-64).

In the New Testament there are plenty of teaching through numerous nuances of the steward's role. For example, the steward and servant are interchangeably used in the parable of the one put in charge of all the possessions (Luke 12:42). We are called to be stewards of the mysteries of God (2 Cor. 4:2), and stewards of God's grace in the household of God (Eph. 3:1-2). Peter adds an eschatological dimension (1 Pet. 4) reinforcing the fact of the "end of all things" and reminds us that we must be "good stewards of God's varied grace."

There is a wide use of the term in the Bible and it carries a whole range of qualities required for responsible leadership. Unfortunately, the motif has been spiritualized in Christian history and recently reduced to refer to people conducting a few manual chores in the church. If rightly developed, the symbol of steward would restore a powerful role to the community of Jesus Christ that would directly impact the world and make a change.

We are stewards on behalf of God who has entrusted creation and its resources for our wise management. This dynamic biblical metaphor must effectively explode into all our dealings with nature, helping us to move from anthropocentricity to theocentricity, from carelessness to concern, and from indolence into diligence.

In accepting the symbol, we need to be reminded that we are not possessors. With free access to the benefits of rich natural resources, we have gotten accustomed to thinking of ourselves as possessors. Furthermore, materialism and consumerism have driven us to more and more self-centered lives.

However, the steward³⁾ is one who administers resources for the benefits of others (Cho 1997:46-52). The concept of stewardship brings into focus a dual responsibility towards someone else who is the owner and to others who are the beneficiaries. If one is a steward, it is others who must benefit. Israel did not see this, but Christians today must.

7.2.2.2. Individual is Significant.

The early church turned the world of its day upside down. Every advance of the gospel in church history was begun by individuals who caught a vision of God's purposes and followed it.

We can change the world by changing the two people next to us. For everything, big or little, that we decide to do to help sustain the earth, try to convince two others to do the same thing and persuade them in turn to convince two others.

Carrying out this doubling or exponential process, only several times would convince everyone in the world. But it is necessary to have about 5% to 10% of the people in a community, state, or country actively involved in order to bring about change. The national and global environmental movement is nearing this critical mass and needs our help.

3) Most Christians understand that the traditional term of "stewardship" adequately describes the task above-mentioned. But others caution that it can convey the mistaken notions that God is an absentee landlord, and that humans may therefore manage creation in any way that they see it (Cho 1997:46-52).

7.2.2.3. Action is a strong witness.

Before we start trying to convert others, we should change our own living patterns. If we as Christians belong to our Lord God, we should correct our own environmental sins in the light of biblical perspectives and participate in healing the scarred earth. Our actions force people to look at what they are doing. People are most influenced by what we do, not by what we say.

We can also join and financially support local and global environmental organizations to amplify or synergize our efforts. In order to influence officials from a biblical perspective, we can work to elect environmental leaders to public office concerned with environmental policy.

7.2.3. Lifestyle-Change is Needed.

Our civilized society will not find a solution to the environmental problem unless it takes a serious look at its lifestyle. In many parts of the world society is given to instant gratification and consumerism while remaining indifferent to the damage which these cause. Simplicity, moderation and discipline must become part of everyday life, lest all creatures suffer the negative consequences of a few careless human habits.

We have natural rights to use physical goods as resources to satisfy human needs and fulfill our cultural potential, but we also have moral responsibilities to use these resources frugally, fairly, and prudently in respect for all the belongings of God. We really need today spiritual sacrifice to change the current lavish lifestyles.

Therefore, we should "not conform any longer to the pattern of this world, but be transformed by the renewing of our minds. Then we will be able to test and approve what God's will is—his good, pleasing and perfect will" (Rom. 12:2).

7.2.3.1. Living more Simply.

Looking for happiness through the pursuit of material things is considered folly by almost every major religion and philosophy. But it is promoted incessantly by modern advertising that encourages us to buy more

and more things. Too many people spend money to buy things they don't need and want.

So, we need some guidelines from Christian ethics for living more simply on earth. God created on earth that can provide enough to satisfy all the creatures but not every person's greed. Jesus Christ himself showed us how to live the simple life along with the limited carrying capacity of the earth.

In order to become followers of Christ's lifestyle, we should question everything we once believed necessary, until we see what is necessary through God's eyes as the Creator who made and wants to preserve His world. If Christians could begin leading the way in stabilizing our own greed masquerading as need, the earth would begin to have some rest from humanity's voracious appetites. We should keep in mind that when we take more than we need, we are taking from each other, borrowing from the future, and destroying the environment.

7.2.3.2. Voluntary Simplicity.

Over-consumption in the North can have a debilitating impact on countries of the South. Particularly, consumption of non-renewal resources in the North should be significantly reduced by changing their lifestyles and industrial patterns. The member countries of OECD have consumed materials and resources ten times more than the carrying capacity of our planet (Sachs et al. 1998). This means that the people in developing countries should reduce their consumption in order for people in advanced countries to maintain their lavish lifestyles.

Therefore, the affluent people in developed countries should adopt a lifestyle of voluntary simplicity, doing and enjoying more with less by learning to live more simply. Voluntary simplicity begins by asking a series of questions before buying anything: Do I really need this? Can I buy secondhand (re-use)? Is the product produced in an environmentally sustainable manner? Did the workers producing it get fair wages under safe working conditions? Is it easy to repair, upgrade, re-use, and recycle?

Through educational programmes and the dissemination of information, individuals can be encouraged to re-examine their values and to alter their behaviour to accord with Christian environmental ethics. It is very useful to hold a workshop and/or exhibition to change lavish lifestyles and introduce a programme to practice a frugal life in the light of the simple lifestyle of

Jesus Christ.

7.2.3.3. New Managing Style of Non-renewal Resources.

Fossil fuels and minerals are originally non-renewal and depleting resources. However, their usefulness for creation can be extended by avoiding overuse or wasteful use, through scientifically recycling and exploiting them, and by developing renewable substitutes where possible.

In order to use them from generation to generation in accordance with the will of God, minerals development policy must be developed attuned to the carrying capacity of the earth, comprehensively managing human numbers and lifestyles together with technologies and management practices. It can be done without rejecting the many benefits that modern technology has brought, provided that technology also works within those limits. This will be a new approach to the future in accordance with the will of God.

7.3. Practical Guidelines for Churches regarding Biblical Sustainable Development.

The church's task is to take part in and give expression to the present and future Kingdom of Christ. When that Kingdom arrives in its fullness, creation will be set free from its bondage to decay. The church should therefore seek to be truly catholic—characterized by wholeness, fullness and universality. The biblical foundations discussed in sections 7.1 and 7.2 compel us in this direction. If we have built up institutions that have totally consumed our time and energies with matters within churches, or have separationist views of the church that keep us away from being involved in the real world, we must thoroughly repent for having such Christian views and practices, based on misinterpretation of Scripture.

Because God's ministry of love is universal and the church is called to represent the comprehensiveness of concern, environmental responsibility is an inherent part of being the church catholic. It is not an option, but a mandate that must be incorporated into the whole. It is one of the signs of a valid Christian ministry. Since God's ultimate goal is the perfection of just and harmonious relationships (shalom) among all creatures, the church's historical mandate includes the pursuit of justice, peace, and ecological integrity.

Therefore, our churches must again take a fresh look at the Lord of the

church, Jesus Christ and the community that he has formed for himself. Paul writing to the Ephesians says:

God placed all things under his feet and appointed him to be head of everything for the church, which is his body, the fullness of him who fills everything in every way (Ephesians 1:22).

If these words are to be taken seriously, there is a tremendous burden on the community of God's people to fulfill God's purpose for all creation. The church must seek to understand this immense responsibility today. A response to the environmental challenge forms part of this challenge today.

7.3.1. The Church's Status in the Environmental Crisis.

The church is not an inward-looking body committed only to worshipping its Lord. The church's ministries are not some set of arbitrary services, but they are a response to God as our Minister. The apostolic church is the community of Christians always being reformed to be in conformity with the divine mission to consummate liberation and reconciliation for the whole creation (Hessel and Rasmussen 2001:118-202).

In the context of the environmental crisis, the church should be a leader to transform a society through practicing social ministry. The Christian community therefore needs to develop practical policy approaches to the environment and environmental issues in the process of analysis-reflection-practice-feedback based on the Biblical perspective (Hessel 1992: 8-15).

The church must be willing to identify and condemn social and institutionalized evil, especially when it becomes embedded in systems. It should propose solutions which both seek to reform and replace creation-harming institutions and practices. It should be a center to exemplify eco-justice through the practical discipline of all its members.

Social analysis is an inevitable proceeding for Christian social ethics as well as social ministry. Theological reflection without social analysis might be an illusive and romantic undertaking. There is no true love without grasping a real circumstance. Preaching and mission based on social analysis will surely be much more effective and powerful (Watkins 1994:114-144).

A dualistic ministry separating individual piety and social behavior, faith and deed, contemplation and commitment, prayer and action, spirit and body, heaven and earth, horizontal relation and vertical relation, etc. should be replaced with a social ministry which also deals with environmental issues. The reason is that environmental degradation is a problem of social justice related to both human and non-human creation.

7.3.1.1. The Church as a Group in which Relationships are restored.

The Christ who was co-creator with God and the Holy Spirit at the beginning, the one who grieved over the fallenness of human beings is now part of God's plan to restore all that was fallen. Humans who were alienated from the Garden, the symbol of God's perfection, are now able to come back to enjoy restored relationships in the Body of Christ, the new garden to be fully revealed in the coming Kingdom (Jung 2006:162-165).

The community that Jesus Christ brings together after his resurrection is the place where his reconciling work is first demonstrated, although only in part. The church is the place where perfect relationships are anticipated, and a group who constantly look to their Lord who is directing them towards perfect relationships. What this means is that the church must become a model of Christ's work, demonstrating such relationships, even though imperfect. The church should be a catalyst for Christ bringing about change in the world.

There is a great eagerness with which creation groans in expectation of the redemption of the people of God, for in that restoration it will also receive its own restoration. If human beings were responsible for the devastation of creation from their fall, creation will be restored through humans who will one day be released from their guilt when Jesus Christ brings about total redemption. The effects of the redemptive work of Jesus Christ are not limited to the body of Christ, the church, but are realized to the fullest extent of all God's creation in the church.

7.3.1.2. The Church as the Image of God.

The church is the community that must become the image of God in the world today. Taking our discussion back to the original creation account, God gave his image to humans in order that they might act responsibly and

care for his creation. It was not something intended merely to set them higher in an ordered hierarchy⁴⁾ over everything else. A renewed image must therefore restore a sense of this responsibility and enable the people of God to demonstrate greater care and concern towards creation (Lee 2006:11-30).

The church, following its head, must exemplify stewardship and begin to care for creation. The community of the disciples of Christ should have been the first to act responsibly, rather than allowing others to become engaged in commendable expressions of environmental action. Rather than merely continuing blindly in material pursuits of the consumer world, the Christian community could help evolve more appropriate means of enjoying God's creation through innovations that will demonstrate God's creativity. The church must become an agent of change.

The image of God could be seen variously as rationality, creativity and moral responsibility. All these characteristics are those that will make the people of God become more involved in environmental conservation and corrective action.

7.3.1.3. The Church as a Resurrection Community

The resurrection is the demonstration of the finality of Jesus Christ's work of the restoration of humanity to God's purposes. The resurrected Lord has brought newness to their community and a renewed hope for the ultimate redemption of humanity and other creation. The church must proclaim this hope as well as demonstrate it anywhere possible (Kim 2006:236-248).

The church is founded on the reality of the resurrection, and is committed to demonstrating and proclaiming this reality. The resurrection made an inward looking group of disciples into a dynamic body turning the then-known world upside down. Today the church similarly needs to look beyond its boundaries, break from over-spiritual interpretation of salvation, even purely human-centered perspectives, and proclaim the complete

4) Eco-feminists criticize the patriarchal hierarchy of Christianity. They classify human domination structures over creation into the three types as hierarchy, heterarchy, and horarchy structure (Lee 2006:13-17).

message of hope to humanity and all other creation.

The church as the resurrection community has a responsibility to get involved in God's programme of renewal for his creation. This is to be shown in practical demonstrations of stewardship that will make known God's Lordship over creation. If the resurrection is a historic reality, the Church as a historic community must get into action in this world.

7.3.1.4. The Church in Worship and in Witness.

The essence of the gospel is the good news of the coming Commonwealth. It is a summons to action, to shape the historical present, as the Lord's Prayer suggests, on the model of God's New Heaven and New Earth. A valid otherworldliness results in a vital worldliness. The church's ethical orientation is eschatopraxis, doing the final future now (You 2006:351-355).

The church's worship, witness and work are not simply present functions; they have ultimate goal, a telos. The church is called to direct its services and design its communal life to be effective expressions of the ultimate goal of God's ministry and the reign of God. The church's ministries are acts of confidence in and commitment to the ethos and ethic of God's reign, which Jesus Christ embodied and proclaimed. A commitment to ecological integrity on the part of the church must be understood in the context of the church's eschatological orientation. In this context, ecological responsibility is a sign of the church's apostolicity and catholicity. It is not an option, but an inherent mandate for the church's ministry. It has been one of the serious omissions in the history of the church and is now one of the critical reforms necessary for the integrity of the church.

7.3.2. The Church in Action for a Biblical Sustainable Society.

The church should be a pilot plant where people can see the congregations and missions showing the substantial healing that God brought about for the alienation which human rebellion has caused. The pilot plant is that which is constructed to show that the full scale plant will work (Shaeffer 1993:80).

The church should therefore seek to develop as creation-awareness

centers in order to exemplify principles of stewardship for their members and communities, and to express both delight in and care for creation in their worship and celebration. The church should be the laity actively engaged in every social sector for justice, peace, and integrity of creation.

The church must demonstrate that "dominion" can be exercised without being "destructive." This calls for some planned efforts to build up our congregation to be the kind of people God wants us to be in our world today. Some of the efforts need to be long-term attitude and awareness building and thus involve a call for teaching programmes. Others may involve a call for immediate action, and hence will require the mobilization of experts with commitment and skills to get involved.

The immediate responsibility of the church should be to educate its community and prepare them for responsible action based on the biblical perspective. In doing so, the community should aim to produce curricula and programmes which encourage knowledge and the care of creation. And the community as a whole will soon recognize the need for joint action in some pressing fields of environmental concern.

7.3.2.1. Christian Liturgy.

In order to build a biblical sustainable society in accordance with the will of God, the church should firstly affirm that God acts with justice and mercy to redeem all creation and that the earth community encompasses not only human cultures, but all the rest of creation.

Secondly, the church's liturgy should link appreciation of nature to explicit concern and care for nature. With this shift, preaching of the Word, administration of the sacraments, and hymns and prayers of the congregations can become more pertinent to the alleviation of the eco-justice crisis and environmental degradation (Hessel 2001:203).

Thirdly, congregations and church-related organizations should be reoriented to develop real relations of solidarity with particular places, people, and life-forms jeopardized by inappropriate development or environmental injustice, particularly considering God's priority concern for the oppressed, including otherkind as well as humankind.

Fourthly, the church should give explicit attention to the environmental aspects of biblical narratives, ethical teachings, confessions of faith, the sacraments of baptism and holy communion, and hymns and prayers.

Environmental reformation can spread when public worship, spiritual development, lay education, and social action focus on the earth community.

Finally, the church has made a sporadic effort to hold some festival days focusing on caring for the earth during liturgical year such as Arbor Day, Rural Sunday, Nature Sunday, Feast Day of Creation, Earth Day, Environmental Sabbath etc. Particularly, the United Nations declared 5 June in 1972 as World Environmental Day. Many churches subsequently started to hold the Sunday close to 5 June as Environmental Sunday (Conradie and Field 2000:91).

There are several other opportunities in the church year for special celebrations such as St. Francis of Assisi Feast Day (4 October), Earth Day (22 April), World Wetland Day (2 February), World Day of Water (22 March), World Meteorological Day (23 March), World Population Day (11 July), World Habitat Day (5 October) and so forth.

7.3.2.2. Environmental Education.

The church must initiate and support the process of education on the Christian approach to environmental ethics. The church's goal should be the growth of earth-keepers, both in the habits of everyday life, and in the provision of leadership for the care of creation. Some planned lessons must be carefully made available ranging from biblical foundations to suggestions for practical action. Practical tips along with biblical teaching will motivate them into action. Some good case studies can also be used to discuss what biblical principle have been, or could have demonstrated.

In particular, Christian colleges and seminaries should provide theological education to cope with eco-justice themes and environmental issues at the individual, institutional, and social policy level. The education aims should be to explore the relationships between ecology, justice, and faith, to foster a theological vision of creation care that affirms the intrinsic worth of all creation, to give visibility to a credible cosmology and a coherent ethical framework for our common future, to strengthen Christian leadership in environmental thought and action, and to develop requisite skills of ministry among clergy and laity (Hessel 2001:200-222).

Theological learning can be enhanced as students participate in the practice of a small learning community that gathers weekly, incorporating worship, education, field trips, service, and recreation around a generative

theme related to eco-justice. The education can effectively be carried out through an internet site.

Education should help students "make the leap from I know" to "I care to do something," understanding and evaluating the environmental worldview and seeing this as a lifelong process. Evaluating and perhaps changing the environmental worldview can set off a cultural mindquake because it involves examining many of the basic beliefs. Once we change our worldview, it no longer makes sense for us to do things in the old ways. If enough people do this and put their beliefs into action, then tremendous cultural change can take place.

Therefore, it is necessary to take the time to escape the cultural and technical body armor we use to insulate ourselves from nature and to experience nature directly. Through kindling a sense of awe, wonder, mystery, and humility by standing under the stars, sitting in a forest, experiencing a stream, lake, coral reef, other parts of nature, we might try to sense how they are a part of us and we are a part of them as interdependent participants in the earth (Miller Jr 2004:40).

7.3.2.3. Joint Activities.

The church should willingly hold a dialogue with all who are concerned with preserving and enhancing our environment. We can get alongside people of other faiths and work together for environmental activities. We should pray that the joint activities may provide a positive contribution towards achieving the goals which we share.

Particularly, where the Christian community is a minority, this will be an excellent way of building bridges into the community. There may be projects that concern injustice to the poor, or actions that cause environmental damage from mining activities. The church could take the lead, but get the community behind them. Such activities will raise the profile of Christian witness particularly in countries where they are looked down upon.

7.4. Initiatives for Biblical Sustainable Development regarding Global Economic System.

We live in a moment of extreme jeopardy. Cumulative human activity threatens destruction not only of regional eco-systems but the planetary

ecology as a whole. The earth warming from CO₂ emissions of fossil fuels poses grave danger to the capacity of all creation to survive and flourish. We are further threatened by environmental degradation from mining activities and nuclear plants. All creation seems broken, wounded and hurt.

It is shocking and frightening for us that human beings have been able to threaten the foundation of life on our planet in only about 300 years of industrialization among the long historic records of the earth. This crisis has deep roots in human greed, exploitation and economic systems which deny the elemental truth that every economic and social system is always a sub-system of the eco-system and is totally dependent on it.

The industrial economic systems treat nature simply as natural resources and abuse it for profit. The future foreshadowed by the present environmental crisis has socially and ecologically cast a gloom over the future of massive suffering of human beings and other creation. The destruction of the environment cries out for urgent repentance and conversion.

Our God is political, blessing the peacemakers, intervening in the affairs of governments and nations, and liberating slaves from the shackles of pharaoh. To be in communion with God is to struggle to deliver the community of earth from all manner of evil—private and public, personal and social, cultural and ecological, spiritual and material. The sovereign God bans all boundaries of benevolence.

Every social and political issue that affects biospheric welfare—whether it be nuclear waste, resource deletion, starvation, pollution from mining activities, racism or extinction—is simultaneously a moral and spiritual concern. That is a challenge of love to the churches in the world. If we are to deal with social causes and not merely individual symptoms, these issues must be items on the agenda of truly catholic, evangelical, and reformed churches.

This challenges the church to study the situation and consider social change. We call for a reordering of personal and corporate lifestyles, relationships and the overall economic system. We are beckoned to rediscover a biblical vision and a new understanding of ourselves and other creation. Accordingly, Churches and Christians should actively participate in policy-making and policy-performance in the specific environmental fields through the influence they bring to bear on the policy issues which comes from Christian insights and biblical perspectives.

7.4.1. Economic Growth in Advanced Countries.

Economic growth is a major factor in destroying the ecosystems on which the well-being of social and economic systems ultimately depends. Unrestrained production and consumption are key factors in the excessive exploitation and toxication of the renewable and non-renewable gifts of nature.

So, there is only one conclusion to be made: the church must have a initiative to curb the economic growth and refrain from extravagant consumption in industrialized countries, while it encourages developing countries to carry out biblical sustainable development to improve the standard of living through promoting transfer of technology working within the limited capacity of the earth.

It is fully accepted that this is a very difficult task to practice this agenda. It is not pleasant to plan a society without economic growth in this world. However, we should look up to the cross of Jesus Christ for us to alleviate environmental degradation and carry out environmental protection in the environmental crisis.

They should also ponder on whether the Christian church has slowly lost its faithful power and holy glory in America and Europe since the middle of 1960s. What are the fundamental reasons for losing them from advanced countries at present? With praying to God to get responsive treatment, would they would volunteer to persuade their governments and citizens to curb their economic growth and refrain from extravagant consumption in their daily lives?

7.4.2. Nuclear Plants without Considering Future Generations.

It is often remarked that establishing a nuclear plant is like building a luxury house without a toilet. For future generations it is a proper treatment to resolute a nuclear power moratorium until developing a perfect technology and/or method to cope with the nuclear waste as discussed in section 3.2. Instead of establishing new nuclear plants, it would be better to concentrate efforts into developing alternative energy resources and

improving the efficiency of the present energy resources.

We should do nothing that could jeopardize the opportunity for future generations and deprive their ecological conditions in order to maintain our current lavish lifestyles. In order to do this, it would be necessary to ban the establishment of further nuclear power plants.

We should keep in mind that nuclear plant always embraces the persisting threat of nuclear accidents, and brings out the unresolved problem of radioactive waste disposal. Additionally, it encourages people to use energy consumption more and more to compensate for the huge cost of its construction, and makes sources for nuclear weapons proliferation associated with continued use of nuclear power.

7.4.3. Mineral Development beyond Planetary Carrying Capacity.

The high quality reserves of mineral resources are disappearing. the extraction of low-graded ores is more energy intensive, thus increasing costs and prices with particularly reverse effects on the poor. Moreover, with increasing scarcity, economic pressures will arise to explore and withdraw minerals from environmentally sensitive areas (Nash 1991:41).

The central point is that the present generation is living beyond planetary carrying capacity. The maximization of current benefits for a minority of the present generation is being achieved by the reduction of potential benefits for future generations. It is therefore necessary to set up a deleting tax of non-renewal natural resources to curb the reckless overdevelopment of mineral resources for future generations.

If humans have responsibilities for future generations, we need an economic system that stresses the virtues of frugality, thinking of the limited carrying capacity of the earth. It goes without saying that the church should counsel human humility and frugality in the light of the ultimate mystery, natural limitation, and biological connection of all creatures on the earth.

7.4.4. Legal Scheme for Mining Industry.

All mining activities are subject to regulations identified in the mining laws of each country. The laws are generally giving preferential treatment

for mining activities over other uses of the land, including agriculture, forestry, and urban development etc. They are firstly made from a technical mining standpoint for the mining industry, but without a comprehensive consideration of the organic and environmental system.

They have few records of collaboration with instructions for environmental protection. This can lead to a decreased environmental oversight over mining activities. Such a legal scheme would directly contradict the organic system of the earth and the purpose of why God created mineral resources.

It is therefore necessary to establish an environmental regulation, administration and monitoring for mining activities in the mining law. According to increasing environmental impacts from mining activities, it is a recent legal trend to enact some provisions for environmental impact assessment (EIA) and environmental protection programme (EPP) in the mining law. However, they are a minimum criteria for getting mining right for a certain mining area.

So, all the churches in the world should try to enact provisions for clear production (CP), pollution prevention and burden of proof in the mining context for biblical sustainable development as discussed in 6.5.2. The provision for a sabbatical year should additionally be enacted to regularly evaluate the environmental impact from mining activities for ecological integrity as discussed in 7.4.12.

7.4.5. Climate Change from GHGs Emissions.

The climate change is just indicator of the threats we face as a rigorous alarm from the Creator, God of grace. It is obviously our urgent duty to heal the climate change caused by human beings.

First of all, it is necessary for us to make it clear that while the earth is killing in the environmental degradation, we are indulging ourselves in overdevelopment and overconsumption so much as discussed in 3.2. Secondly, we should recognize that if we do not act to recover it, the true cost of our failure will be borne by succeeding generations. This is the moral challenge of our generation. We should therefore set up a road-map for a more secure climate future. We cannot rob our children of their future.

Ironically, climate change accompanied with the disasters is more

unfavourable to the socio-economically weak, who are usually less responsible for the advent of climate change and have less ability to cope with the impact of the climate change. Particularly, most of Africa would be hit the hardest if climate change continues on its current course. So, it is necessary to set up an international supporting system for the poor and Africa.

However, Africa's place in the climate agenda was largely neglected in the Copenhagen Conference held in December 2009, even though Africa is central to the global environmental crisis in two important ways, namely possessing the vast natural heritage for the most potent solutions to climate change, but becoming the first victim of major climate disturbances. Sub-Saharan carbon emissions, estimated at only 3% to 4% of the global man-made emissions, are deemed of little interest, even though the responsibility of industrialized countries and emerging economies in the battle against carbon emissions is now well known (Sung 2009:7).

We should therefore ask for an effective, comprehensive and equitable international agreement based on the Will of God to improve the Kyoto Protocol on carbon emissions expiring in 2012. However, no sign of a deal has emerged amid the wide gap between advanced and developing countries over how much the latter should contribute and how or whether their voluntary efforts should be verified.

The accord in the Copenhagen climate talks set a target of limiting global warming to 2 degrees Celsius above pre-industrial times. However, it does not say how this would be accomplished. A \$100 billion in aid annually starting in 2020 to help poor countries deal with climate change is included in the accord. But noticeably absent is where the money will come from (Choi 2009:5).

In order to make a real difference, the only way is to take action together based on loving each other. Instead of saying "you first," we should start by saying "me first."

7.4.6. Free Market System and Social Responsibility.

The free market system places overwhelming emphasis on economic growth or development through free competition. Being based on the belief that the pursuit of private interests automatically leads to an improvement of public interests, the free market system justifies the free pursuit of

private interests without any qualm about the welfare of the whole society. According to the free trade ideology, 'the invisible hand' works to harmonize private interests with public interests.

The self-regulation and market competition are indispensably valuable for economic enterprises in a free market system. But they are not sufficient to provide adequate environmental protection. Because the probability is too high that their economically motivated behaviors will lead to environmental degradations.

In fact, the pressures of competition, which encourage cost-cutting to undersell competitors and maximize profits in market economics, can function as incentives for environmental harm in order to increase competitive advantages.

Considering the severity of the environmental crisis and the role of many economic enterprises in contributing to that crisis, the persistent appeals for the principle of deregulation or minimal regulation of industry is strangely discordant with reality. These appeals are rooted in classical or neoclassical economic theories that regard economic institutions as almost independent of the social matrix of accountability.

With these views, environmental regulations allegedly hinder business in pursuing their objectives. That is none of their business, unless economic incentives are available. The tasks of paying the externalities belong to other social sectors.

In fact, most economic enterprises have enjoyed the privileges to purchase various kinds of materials such as energy, minerals, water, timber etc. at far below market costs. So, the social responsibility of economic enterprises is widely proclaimed today, particularly to control the abuses of multinational corporations in a context of global interdependence.

Economic enterprises can be evaluated economically on the basis of their productivity and profitability, but they should also be evaluated socially and ecologically on the basis of their contributions and harms to the well-being of human and non-human creation in interdependent relationships.

7.4.7. Social Responsibility of Multinational Corporation.

There has been a lot of criticisms about the negligence and wrongdoing of multinational corporations to sacrifice the lives or health of people or the

integrity of environment for the sake of their profits. Particularly in the mining fields through their mobility and flexibility of structure and organization, the examples are discussed in 2.3.2.

Each state is entitled to regulate some aspects of the multinational corporations incorporated or operating within its territory. But many states do not have the resources or political will to do so effectively, giving rise to differences in social and environmental standards between states.

The differences are exploited by multinational corporations for their commercial advantages, investing in the regions in which production costs are lowest because of low regulatory standards and expectations. In return, competition for internal investment is said to put further downward pressure on regulatory standards in those countries, especially the poorer countries of the world, struggling to achieve economic growth.

The international "corporate social responsibility (CSR)" movement has developed in response to these perceived gaps in the regulatory systems. The CSR movement has been described as one of the most important social movements of our time in environmental crisis. As a result of the movement, there has been during the past few years an extraordinary proliferation of "codes of conduct for multinational corporations." But they all struggle to define what corporate social responsibility (CSR) means in practice.

Historically, the role of international law in relation to the multinational corporations has primarily been to define the rights and obligations of states with respect to international investment issues. But there are many possibilities to regulate multinational corporations, despite its fundamental state-centeredness. International law is not a solution itself, but a set of tools.

While international law has its limitations, it is also capable of supporting new regulatory opportunities that have the potential to improve the welfare of people and environments affected by multinational activities, particularly in less developed countries. These new opportunities are emerging as a consequence of developments at two levels: first the growing willingness of home states to consider strategies to regulate the performance of multinational corporations beyond national borders and, second, the intensification of efforts at international level to develop global ethical standards for their business (Zerk 2006:309-310).

It is a time for all the churches with about 2,070 million Christians in

about 1,000 ethnic groups in the world to participate in the CSR movement (Siewert and Valdez 1997:31). The CSR can no longer be dismissed as a passing trend. New international institutions should emerge to promote the CSR standard of multinational corporations. There is much we can do to regulate the multinational corporations, if we work together with our Lord God of justice, reflecting wrongdoing records of the CSR. Multinational corporations must have responsibilities at least as good corporate citizens in the context of the environmental crisis, independent of the regulatory framework within which they operate.

7.4.8. Internalizing of External Costs.

All the churches in the world should strongly ask their governments to deal with the problem of harmful external costs in several ways to build a biblical sustainable society as soon as possible. They can levy taxes, pass laws and develop regulations, provide subsidies, or use other strategies that encourage or force producers to include all or most of these costs in the market prices of their economic goods and services (Miller 2004:25).

Internalizing the external costs of pollution and environmental degradation has some important benefits. It would firstly make preventing pollution more profitable than cleaning it up. Secondly, waste reduction, recycling and re-use would be more profitable than burying or burning most of the waste we produce. Thirdly, it provides consumers with information needed to make informed economic decisions about the effects of their purchases and lifestyles on the planet's support systems and on human health.

When external costs are internalized, the market prices for most goods and services would rise. However, the total price people pay would be about the same because the hidden external costs related to each product would be included in the market price. Governments must reduce taxes on income, payroll and profits and withdraw subsidies formerly used to hide and pay for these external costs. Otherwise, consumers will face higher market prices without tax relief.

Finally, all the costs for goods and services would be less, because internalizing the external costs encourages producers to cut costs by inventing more resource-efficient and less-polluting methods of production and to offer more environmentally beneficial products. If a shift to full-cost pricing took place over several decades, most current environmentally

harmful businesses would have time to transform themselves into profitable environmentally beneficial business.

7.4.9. Economic Injustice

The world's actual and potential resources created by God are sufficient to supply the provisions for the basic and creative needs of all the creatures in the present and future. If justice prevails by the will of God, the biblical sustainable development can be practiced. So, over-possession of necessities is an issue of justice in an interdependent creation and resource-limited planet.

The disparities in income and resources are fundamental features in the modern world. While a minority of less than 20% of the world's population lives in comfort and luxury, consuming and wasting 73% of the world's goods, another minority lives in chronic and desperate poverty. Most environmentalists agree that it would be ecologically disastrous for the rest of the world to reach the current standard of living in the United States (Jeong 2007:67).

Economic justice demands economic systems that supply the material conditions for human dignity and social participation for all, within the limits of the earth's carrying capacity and the integrity of its ecosystems. Global economic justice is an essential good in itself, but it is also an essential condition of ecological integrity (Jeong 2007:85).

On a planet with natural limits, the policy reducing poverty through economic growth is no longer a convincing alternative. The straight policy should be to restrict economic growth in affluent nations in order to provide the materials for essential economic development in poor countries. It does not mean sharing in poverty, but it does mean sharing in solidarity to eliminate poverty, following the sacrifice and love of Jesus Christ.

From a Christian perspective of global solidarity and equality of human value, this situation implies limits to growth for the affluent and economic sharing with the poor.

7.4.10. Population and Consumption.

As long as the population in absolute numbers remains within the earth's

carrying capacity, the actual and potential resources of the earth are sufficient to provide sustainable and adequate goods for all the creatures.

Poverty is not only about overpopulation, but also about the inequitable distribution of resources within and among nations. Current population problems must be understood in relation to patterns of consumption (per capita consumption) and available resources.

In this context, population progression is not only a problem for the third world, but also a problem for the first world. Because the average additional person in affluent nations consumes far more and places greater stress on the world's natural resources. In terms of per capita resource consumption, the United States is probably the most overpopulated nation in the world, leading to excessive exploitation of natural resources.

Therefore, affluent nations have to obey a moral demand for reduced consumption and equitable distribution. There is increasing evidence that the rest of the world cannot afford North American consumption. The United States and other rich nations have some major rethinking to do about morally balancing their reproduction and consumption policies.

The rich must live more simply so that the poor may simply live. The first world should reduce its production, consumption and accumulation in order for the third world to be able to have sufficient production, consumption and accumulation (Birch and Rasmussen 1978:33).

7.4.11. Environmental Justice (Eco-Justice).

The life of Jesus Christ is a clear demonstration of the reign of our Creator of eco-justice. The heart of a harmonious relationship between humans and non-humans on the earth, whether individually, communities or internationally, is the introduction of eco-justice in our daily lives.

The biblical concept of eco-justice recognizes the need for healthy relationships in creation as a whole. This way of viewing eco-justice helps us understand the linkage between poverty, powerlessness, social conflict and environmental degradation. Eco-justice is truly indivisible, and not only a matter of theological conviction but of practice.

Human responsibility requires that we recognize the character of the crisis in our midst: the social justice crisis and the environmental crisis. Pursuing eco-justice requires us to learn new ways of paying attention to all creation. A new vision will integrate our interdependent ecological,

social, economic, political and spiritual needs.

Social justice for all people and eco-justice for all creation must go together, because social justice cannot happen apart from a healthy environment and a sustainable environment will not come about without eco-justice.

Satisfying the demands of eco-justice will be extremely difficult and traumatic. We cannot achieve a different order without a period of wrenching costly change. Our challenge is to find tolerable solutions to the economic-ecology dilemma.

7.4.12. Sabbatical Year for Ecological Integrity.

The institution of sabbath, the sabbatical year and the jubilee year provide a clear vision on economic and ecological reconciliation, social restoration and personal renewal. Sabbath reminds us that time is not just a commodity, but has a quality of holiness, which resist an impulse to control, command and oppress.

In the concepts of the sabbatical and jubilee year, economic effectiveness in the use of scarce resources is joined to environmental stewardship, law to mercy and economic order to eco-justice. We should contemplate and revitalize the biblical concept of sabbath, sabbatical and jubilee year to bring about a global liberation of creation within fifty years.

7.4.13. Global Network for International Alliance.

All nations of the world are interdependent. No nation is economically self-sufficient. No life-supporting systems on the earth respect political boundaries. All nations of the world must act in accord with a biblical sustainable society. It is fallacious to think that either the developed or the developing countries will be able to proceed towards biblical sustainable development without international cooperation in the context of the environmental crisis.

We should act together in defence of creation, and encourage the participation of people against the powers of oppression and destruction. It is therefore necessary to build a network of churches and Christians to facilitate exchange, cooperation, and appropriate collective action in the following fields based on the biblical perspective:

(1) An efficiency revolution that involves not wasting matter and energy resources.

(2) A solar-hydrogen revolution based on decreasing our dependence on carbon-based nonrenewable fossil fuels and increasing our dependence on forms of renewable solar energy and producing hydrogen fuel from water.

(3) A pollution prevention revolution that reduces environmental degradation from harmful chemicals, avoiding their release into the environment by recycling or re-using them within industrial processes, trying to find less polluting substitutes or not producing them at all.

(4) A biodiversity protection revolution that devotes to protecting and sustaining genes, species, natural systems, and chemical and biological processes that make up the earth's biodiversity.

(5) A sufficiency revolution that involves trying to meet the basic needs of all people on the planet and asking how many material things we really need to have a decent and meaningful life within the carrying capacity of the earth.

(6) A demographic revolution based on reducing fertility to bring the size and growth rate of the human population into balance with the earth's ability to support humans and other creatures without serious environmental degradation.

(7) An economic and political revolution in which we use economic systems to reward environmentally beneficial behavior and discourage environmentally harmful behavior.

Chapter VIII: Evaluation of Environmental Initiatives of Korean Churches regarding Biblical Sustainable Development of Energy and Mineral Resources.

The focus of this thesis is on Korea and in particular Korean churches to help prevent environmental impacts from mining activities and nuclear plants through applying a theological framework. But it deals with merely a microcosm of what is happening for securing energy and mineral resources throughout the world as discussed in chapter 2 and 3. We cannot imagine one day of our lives without energy and mineral resources in current civilized societies, just as we cannot exist without pure blood.

Mining cannot be sustainable because the deposit is finite and will eventually be exhausted. Furthermore, the environmental impact from mining activities and nuclear power plants is a major factor contributing to the current environmental crisis. The environmental risks transcend borders. It could even come to jeopardize international peace and security.

Therefore, there is a pressing need in the new century to adopt sustainable energy and mineral options, especially in the face of mounting evidence of global warming linked to fossil fuel use, environmental impact from mining activities and the persisting threat of nuclear accidents, unresolved problems of radioactive waste disposal, and the specter of nuclear weapons proliferation associated with continued use of nuclear power.

In order to eventually evaluate the environmental initiatives of Korean churches and suggest practical guidelines for them concerning the environmental impact from mining activities and nuclear plants, this thesis therefore carried out a factual analysis of energy and mineral resources such as characteristics of energy and mineral resources in chapter 2, the environmental impact from mining activities and nuclear plants in the world and in Korea in chapter 3 and 4 and the environmental involvement of Korean churches in chapter 5. It moved on developing a new concept of sustainable development of energy and mineral resources in accordance with the will of God and biblical sustainable development in the mining context in chapter 6 and finally suggested a theological framework for biblical sustainable development of energy and mineral resources in chapter 7.

South Korea has accomplished a very compressed form of economic growth over the past fifty years. As a result, she has consumed a very high amount of energy and mineral resources to the point that the government is

required to look elsewhere and make deals with other nations in order to compensate for her poor endowment of natural resources. But the rapid economic growth has been accompanied by rapid ecological dilapidation and environmental pollution. The environment was sacrificed by pursuing more economic growth through industrialization as discussed in chapter 4.

However, Korean churches have no an honorable position for the environmental impact from mining activities and nuclear plants. Because most of them have been unconcerned with the serious environmental deterioration as a result of the energy and mineral development projects. They have generally executed their pastoral duties with an indifferent attitude to political and economic programs and structures. They would think that environmental issues are only for government and specialized non-government organizations, not for Christian churches as discussed in chapter 5.

Thus Paul's words to the Romans (12:1-2) remain basic to all actions taken by Christians: "I implore you by God's mercy to offer your very selves to him: a living sacrifice, dedicated and fit for his acceptance, the worship offered by mind and heart. Conform no longer to the pattern of this present world, but be transformed by the renewal of your minds. Then you will be able to discern the will of God, and to know what is good, acceptable and perfect."

Therefore, In this chapter I would firstly like to evaluate the environmental initiatives of the Korean churches in order to clearly identify the challenging tasks which the Korean churches and the Government are now facing. And then I will suggest practical guidelines for the Korean churches based on the theological framework for biblical sustainable development in accordance with the will of God.

Finally, directions for the Korean Government will be suggested through evaluating its energy regime and mining policy in order to offer practical targets for their environmental initiatives in accordance with the will of God.

8.1. Evaluation of Environmental Initiatives of Korean Churches.

The church is a particular kind of caring community, of which the essence is found in the functions of ministry. The ministries are not some set of arbitrary services, but they are a response to the Creator God. The church should experience divine ministries and sense divine beckoning to go

and do likewise to image God (Yang and Son 1998:86).

The divine ministry is a mission of love that creates, sustains, and saves all creation. The divine ministry offers physical sustenance for all creation, comforts the afflicted, promises redemption, generates meaning, builds communion, pursues peace, reconciles the alienated, liberates the oppressed, challenges the oppressors, demands the right, and right the wrong (Yang and Son 1998:88).

From this perspective, the church is called to direct its services and design its communal life for confidence in and commitment to the ethos and ethic of God's Reign, the ultimate goal of God. It is called to be a sign of God's Reign, making its vision visible, reflecting Christ's new creation in personal, social and ecclesiastical transformations. God made the church to act and shape the historical present, as the Lord's Prayer suggests, on the model of God's New Heaven and New Earth (Yang and Son 1998:91-92).

In this context, environmental concern is not an optional matter but an inherent one for the Christian church. The significant environmental implications should be embraced in the proclamations and actions of the church, because environmental integrity is a prominent part of the church's mission as discussed in 7.3.1.

However, that is one of the serious omissions in the history of the Korean church. It is one of the critical matters that the Korean church should overcome as soon as possible through reforming its bad theological habits and ecclesiastical traditions (Koo 2005:12-15).

8.1.1. Bad Theological Habits of Korean Churches.

Most of Korean churches need to acknowledge and abandon several bad theological habits that has malformed the church's understanding and relationship with nature. It is an urgent task for Korean churches to overcome the following alienating factors to recover their understanding of creation with the emphasis on ecological integrity (as mentioned in 7.1.1) in the context of the environmental crisis through decontaminating inherited Christian doctrine and liturgy and reconstructing faith and worship patterns.

8.1.1.1. A Doctrine Separating God from Nature.

The scriptures reveal the essential truth that God is the Creator of all

creation (Gen. 1:1) and the Spirit of God continually sustains and renews the earth (Ps. 104:30). The Holy Spirit manifests God's energy for life present in all things and reminds us of the dependence of all things on our Lord God as discussed in 7.1.1.3 and 7.1.1.4.

However, most of the Korean churches adhere to a doctrine separating God from nature. God is understood to be revealed primarily in human historical events rather than in natural life. God's transcendence is emphasized much more than God's immanence or living presence in creation. They strengthen this habit by the way in which they interpret the sovereignty of God, the authority of Scripture, and the human deputyship to dominate nature (Koo 2005:24-27).

8.1.1.2. A Doctrine Separating Humanity from Nature.

Humans are by nature ecological and political animals, inseparably bound together in a web of biological and communal relationships. But they are enhanced in the earth village due to the development of science and technology, as mentioned in 7.1.1.2.

The non-human world is a sphere in which God reveals his presence and communicates with humans. The Spirit is present throughout creation. All the creatures are God's good creation and have their own value and dignity in and of themselves, apart from any usefulness to humans. All God's creatures are worthy of moral considerations, as a sign of the worthiness imparted by God as an expression of the worship of God, as discussed in 7.1.1.4.

However, Korean churches are used to separating humanity from nature. Humanity alone is said to be made "in the image of God" (Gen. 1:28), set apart from all other kinds, given domination. This translates into devastating the harmonized relationship between humans and nature, as exemplified currently in mining activities and nuclear power plants, which perpetuates human arrogance toward nature (Koo 2005:32-35).

8.1.1.3. A Doctrine Separating Redemption from Creation.

The logic of the doctrine of creation does not permit a nature-grace dichotomy. Grace is not only the forgiveness of sins but givenness of life, a double gratuity of redemption and creation (Sitter 1972:74-78) as discussed

in 7.1.2.3. However, Korean churches are used to restricting in practice the scope of grace to matters of personal salvation, and the means of grace (world and sacraments) to ecclesiastical functions.

There is also an increasing separation of redemption from creation. Nature has become a mere backdrop for the drama of human salvation. Theology, preaching, liturgy, and rituals focus on the doctrine of personal redemption rather than the fulfillment of creation. This is the general trend in the worship and pastoral activities of the Korean churches today. These typical restrictions distort the doctrine of creation (Kim_(b) 2006:107-108).

8.1.1.4. God locked in the Church.

The gospel relates to all creatures and it applies in all situations—personal, ecclesial, social, and ecological. The gospel rejects all forms of moral parochialism. Christ cannot be compartmentalized and locked in some closet as discussed in 7.1.3.2.

The Christian church ought not to make any theologically unacceptable distinctions between personal rebirth and social rebirth. It is called to proclaim and live the whole gospel in loyalty to the Christ who seeks to minister through all humanity and in all contexts to the needs of all creatures.

However, Korean churches are used to drawing a distinction between a personal and social gospel and argue that the role of the church is the conversion of individuals rather than the reformation of society. They are used to implying by their rhetoric and behavior not only that the arena of politics is irrelevant to the concerns of faith but also that the gospel is irrelevant to the decisions of politics (Lee 1993:378-379).

Such an insulation of Christianity from politics is theologically indefensible. It is a functional denial of the sovereignty of God in the church and the ubiquitous involvement of the Holy Spirit. God is central in individual spiritual lives, but is also sovereign over the social, economic, and political realms. This God comforts the afflicted, hears prayers, converts minds, and compels proclamation.

8.1.2. Bad Ecclesiastical Traditions of Korean Churches.

Korean churches made a great contribution to the independence

movement against the colonial regime of Japan and the democratic movement against the military government in Korean modern history. It were Christians who took the lead in the movements for Korean independence and democracy. That is an important motivation for promoting Korean churches through their social credibility from 1960s to 1980s.

However, it is a plain fact that the members of the protestant churches have been decreasing since the first centennial memorial celebration in 1984, while the Catholic church has been increasing strongly since the second centennial celebration in 1984. The reason is well demonstrated by their memorial projects. The Presbyterian churches (Habdong), the greatest denomination of Korean protestant churches, built a centennial memorial building, while the Catholic church supported medical operations for 200 blind people (Noh 1996: 52-73).

There are some bad ecclesiastical habits in Korean protestant churches that should be renewed through criticising themselves. Some church experts indicate that the Korean churches should get rid of such bad ecclesiastical traditions as soon as possible to promote their churches again. They are generally identified as a church-centered ministry, patriarchal and hierarchical traditions and quantitative church growth without social responsibility (Kang and Hendrks 2004:250-268).

8.1.2.1. Church-centered Ministry.

The Korean church has been so influenced by the dichotomous thought of Western Christendom that it has become an encapsulated community isolated from its society (Myers 1993:21-46) as discussed in 7.1.4. The church-centered ministry has brought about either the loss of public confidence or an indifferent and critical attitude of society towards Protestantism. This is nowadays confirmed as a primary factor which has prevented Korean Protestant churches from participating in social development and environmental movements.

In Korea social services can be divided into two areas: charity service and structural service. The former refers to the individual or collective activity of charity work in schools, social care, medical aid and relief work. The latter denotes the input to solve society's fundamental problems by reforming social structures. The area of structural service has been exclusively the ministry of the liberal group because the conservative group,

which comprises of the majority within the Korean church, has deliberately neglected this area (Ro and Nelson 1995:18-19).

Actually both groups have failed to function properly in this area because they lack strong convictions. Even though Protestants have participated in various forms of charity service, it is undeniable that charity service has been recognized as a secondary ministry, for which the church allocates only a small portion (4%) of its annual budget. In other words, the Korean church has also failed to function positively in this area because of their preoccupation in other areas such as evangelism (53%) and worship (33.8%) (Lee 1993:378). As a result, the Korean church has lost much of its credibility in Korean society.

However, instead of trying to participate in social initiatives to recover their social responsibility, most of their endeavors to cope with the crisis have concentrated on developing leadership skills, programs, and methodology through which they believe it will be able once again to experience numerical growth.

8.1.2.2. Male-dominated Church.

Korean churches have a patriarchal tradition accepting domination of men over women inherited from Confucian culture. Man and technology could be identified with the first term in each of the polarities of reason and emotion, mind and body, objectivity and subjectivity, and control and nurture. Women and nature were associated with the second term in each case (Lee 2003:33-51).

Korean eco-feminists have responded effectively with the critique that the oppression of women and the oppression of nature are rooted in a common set of hierarchical, dualistic, and patriarchal assumptions in Korean churches. Their criticism is that the male-centered patriarchal culture has brought violence, victimization, and domination over women and nature. It has brought violence in the form of capitalism, militarism, nuclear weapons and colonialism for natural resources (Jeong 2002:192-196).

In particular, they argue that Korean women have been rendered voiceless by a male-dominated society. They did not have a way of effectively expressing themselves either politically, economically and/or religiously. They still have a small chance of attaining an official position in the church. Their proper place is still considered to be the home. Christian

women often still believe themselves to have very little status, but God uses them in His church.

8.1.2.3. Numerical Growth-oriented Church.

The church is God's vehicle through which He reaches out to the world to establish His Kingdom as discussed in 7.3.1. However, the Korean church has failed to fulfill its social responsibility in comparison with its unprecedented growth from 1960s to 1980s. They have not played an exemplary role regarding social responsibility and environmental initiatives (Lee 2003:73-75).

Some church experts make the diagnosis that Korean churches have gotten so seriously growth-sick that they often disregard even ministry ethics in the effort to increase their members. They further criticize that it seems that their faith in Jesus Christ is one thing and their daily lives are another (Kim_(b) 2006 219-220).

To justify their attitudes, some pastors appeal to the fact that the society itself has been heavily influenced by materialism. Others recognize and criticise the reality of secularized leadership in the Korean church and acknowledge that it has been influenced by materialism, individualism, and successionism as discussed in 5.3.1.

The secularized leadership can be recognized in various forms such as megaism, successionism, materialism and numeralism. Outsiders critically point out that Korean church leadership has been secularized by being too focused on numerical growth and the construction of huge church buildings. This has caused disappointment to church members and has been an obstacle to outsiders (Kang and Hendrks 2004:250-268).

According to the statistics of the Korean Gallup Survey in 2005, it was evaluated that the Korean Protestant church is at the end of its growth rope from the 1990s due to a lack of social responsibility. The Protestant church accounts for 45.5% of the persons convert into other faiths (religions), while the Catholic church and Buddhism account for 14.9% and 24.4% respectively. Most of them are young persons disappointed with the non-ethicity manifested in various forms such as numeralism, successionism, materialism, megaism and authoritarianism in the Protestant church (Kim_(b) 2006:216-220).

The Protestant churches have generally enjoyed quantitative growth,

keeping pace with the rapid economic growth. But they have not taken note of social responsibility particularly regarding environmental degradation from nuclear plants and mining activities. They have not spelt out in clear terms the will of the Creator God to be in harmony with all humans and non-human beings as discussed in 7.1.1.4.

8.1.3. Poor Environmental Activities of Korean Churches.

Korean churches have abundant human and physical resources and wide networks to effectively perform environmental initiatives in comparison with secular environmental organizations. There are various kinds of ecclesial entities that can be involved in environmental activities such as individual churches, regional church associations, denominations, and special environmental organizations etc.

However, we have no alternative but to indicate their poor environmental activities, in the light that their members account for about 25% of the population as shown in table 5.1. Particularly, when it comes to coping with environmental pollutions from mining activities and nuclear plants, there is almost no involvement to evaluate except for voluntarily participating in the oil-removing activities in the west seacoast polluted by the oil spill disaster in December 2007 as discussed in 5.5. There is only the Environmental Institute for Taebaek Mining Region (EITM) as a Christian environmental group independently dealing with the mining pollution in Taebaek region.

8.1.3.1. Sporadic Reactive Motivation for Environmental Initiatives.

Most of Korean Christian organizations are nominally starting to change their attitudes and lifestyles to promote the integrity of creation by the will of God. But their initiatives are sporadic and reactive to special events, not systematic and consistent in practicing biblical sustainable development in accordance with will of God.

They only sporadically participated in the movements against the establishment of nuclear plants, nuclear waste place, dams and waste incineration places pursued by the secular environmental organizations. Their programs are not integrated into their daily lives and their actions are still not mass-based, so that they cannot be mobilized into community movements (You 2006:378-379).

Korean churches still do not supply their congregations with faith-based motivations which are clearly different from the secular motivations of the environmental organizations. This is evidence that they have not developed a systematic approach to the environmental degradations which inter-links all creation and penetrates into our daily lives (Kim and Jang 2007:21-22).

It is therefore necessary to reorient their faith and ethics, focusing on relations and community, not only on individuals and objects, in accordance with the new story of the earth and cosmos embodying forth the power, wisdom and love of God (Hessel 2001:202). They should read and interpret the Bible with more alertness to nature, reflecting on real praxis for biblical sustainable development through reinterpreting the Bible as mentioned in 7.3.1.1.

8.1.3.2. Initiatives without Practical Guidelines.

Korean churches have not affected public opinion regarding environmental issues very much in spite of having sporadically participated in environmental initiatives. This is because they have not had any Christian practical guidelines which could guide their initiatives different from secular organizations (Park^(b) 2007:120-126).

In particular, they have not tried to develop any practical guidelines for environmental movements against mining activities and nuclear plants in spite of the increasing serious environmental impacts from the development projects in Korea as discussed in 4.7 and 4.9.

They are still in the initial stages of formulating Christian guidelines for biblical sustainable development in accordance with the will of God. Their environmental programmes are still far from reflecting a systematic approach to cope with the environmental pollution from mining activities and nuclear plants.

They should therefore develop their own practical guidelines in order to be proactive in protecting the environment from the serious pollution confronting them in their daily life as Christians.

8.1.3.3. Poor Infrastructure for Environmental Initiatives.

Most of the Korean Protestant environmental organizations have undertaken their environmental initiatives under such seriously poor financial

conditions that 46.3% of them have self-support rates of less than 50% as discussed in 5.6.1.

They are mostly sustained by low membership fees without support of their churches. Most of their members have not paid their fees regularly so that 71.2% of them have payment rates of less than 50%.

Particularly, they have such small membership numbers that 91.4% of them have members of less than 100 persons. Furthermore, they have too few permanent workers in order to carry out their own environmental initiatives. This is very far from the church's status which should carry out environmental integrity on behalf of our Lord God as discussed in 7.3.1.2.

8.1.3.3. No Comment on Environmental Problems.

Most of Korean churches have confined themselves to matters of spiritual nature and this spirituality only refers to humans. It excludes the wider scope of God's creation. They are used to just sitting and watching the deteriorating situation of an increasingly weak and vulnerable environment produced by the rapid economic growth during the past five decades.

They have too often been silent in the face of ecological injustice, with an acquiescence which is itself a counter-witness to the Christ who stood up to the powers (Kim^(b) 2006:214-215). They are very far from the church as a resurrection community as mentioned in 7.3.1.3.

While they are alarmed about the environmental crisis in this world, they argue that this will take away from the priority of preaching the gospel. While some Christians got involved in environmental initiatives, they would usually look at it as something good and charitable.

They should have used the catch-phrase: "Let us live straightly by the will of the God." while the government encouraged all citizens to work hard under the slogan: "Let us live well." When the government was proud of "the economic miracle in Han river," the church should have taught its members a Jesus-like life attitude living in the presence of God (Coram Deo).

They should spell out in very clear terms the will of the Creator God who created all human and non-human beings, instead of only being interested in quantitative church growth. The Christian community must dare to proclaim the full truth concerning the environmental crisis in the face of

powerful people, pressures and institutions which profit from concealing the truth. Such recognition of the hard truth is an important step towards the freedom for which creation waits.

8.1.3.4. Indifference of Pastors about Environmental Problems.

Most of Korean pastors have generally executed their pastoral duties with an indifferent attitude regarding the serious environmental deterioration, particularly as a result of energy and mineral development projects. They are of one opinion that environmental issues are only for government and specialized non-government organizations, not for the Christian churches.

That is the result of their church-centered ministries which fail to fulfill their social responsibility and prevent their members from actively participating in the environmental movements as discussed in 5.2. and 5.3.

In order for their congregations to practice environmentally friendly daily lives, they should firstly confirm that their environmental actions are not only for their own sake, but also for the sake of God's Kingdom. Secondly it is necessary for them to act as pioneers in environmental initiatives. Finally they should lead God's people not to commit environmental sins through practicing environmental guidelines for biblical sustainable development in accordance with the will of God (You 2006:381) as discussed in 7.1.2.1.

8.1.3.5. Deficiency of Environmental Education System.

Most of Korean churches do not systematically carry out any environmental education programme in their Bible study and Sunday school. There is no curriculum for environmental studies even in the colleges and seminaries except a few courses concerning the general environmental problems as shown in table 5.7.

Particularly, when it comes to the environmental impact from mining activities and nuclear plants, there is not a seminary or school doing an environmental study based on biblical sustainable development in accordance with the will of the Creator.

Therefore, they must initiate and support the process of education for the growth of earth-keepers, both in the habits of everyday life and in the provision of leadership for the care of creation as discussed in 7.3.2.2.

8.2. Evaluation of Korean Energy Regime and Mining Policy.

The Korean government has persistently justified its heavy reliance on fossil fuels and nuclear plants to promote its growth-oriented economy for several decades, in spite of mounting environmental problems, financial burdens from increasing costs, and complaints against the technocratic system of energy governance as discussed in 4.3.

Korean people have been gradually awakened that energy choices can fundamentally shape the social direction and lifestyle of a certain society for not only the present but also the future. To realize a democratic society, its institutions should be fully open and transparent, and energy systems should also be compatible with democratic governance in scale and function.

In the light of environmental impact from mining activities and nuclear plants in Korea as discussed in 4.7, we cannot help indicating that the Korean energy and nuclear regime was a major pillar in support of its rapid economic growth, but resulted in producing serious social and environmental problems.

This is an adversary policy for eco-justice which raises some serious questions relating to countries or communities that exploit the poverty of another countries or communities and the relationship between humans and non-humans discussed in 7.1.3.4.

If this policy is not immediately checked and changed to suit the biblical sustainable development system in accordance with the will of God, Korea will contribute to bring about inequality in the midst of rising wealth, technocratic governance in lieu of democracy, and widening environmental gradation.

8.2.1. Evaluation of the Energy Policy in Korea.

Although the Korean government launched the restructuring of electric industry in 2000, it has pursued its supply-oriented energy policy for the past half century. It has never performed the national review to carry out a comprehensive energy efficiency scheme and alternative energy development policy which will decrease imports of coal and petroleum, improve industrial competitiveness, increase employment, and reduce pollution (Byrne et al 2004:54).

This is a problematic policy which does not carefully read the purpose of

the Creator who wants to teach us to have a attitude of humility, frugality, relationality, solidarity and sustainability in our daily lives and follow the life of our Lord Jesus Christ in the light of the limited carrying capacity of the earth as discussed in 7.1.3.2.2.

8.2.1.1. High Dependence on Fossil Fuels.

After experiencing the second oil shock in 1979 to 1980, the Korean government made a concerted effort to diversify its energy mix by investing in nuclear power, bituminous coal and natural gas. However, the stable oil prices since 1983 led to increasing oil consumption along with the high economic growth.

The rapidly increasing consumption of fossil fuels stems from expanding its energy-intensive industrial structure, fossil fuel-dominant electric utility and transportation sector. Heavy industry, including those involved with primary metals, petrochemicals and cement, is the major energy consumer in the industrial sector and also the major air and water polluter in the industrial field as discussed in 4.3.1.1.

Particularly, energy consumption in the transportation sector has significantly increased along with the rapidly increasing number of vehicles. Petroleum accounts for more than 99% of total transportation energy consumption in 2008.

The increasing rate in energy consumption has almost outpaced the growth rate of GDP for the last 40 years. Concerning per capita energy consumption, Korea with 4.43 tons of oil equivalents (TOE) exceeded Japan with 4.18 TOE, Germany with 4.22, and most EU countries with 3.91 in 2004 (Yun 2007:4-5).

The increasing demand for electricity has been met by fossil fuels and nuclear power. Particularly, the nuclear power generation enlarged from 18 thousand TOE in 1997 to 30,731 thousand TOE in 2007, producing 80.2% of the total domestic production.

The domestic energy production structure in 2007 was composed of nuclear 80.2% of the total production, anthracite 3.5%, hydro 2.8% and renewals and others 13.5% in 2007 as discussed in 4.3.1.2. This means that Korea is too much dependent to nuclear power to control it in the near future.

This is clear evidence that Korea is an outstanding economic leader who

has played very destructive roles in the biological and geological system of this planet, our home (*oikos*) as discussed in 3.1 and 3.2. This is a violation of the integrity of Christian faith. The earth is our Lord God's and He has ultimate rule over the earth as discussed in 7.1.3.1.2. He did not create the earth for only humans.

8.2.1.2. Environmental Problem.

Fossil fuels are the main source of SO₂, NO_x, CO₂ and TSP emissions in Korea, resulting in climate change. The level of SO_x emissions per unit of GDP is the highest among the OECD member countries. Coal-fired power plants release heavy metals such as mercury, arsenic, lead and cadmium as well as CO₂, SO₂ and NO_x, becoming the major source of acid rain and smog in Korea. Acid deposition and heavy metals are poisoning rivers and lakes as discussed in 4.8.

In particular, the climate change is a warning from our Lord God concerning the unsustainability of a modern industrial society based on fossil fuels and unsound economic wealth orientation. It is not only an environmental issue but also a survival matter for all the creatures created by God. It is not only a scientific issue, but also an ethical matter considering the will of the Creator as discussed in 7.4.5.

Korea has drawn global attention because of her unique situation and rapid growth of greenhouse gases (GHGs) emissions. Korea is the ninth largest emitter of GHGs and its emissions have nearly doubled in the past 15 years. This is the fastest emissions growth among OECD members from 1990 to 2005 (Min 2009:3).

With regard to the absolute amount of CO₂ emission growth, Korea ranks fourth during 1990 to 2002. During the 20th century, the world temperature increased on average by 0.6 Celsius, while in Korea it increased 1.5 Celsius. Korea is very vulnerable to climate change because it is a peninsula with long coastal lines (Son 2009:4).

Korea should actively set up a reduction target of CO₂ emission in 2009 and demonstrate a model to fulfill it before a post Kyoto treaty comes into effect. But it is not a simple matter for Korea to carry out a comprehensive counter-measure for climate change.

Korea should firstly recognize that she is indulging herself in overdevelopment and overconsumption as discussed in 4.3, while strongly

contributing to the environmental degradation. She should secondly keep in mind that if she does not act to recover the environment, the true cost of her failure will be borne by future generations.

8.2.1.3. Economic Problem.

Recognizing that the industrial sector needed a rapidly increasing energy supply, the Korean government placed the emphasis on promoting fossil fuel industries according to its economic development plan. In the light of its export-oriented industrial scheme, the government provided subsidies for fossil fuel industries to keep them competitive in the world markets and controlled energy prices to keep them low (Byrne et al 2004:72).

This policy stimulated energy consumption and resulted in the heavy dependence on imported energy. Its energy imports accounted for 26.6% of the total import amount in 2007. Korea imported crude oil of 872,541 thousand barrels (2,390.1 thousand b/d) in 2007, emerging as the 4th largest crude oil importer in the world. The overseas dependence rate of energy also increased from 65.8% in 1977 to 96.6% in 2007 (KEEI 2008:78–79).

It is generally accepted that the Korean financial crisis in 1997 was closely associated with its energy policy, which contributed an increase of its foreign debt as a result of generous loans to the energy-intensive petrochemical, steel and cement industries, supporting capital-intensive nuclear power projects, and stimulating rapid increasing energy consumption (Byrne et al 2004:73).

This is a defective energy policy in the light of the principle of eco-justice discussed in 7.1.3.4. Korean energy policy gives a good indication that the energy policy of taking advantage of the weak and supporting a few business can be leading to financial crisis as well as environmental degradation.

The gap between the rich and the poor in Korea has increased significantly in the course of her rapid economic growth. In particular, the Korean financial crisis in 1997 resulted in increasing poverty. The fundamental cause of poverty is almost the same as that of environmental degradation as discussed in 6.4. Therefore, eco-justice is nowadays not only an option for the national energy policy, but a moral imperative.

8.2.2. Evaluation of Nuclear Power Policy.

Korea is one of the countries still maintaining a strong nuclear power policy. The nuclear industry argues that nuclear energy is an inevitable option to meet the rapid increasing demand of electricity and complement the poor endowment of domestic energy resources (KEPCO 1997:68). However, it was pointed out that the Korean government started nuclear development not only for electricity generation but also on account of some other motivations (Cho 1990 237-251; Whang 1991: 58-64).

It is generally recognized that the formation of nuclear technocracy and network in Korea was based on the three factors: (1) institutional alliance among the state, the military, conglomerates and scientists; (2) the ideology of economic necessity and national security; (3) client relations between Korea and the U.S.A. (Kim and Byrne 1996:282).

This technocratic base has allowed Korean nuclear power planning to transpire outside normal policy scrutiny, and led to a policy regime decided by an inner expert circle rather than by democratic consent.

Nuclear power and waste disposal have been on the world agenda for many years. In spite of such long research and development for nuclear plants, nuclear waste disposal is still left as a serious environmental problem. However, the avarice induced by the Korean energy regime has resulted in the additional construction of nuclear plants without counter-planning for nuclear waste disposal in a small land of 99,117 km as discussed in 4.5.

This is a sin against the environment which is expressed as the arrogant denial of the creaturely limitations imposed on human ingenuity and technology as discussed in 7.1.2.1. The root of sin is egoism, acting for the self-centered lust to arrogantly dominate others and the pretension of self-sufficiency at the expense of other beings as discussed in 6.3.2.

8.2.2.1. Environmental Problem.

Advocates of nuclear power asserts that this energy source is so clean and CO₂ free that the nuclear option is a viable solution to global environmental problems as well as local pollutions from fossil fuel energy sources (KEPCO 1997:86). However, the assertion definitely fails to notice that nuclear power presents pervasive danger in the form of nuclear

accidents and radioactive contamination which are no less disastrous than global warming.

The most serious problem regarding nuclear power is how to deal with the unresolved problems of radioactive waste disposal. So, the comparison is often made that establishing a nuclear plant is like building a luxury house without a toilet. We should do nothing that could jeopardize the opportunity for future generations and deprive their ecological conditions to maintain our current lavish lifestyles as discussed in 7.4.2.

One of the significant dangers of nuclear power comes from the possibility of a major accident, which could bring about catastrophic consequences for human health and ecosystems for many generations. The Chernobyl accident exemplifies a scenario of a nuclear plant accident. The impact of a nuclear accident in Korea could be amplified by the fact that it is small and densely populated.

According to a computer simulation by the Citizens Nuclear Information Center (CNIC), if a major accident occurs at the Youngkwang nuclear power complex, more than 4 million people would be exposed to radiation exceeding a 1.0 Sivert (Sv) level. About 40 thousand people among them could be expected to die of cancer as a result of an accident (CNIC 1994:54-67).

Even during normal operation, nuclear power plants can release certain toxins such as cesium, tritium and iodine into the air and waterways. The plants also generate substantial amounts of high-temperature wastewater into coastal waters causing serious thermal pollution that destroys sensitive coastal ecosystems.

8.2.2.2. Economic Problem.

The Korea Electric Power Corporation (KEPCO) argues that nuclear power is one of the cheapest energy options available to Korea. However, this analysis ignores or underestimates the costs of nuclear waste disposal and decommissioning as well as the cost of required repairs, safety upgrades and possible accidents. It also neglects to consider the capacity factors elevating the risks of malfunctions and accidents (Byrne et al 2004:92).

Nuclear power inherently has the problem of lumpy investment as a large-scale technology. Heavy investments in nuclear energy forestall the development of genuinely indigenous energy resources such as energy

conservation and renewable resources. Furthermore, nuclear power tends to increase a society's energy dependency by boosting the supply-oriented system and encouraging energy consumption rather than efficient use of energy.

Nevertheless, the Korean Government declared the first national energy plan to build 10 more plants by 2030 in a small land of 99,117 km² without citizen consensus on further plant development. This is a very serious economic and environmental problem which will definitely bring about serious burdens (Cho 2008:3).

8.2.2.3. Social Resistance.

The nuclear energy regime requires centralized planning and tight social control to construct and manage the power plants, which is often at odds with democratic ideals of equity, decentralization and local authority.

The history of the nuclear industry in Korea is one of a nuclear energy regime trying to decrease social resistance by forcing a technocratic mode of governance based on secrecy and coercion under the name of national security or technical requirements for rapid economic growth (Byrne et al 2004:94).

Taking advantage of its monopolistic status and strong support from the government, KEPCO has built a centralized and hierarchically managed energy regime. It exercises significant power regarding social, economic and political issues relating to the construction and operation of nuclear plants.

Most power plants and transmission and distribution facilities were constructed without the consent of local residents. Citizens were excluded from the decision-making processes, and their opposition movements were suppressed violently by the police. This is a far cry from meeting the requirement of eco-justice discussed in 7.1.3.4.

8.2.3. Evaluation of Mining Policy.

South Korea has poor natural resources so that most of the metal and coal mines were shut down due to poor development conditions and environmental impacts, except a number of iron and titanium mines currently in normal operation.

However, Korea has pursued her supply-oriented energy policy to

support her rapid economic growth with mostly overseas energy and mineral resources for the past half century, in spite of her poor endowment of energy and mineral resources as discussed in 4.3 and 4.4.

Korea has resorted to import about 99% of her energy and metals consumption in 2007 as discussed in 4.2. The imports of metallic and non-metallic minerals amounted to 12,292.8 million US\$ in 2007, accounting for 3.4% of the total imports as discussed in 4.4.4. But the non-metal mines are still viable so that their products account for 72.78% of her requirements in 2007 (KIGAM 2008:5-7; KEEI 2008:12-13).

Thus, the Korean government has opted to develop overseas mineral resources instead of its domestic ones to meet the rapidly increasing demand for mineral resources and has avoided environmental problems without adequate consideration of the earth's carrying capacity and the integrity of its ecosystems.

This contravenes the requirements of economic justice that provides the material conditions for human dignity and social participation for all, within the limits of the earth's carrying capacity and the integrity of its ecosystems as discussed in 7.4.9. In order to use energy and mineral resources from generation to generation in accordance with the will of God, mining policy must be developed attuned to the carrying capacity of the earth, comprehensively managing human numbers and lifestyles together with technologies and management practices, as mentioned in 7.2.3.3.

8.2.3.1. Management of Closed Mines.

Korea has developed 2,006 mines since 1930. 1,276 mines among them were abandoned due to the low profits as a result of their scanty reserves, the deepening of mines, and increasing environmental impacts as shown in table 4.2.

The abandoned mines have had a negative impact on many residents in the mining regions as a result of various environmental impacts such as acid mine drainage, soil contamination, health damage and sudden ground collapse etc.

The 1,276 abandoned mines are just the confirmed ones which the Korean government has gotten hold of based on register records in

accordance with the Mining Act. But there remain many unconfirmed closed mines imprudently developed during the colonial period of Japan and left without aftermath management.

The Korean government therefore launched the Mine Reclamation Corporation (MIRECO) in 2005 in accordance with the Mining Damage Prevention and Mine Reclamation Act of 2005, and set up a mine reclamation plan in June 2006 to carry out long-term and systematic projects.

We are stewards on behalf of God who has entrusted creation and its resources for our wise management as discussed in 7.2.2.1. However, most of the Korean churches have not been concerned about an ecological mission regarding mining activities in Korea. They are also unconcerned about the serious pollution from asbestos, limestone and coal mines, oil refining plants, copper and zinc smelting and refinery plants etc. as discussed in 4.7, even though it involves environmental problems that can't be solved by government and specialized agencies alone.

8.2.3.2. Overseas Mineral Development Policy.

Korea regards overseas resource development as one of the effective measures for promoting resource supply security due to its poor endowment of mineral resources and environmental impact from domestic mining activities. The Korean government has increased its investment in this regard aggressively and supported Korean companies by offering overseas developmental assistance (ODA) or by exploiting its diplomatic influence.

The Korean government also set energy and minerals security as one of its high priorities of the national policy in 2008, and planned to achieve a goal for the independent resource development rate of 32% in 2012 from 18.24% in 2007 and then 40% by 2030 for strategic resources such as oil, natural gas, uranium, copper, iron, lead and zinc as mentioned in 4.6.

Korean companies invested 8.9 billion dollars in oil and gas development and 2.5 billion dollars in developing other mineral resources to carry out 286 ongoing resource development projects in 53 countries as of the end of 2007 (Lee 2009:37-43).

However, Korea should have kept in mind that as the world becomes more exploitable and more profligate, the environment of this planet

degenerates unto the brink of total destruction, contrary to the will of God as discussed in 7.1.4. It should have approached more carefully the limited energy and mineral resources and prevented various pollutions from mining activities particularly in developing countries as well as in Korea.

Even though Korea has a poor endowment of natural resources, it should have made a more concerted effort to develop her domestic mineral resources through modernizing the domestic mining industry such as changing from open-pit mining to underground mining, improving its mining technologies for environmental impact etc.

Korean churches should recognize that they are indifferent about where the deposits of energy and mineral resources are, how they are developed, and what environmental damage has already occurred as a result of mining activities. They enjoy using these resources them for their church buildings and convenient facilities rather than playing the role of steward for the earth belonging to our Lord God as discussed in 5.4.

8.3. Guidelines for Biblical Sustainable Society in accordance with the Will of God.

The environmental degradation in Korea is much more serious than we think. The reality of the crises of economic deprivation and environmental degradation has become visible in the everyday life of Korean people as discussed in Chapter IV. That is not only for scientific or economic reasons, but also for moral reasons in that we are already under God's judgement as discussed in Chapter VII.

However, the problems Korea is now facing does not mean that it is impossible to change into a sustainable and democratic energy and mineral future. There are bright alternatives available for Korean society. The biblical sustainable development option in accordance with the will of God is the way to lead Korea into a new society.

In order to work towards this option, institutional mediation is surely needed to promote social changes. But its success ultimately depends on the energy and determination of the Korean people in their different contexts to work for the new order. Therefore, the full support and prayers for solidarity and readiness of Korean churches are truly necessary. It is also necessary for Korean churches to enter into alliances of cooperation with others.

8.3.1. Directions for Individuals regarding Biblical Sustainable Development.

8.3.1.1. Let Us, First of All, Change Ourselves.

Our attitudes and behaviors are the basic elements in practicing biblical sustainable development in accordance with the will of God. So, if we want to change the polluted environment we find ourselves in, we first have to change ourselves. To change ourselves effectively, we first have to change our perceptions of the way things are and of the way things should be. Because the way we act corresponds with the way we see things (Covey 1994:28).

In order to live environmentally sensitive lives, we have to make things happen. We cannot wait for others to do it for us. We have to take the initiative. However, our behavior is the result of the kinds of decisions we make and not of the conditions we live in. Our behavior is the product of our own conscious choices, based on our values to follow our Lord Jesus Christ. Between stimulus and response, we have the freedom of choice for biblical sustainable development.

8.3.1.2. Checking Points for our Daily Lives.

Recognizing that human greed and avarice are root causes of environmental degradation and human debasement, the following queries will help us to examine our spiritual relationship with the natural world and to explore the implications in our daily lives (Koo 2005:73-85):

- 1) Do I live simply, mindful of how my life affects the earth and her resources?
- 2) Do I honour all the creatures in their intrinsic value, the creational order of God, and the richness of the created world?
- 3) Do I seek the holiness which God has placed in His creation?
- 4) What am I doing to teach my children and members of my community to cherish each strand of the interwoven web of creation?
- 5) What actions am I taking to reverse environmental destruction in the planet, our home (*oikos*), and to promote her healing?
- 6) Does my daily life exemplify and reflect my respect for the oneness of creation and my care for the environment?
- 7) Am I willing to consume less myself in order to promote rightful

sharing of the world's limited resources in a manner that reduces environmental degradation? Am I prepared to give up products, services and conveniences, even those I may consider as necessities in order to help preserve non-human creation on earth?

8) Am I aware of what happens to the waste products that I generate? Do I dispose of that waste in ways that are regenerative, or at least that do not harm?

9) Am I careful to avoid spending and investing money in business fields that result in doing harm to the environment?

10) If I own land, do I respect the heritage of the land as a gift of God, exercising sound stewardship over its natural resources, so that they are maintained not just for my use, but for future generations?

11) In my work, do I seek to integrate a concern for the environment into my goals and actions, seeking ways to share with others the values and importance of environmental concerns?

12) Do I seek to avoid destruction of the environment by conserving energy, using energy efficiently and relying on renewable forms of energy?

13) Am I mindful of the extent that the ever-increasing population on the earth contributes to environmental degradation?

14) Do we examine and appreciate cultures and communities whose lives are based on close harmony with the natural world?

15) As friends, do we communicate concerns on environmental issues to local and national legislators in order to encourage environmental regulations and laws?

8.3.1.3. Action for New Biblical Sustainable Development Order.

Our effort to discover and maintain a personal lifestyle should be consistent with God's purpose: ready hospitality; observing a sabbath so as not to get trapped by the world's expectations of exploiting one's own or other people's energies, or to over-use the resources of nature; care over the re-use and recycling of products whenever possible; and tithing of income so as to acknowledge that all economic benefits are God's gifts.

Christian decisions about work and career choices should be consistent with a Christ-like commitment to economic justice for all. Even though the job is humdrum, worthwhile work can be a vocation to care for the earth and the poor. We should try to promote greater economic justice through

personal commitment of some voluntary organization (Lim 2003:71–93).

Where possible, together with people of different backgrounds and lifestyles, we must try to participate in Bible study to learn and identify with God's continuing story with humanity and to break beyond the constricting lenses of understanding that domesticate the Bible into our own culture and expectations.

We must also try to take part in disciplined prayer, public worship, and theological reflection with others to reach out to God and to be directed, energized, refreshed and supported in commitment to God's justice for all.

8.3.1.4. Personal Sacrifice for a Biblical Sustainable Society.

Individual Christians should determine to live responsibly in the environment regardless of the cost, knowing that a few well-placed examples can have a tremendous impact. If personal sacrifice is necessary to reclaim the earth, if we are compelled to give up luxuries and conveniences to which we have become accustomed we can find our inspiration in the sign of the cross.

Jesus Christ left the glory of a place beside His Father to enter poverty and embrace death for the salvation of all creation — human and nonhuman creation. If we are to walk as He walked, surely part of our goal is to make the sacrifices necessary in order to image God on the earth.

In practical terms, the sacrificial life will mean buying fewer luxury goods, living in smaller and more energy-efficient homes, eating foods that are as unprocessed as possible, cooperating with government measures to decrease pollution and increase recycling, and working to put as much into the earth as we take out of it. This will be a total reorientation of lifestyles in an affluent society.

8.3.1.5. Christ-like Life for New Sustainable Society.

The population–consumption–ecology crisis will not be solved by nude rationality, but only by truths that stir the flaccid will by touching the sacral core of human nature. So, we should all practice the Christian ethic in our daily lives to prevent environmental degradation in this world.

The Christian ethic is a Christ-centric ethic characterized by life-giving love which includes incarnation and suffering. Christ-centric ethics means

that (1) Christ is the origin of Christian ethics; (2) Christ is still the model of Christian ethics. His life of incarnation, suffering and crucifixion should remain as the model of our Christian ethics; (3) Christ's mission is the goal of Christian ethics; (4) The specific Christ-centric ethic in this world is the life-giving love or self-giving love in both dying and living; (5) The Holy Spirit regenerates this Christ-centric ethic in Christian life (Cheong 2000:168-173).

At this point, Christians can be identified with Christ in this world. Those who have the Spirit of Christ can become Christ-like persons. We must become Christ-like persons particularly for the earth in the environmental crisis. Therefore, we must live a totally different life from the worldly life. Christians must reject the sinful power, the evil power. Christians must fight against environmental sins (Col. 3:5-9).

When Christians concentrate on Christ, they live a paradoxical life. Our life is not our own. Our life is Christ's. In this otherness of life, Christians should break the wall between the self and the other (humanity and nature). We should live in this world with Christ and in Christ. In the environmental crisis in this world, to live with Christ and in Christ is to live in the life-giving dying or living in and for Christ in order to recover the earth belonging to our Lord God.

8.3.2. Guidelines for Korean Churches regarding Biblical Sustainable Development.

8.3.2.1. Korean Churches are Called to Repentance.

Facing the environmental degradation discussed in Chapter IV, Korean churches as the body of Jesus Christ firstly need to confess that they have failed to recognize and therefore fulfill their human responsibility towards creation. Christian teaching and practice, based on the misinterpretation of scripture, have reinforced systems and structures of power that degraded their environment. These should be examined and clarified (Hessel and Rasmussen 2001:187-188).

The next thing they should do is repent. The only problem is they do not have eyes to see and ears to hear the Spirit, as they are occupied with their greed. Nonetheless, repentance is the first step in any truthful prayer. They should repent their hidden love for mammon and their secret desire for the Babel tower (Chung 1991:41-42).

To prepare the way of the Holy Spirit, they need to be set free from the spell of mammon. They have to turn themselves to the direction which the Holy Spirit empowers them to move in. It is the direction leading to creating, liberating and sustaining all the creatures, not based on the power of domination by capital, weapon or manipulation, but based on the life-giving power of mutuality, inter-dependence and harmony.

With a humble heart and body, they should listen to the cries of creation and the cries of the Holy Spirit with it. They must care for the earth, air, water, energy and mineral resources tortured and exploited by human greed for money. What they need is a wailing wall to weep with the creation which has been groaning in travail (Rom. 8:22).

The Creator God will not abandon them to despair when they repent. He will not allow them to indulge in self-pity as helpless victims. He will call them to come out of their prison of despair, cynicism and oppression. He will empower them to protect the earth. When God's Spirit was upon the Korean people on the day of Pentecost, God confronted their broken hearts and called them into discipleship. Their nightmare of witnessing Jesus' death turned into an apocalyptic vision of a new world. When the life-giving power of the Spirit poured onto the faithful, they saw the vision of a new world.

8.3.2.2. Seriously Awakening to Environmental Degradation.

We face unprecedented environmental changes today such as climate change, land degradation, dwindling of natural resources, nuclear waste treatment, deforestation, air and water pollutions etc. Few global issues are more important than global warming, environmental degradation, and the potential for conflict growing out of competition over dwindling natural resources such as oil, natural gas, water and so on. The rapid environmental change is all around us.

Korean churches must seriously be awakened to such an environmental crisis. In particular they should realize the full extent of what is happening from nuclear plants and mining activities in Korea as discussed in 4.7. The environmental risks transcend borders. It could even come to jeopardize international peace and security.

They should sincerely accept that if they do not act at present, the true cost of their failure will be borne by succeeding generations, starting with

theirs. That would be an unconscionable legacy from generation to generation. Unless they make a conscious effort to preserve their precious natural heritage, they are at grave risk of forever disturbing the delicate ecological balance of nature.

8.3.2.3. Understanding Environmental Issues through the Bible.

In the light of Scripture, Korean churches must firstly understand that the issue of the environment is fundamentally theological and is related to central truths of the Christian faith: creation, sin, salvation, and the proclamation of the gospel.

They must secondly abandon the bad theological habits that malformed the church's understanding of and relationship with nature through decontaminating inherited Christian doctrine and liturgy and reconstructing faith and worship patterns as mentioned in 8.1.1.

They should thirdly discover certain scriptural concepts in order to transform their attitude to the world around them, particularly to solve the environmental problems in Korea as discussed in Chapter IV. Finally, they should prepare a guideline for practicing their daily lives and participating in environmental initiatives (Koo 2005:122-134).

8.3.2.4. Having a Right Relationship with Nature.

Human beings are a part of the world which our Lord God created with the intention of relationship between humans and non-humans. Non-humans can survive without humans, but humans must humbly accept that they cannot survive without non-humans as mentioned in 7.1.1.4. We should accept the total dependence of our well-being on the well-being of creation. So, nature is not a mere backdrop for the drama of human salvation (Hall 1990:185-215).

We can recognize in the Bible that God's interaction with the creatures is never limited to humanity. It always is an interaction with humanity in relation to the rest of creation. God's acts of creation, judgement and redemption embrace the earth and all its creatures. The Spirit is present throughout creation. All the creatures are God's good creation to have their own value and dignity in and of themselves, apart from any usefulness to humans.

Korean churches should therefore discover the need to extend their spirituality to include all of God's creation. Korean churches should not only emphasize a relationship with God through the atoning work of our Lord Jesus Christ, but also spell out in very clear terms the will of the Creator God seeking the well-being of every kind in God's commonwealth.

8.3.2.5. Actively Participating in Environmental Initiatives.

If Korean churches are committed to feeding the hungry, clothing the naked, healing the sick, setting at liberty the oppressed, challenging the powers that be, and exalting those of low degree (Luke 1:46-55; 4:17-19), they dare not ignore the environmental, social, political and economic contexts of these concerns.

They must dare to proclaim the full truth about the environmental crisis in the face of powerful persons, pressures and institutions which profit from concealing the truth. Such recognition of hard truth is an important step towards the freedom for which creation waits. Love demands the pursuit of justice, peace, and ecological integrity in the realm of social systems (Kim 2003:115-123).

They have to make an extra effort to attend ecological meetings, comment loudly and participate effectively in the environmental movements. They should make their voices heard, and they must share their expertise and knowledge to make a contribution to the environmental protection. They can then tell their children that they did try to make a difference for them to take over an integrated environment.

8.3.2.6. Performing Divine Ministry with Social Responsibility.

Korean churches should re-examine the social responsibility placed on them by Scripture to care for God's creation and ensure that they act as responsible stewards of all that God has entrusted to them. In order to perform it, they should dispose of their church-centered ministry as soon as possible. They must go back to their old attitudes toward social ministries which led the independent movement against the Japanese colonial regime and the democratic movement against the military government.

The Korean church needs to recover its original function of ministry which is a response to the divine beckoning to go and do likewise to image God. God made the Korean church to act and shape the historical present

based on the model of God's New Heaven and New Earth (Watkins 1994:68).

In this context, Korean churches should have a strong conviction that the environmental concern is not an optional matter but environmental integrity is a prominent part of the church's mission. They should include significant environmental implications in their proclamations and actions, away from only interest in quantitative church growth (Hessel and Hudnut-Beunler 2001:300).

They should also have a firm belief that this is the best way to set off their revival movement again. The recent member growth trends of both the Catholic and Protestant church are a good witness for the movement. The members of the latter, which is indifferent to social ministry, has decreased more than 10% from the end of the 1980s, while those of the former, often participating in social initiatives, has increased significantly as discussed in 8.1.2.3.

8.3.2.7. Worship Service Oriented to Environmental Concern.

Christian worship needs to become more oriented to seeking the well-being of every kind in God's commonwealth, to ecological concern for the world reconciled in Jesus Christ, and to the eco-justice ethics and praxis that flows from the gospels.

Korean pastors are therefore in charge of instructing the congregation at all times in order to make them more responsible stewards of God's creation. Considering the urgency of solving the environmental crisis, worship patterns should express more the relation between God and nature and encourage members to participate in earthkeeping on a finite planet. Environmental challenges should be issued as often as possible (Koo 2005:157-161).

They should strongly preach that Christians should voluntarily reshape their daily lives in order to highlight God's loving and just relation to the earth, not only humans but all creatures, and join to adopt patterns of production, consumption and reproduction that safeguard the limited carrying capacity of the earth. They should often remind members that Christians are called to be earth-keepers, preventing harm to nature as the best method of environmental protection, and when knowledge is limited, applying a precautionary approach.

8.3.2.8. Christian Community without Sexism and Classism.

If the Korean church truly wants to be the community of Jesus Christ, living in love as one body and seeking the reign of God, the practice of sexism and classism in the church should not be permitted. Instead, the community should be a living witness to a fellowship of sharing, cooperation, and peace among all (Jeong 2002:192-196).

Korean women also need to be free from man-centered instruction and actively develop a spirituality to participate in the environmental initiatives. Korean churches should encourage and support their own activities for environmental issues and prepare some environmental programmes for them. It is never too late for them to become involved in environmental movements.

Additionally, Korean churches are faced with the challenge of Paul's appeal to accept God's preferential option for the poor, because the gap between the rich and the poor in Korea has increased so much in proportion to its rapid economic growth for the past half century. They should recognize that the worth of a society is measured not by its power, wealth or size, but by how it cares for the poorest and weakest members.

8.3.2.9. Revising the Mining Law for Biblical Sustainable Development.

The Bible gives us several commands to obey the political rulers over us (Rom. 13:1; Tit. 3:1). Christians should therefore submit themselves for the Lord's sake to every authority instituted among men (1 Peter 2:13-14). However, when their government leaders violate the power and authority and issue laws contrary to the Scripture, they must not submit but obey God. The examples of this principle can be found in Acts 4:19 and 5:29.

Christians should also support their government leaders by earnestly prayer for them to be filled with divine wisdom to guide them in the affairs of governing the people (1 Tim. 2:1). However, if the leaders are wicked and are acting contrary to God's Word, they should pray for their removal from office and exercise their right as citizens to vote them out of office.

Furthermore, if any law is not identified with biblical sustainable development in accordance with the will of God, Christians should try to revise the law to protect their environment. Our God is political, blessing the peacemakers, intervening in the affairs of governments and nations, and

liberating slaves from the shackles of pharaoh. The sovereign God bans all boundaries on benevolence.

One of the key threats to environmental management in developing countries is the lack of institutional capacity to undertake the complex environmental task. In this regard, Korean mining law also has no clauses concerning clear production (CP), pollution prevention, burden of proof and sabbatical year as discussed in 6.5.2. and 7.4.12.

According to an analysis of the 299 current members of the Korean Parliament in table 1, Christians account for 66.9% (200 members). This means that they can revise the law by themselves if they all joined hands to prevent the environmental degradation through practicing biblical sustainable development in accordance with the will of God. Therefore, Korean churches should put pressure on them to revise the law as soon as possible.

Table 8.1: Religious Share of Members of Korean Parliament.

Religion	Protestant	Catholic	Buddhist	Others	Non-Religios
Share (%)	120 (40.1)	80 (26.8)	47 (15.7)	5 (0.3)	47 (15.7)

Source: Jungyang Sunday, December 15, 2008, p. 7.

8.3.2.10. Educational Approach for Biblical Sustainable Development.

Education is a very useful process to change the environmental worldview which can set off a cultural mindquake, because it involves examining many of the basic beliefs. Once we change our worldview, it no longer makes sense for us to do things in the old ways. If enough people do this and put their beliefs into action, then tremendous cultural change can take place.

The church's educational goal should therefore become the growth of earth-keepers, both in the habits of everyday life, and in the provision of leadership for the care of creation in the environmental crisis. Some planned lessons must be carefully made available ranging from biblical foundations to suggestions for practical action in Bible study, Sunday School and seminary (Kim 2003:123-129).

In particular, Christian colleges and seminaries should provide theological education to cope with eco-justice themes and environmental issues at the individual, institutional, and social policy level based on the biblical

sustainable development in accordance with the will of God.

Korean churches should continually produce consecutive programmes to make the benchmarks for preventing and healing environmental degradation through shifting from current approaches into fundamental approaches in accordance with the will of the God.

8.3.3. Directions for the Korean Government regarding Biblical Sustainable Development.

Human future perspectives depend on energy and mineral resources that are safe, reliable, and environmentally sound, because they are major sources for the current environmental crisis and their deposits are finite and eventually exhausted. However, most countries continue to use energy and minerals that are mostly non-renewable and technologies that pose significant hazards to the environment and human health (Byrne et al 2003:17).

Therefore, it is very necessary to extend them by avoiding overuse or wasteful use, through scientifically recycling and exploiting them, and by developing renewable substitutes where possible. Recent progress in the fields of energy and mineral efficiency, conservation and recycling/ reuse, and alternative substitute development such as solar, hydrogen and wind energy are making possible an energy and mineral transition built on a decentralized, renewable and low-emission technology platform (Byrne et al 2004:98-99).

8.3.3.1. Moratorium on Nuclear Power in Korea.

The Korean Government should make arrangements to stop the establishment of additional nuclear power plants until developing a perfect technology and/or method to cope with the nuclear wastes as discussed in section 3.2. Instead of establishing them, it should make concerted efforts to perform efficiency and conservation schemes for energy and minerals and develop renewal energy and mineral resources.

It is clear that the nuclear plant always embraces the persisting threat of nuclear accidents, and brings out the unresolved problems of radioactive waste disposal. Establishing a nuclear power plant is therefore compared with building a luxury house without a toilet.

Once the huge capital investment is monopolistically committed to the nuclear plant, energy consumers have little choice except to respond to such a significant supply through increasing energy use. It encourages people to overuse energy consumption to make up for the huge cost of its construction, and provides sources for nuclear weapons proliferation. We cannot jeopardize the opportunity for future generations and degrade their ecological conditions to maintain our current lavish lifestyles.

The Joint Institute for Sustainable Energy and Environmental Future (JISEEF)¹⁾ suggests a reasonable initiative focusing on energy efficiency improvement based on a competitive service strategy, while Korean energy policy focuses on nuclear power based on a national monopoly planning approach. The initiative describes a Korean future that could maintain its economic development, significantly lowering CO₂ emissions. It compares environmental and economic effects through improving energy efficiency and conservation with electricity generation increase through additional nuclear plant construction as shown in table 2.

It shows that the cost-effective option for energy efficiency improvement is sufficient to enable Korean society to meet national economic objectives without the construction of additional nuclear power plants. The initiative built on the basis of cost-effective energy use and high-efficiency energy technology clearly justify a nuclear power moratorium.

A main advantage of the moratorium policy would be the release of US\$ 25 billion which can be spent to improve energy efficiency and conservation and developing alternative energy to meet Korean energy requirements in an environmentally responsible manner (Byrne et al 2004:263-264).

1) The Joint Institute for Sustainable Energy and Environmental Future (JISEEF) is designed to play an innovative and creative role in identifying and promoting opportunities for a sustainable future for the Korean peninsula in 2001. JISEEF carries out its goals by linking a highly respected international research team organized by the Center for Energy and Environmental Policy (CEEP) with South Korea's foremost experts in the energy and environmental fields led by the Research Institute for Energy, Environment and Economy (RIEEE) of Kyungpook National University, and including scholars from Seoul National University and researchers from the Citizens' Institute for Environmental Movements.

Table 8.2: Nuclear Power Moratorium through Energy Efficiency Improvement.

Energy Options	100% Commitment	65% Commitment
Additional Nuclear Plant Capacity	30.3 million TOE	30.3 million TOE
Energy Efficiency Improvements	33.6 million TOE	21.8 million TOE

Source: Byrne et al, p. 273.

8.3.3.2. Efficiency and Conservation Policies for Energy and Minerals.

The Korean government introduced a voluntary program²⁾ for energy-intensive industries in 1998 to reduce CO₂ emission by lowering their energy consumption. It launched a energy auditing and consulting program³⁾ for the companies having poor energy management infrastructures in accordance with the Rational Energy Utilization Act (Byrne et al 2003:84-110).

However, the programs are no match for the rapid increasing energy demand and concomitant waste, pollution and social risk that dominates the energy picture. They did not have a great effect on energy conservation in the light of a large amount of investment, because Korean energy policy has mainly sought to assure stable energy supplies from fossil fuels and nuclear power to support its rapid economic growth.

The Korean energy intensity rate remains above the world average. Its energy consumption has grown so dramatically that it records the ninth largest source of carbon dioxide (CO₂) emissions in the world (World Bank, 2008:38).

Fortunately, the JISEEF suggested a scenario (JISEEF initiative)⁴⁾ in 2003 to identify a detailed, practical and economical strategy to reduce Korean energy consumption while improving environmental quality and strengthening

2) The Voluntary Program is a strategy that companies establish their energy conservation targets voluntarily and prepare an agreement with the government to meet these targets. In turn the government pledges to support the companies through various kinds of incentives.

3) Through the Act, the Korean government has provided financial assistance to industrial building, transport, and residential sectors in order to promote energy conservation.

the national economy. In order to supply the initiative with real witness for their prudent selection, the JISEEF team painstakingly examined various options. According to its result after two years examination, the JISEEF supplied Korean people with a environmentally sustainable and economically more practical action agenda: replacing the additional nuclear power plants with an energy service regime that is technologically more diverse and decentralized, environmentally better balanced, socially more equitable, and politically more readily governable by Korean citizens (Byrne et al 2003:24).

The JISEEF initiative offers a future society that reduces CO₂ emission by 589 million tones every year, saves at least US\$ 43.8 billion in net social benefits every year, removes the need for any additional nuclear power plant construction, and restores balance (relationship) between human and non-human creation.

The Korean people stand at a crossroads whether to select their energy policy between monopoly-based nuclear power or market-based energy efficiency. They should check the monopolistic huge capital investment in nuclear plants under the government plan which will preclude her from improving cost-effective energy efficiency.

8.3.3.3. Climate-Sensitive Scheme for Global Warming.

Korea is nowadays required to take notable counter-measures for global warming. It should call for creative measures, mapping out a national comprehensive plan aimed to slow down climate change, reduce energy consumption and invent technologies that can cut down greenhouse gas emissions.

Although Korea is a member of the OECD, it is classified as a non-Annex 1 country which has no obligation to make mandatory cuts of GHGs emissions during the first commitment period of the Kyoto Protocol. Korea still wants to maintain its non-Annex 1 status not to make mandatory

4) The JISEEF initiative was prepared by a team of 38 independent researchers using objective engineering and economic methods to evaluate more than 3,000 technology options for improving energy efficiency in South Korea. These technologies already exist so that breakthroughs through research and development are not needed to implement the scenario.

cuts that can hurt its economic growth.

The Korean Government therefore announced in November 2009 that it will voluntarily cut GHGs emissions by 30% from business as usual (BAU)⁵⁾ level in 2020 compared to 2005. This is the highest figure for non-Annex 1 countries. Its target is equivalent to reducing emissions by 4% from 2005 level, falling to 569 million tons in 2020 from 594 million tons in 2005.

The government also decided to establish the Global Green Growth Institute (GGGI) to develop new technologies to fight global warming and share them with the rest of the world. The institute will act as a global think tank and as a bridge between advanced and developing countries to come up with workable solutions to our problems (Min 2009:3).

However, if Korea really wishes to make any difference in fighting climate change to save ourselves and future generations in the light of its dishonorable record of the fastest emission growth among OECD members, its immediate and comprehensive actions to fulfill the voluntary reduction of GHGs is much more valuable than hopeful messages to reduce GHGs emissions.

8.3.3.4. Scheme for Restricting the Use of Vehicles.

The most rapidly increasing sector during the last three decades was the transportation sector in Korea. A sharp increase took place from 571 thousand vehicles in 1981 to 16,428 thousand in 2007. The consumption came to 36,938 thousand TOE in 2007 as mentioned in 4.3.1.1.2.

The number of vehicles are too many to maintain them in a small territory of 99,117 km . They are a main source of CO₂ emission in Korea. So, the Korean Government should make an arrangement to restrain owners from using vehicles. Driving only odd-registered number vehicles on odd days and driving only even-registered number ones on even days is a good example.

In order to shift to a low-carbon energy system, the Government should

5) "Business as usual (BAU)" is a term used by energy researchers to refer to the likely demand for energy at a future date if there are no significant changes in the society, its economy and its policies.

additionally adopt various kinds of incentive schemes to develop environment-friendly transportation methods and turn to alternative energy to lower the carbon emission rate.

8.3.3.5. Environmental Impact Assessment through the Sabbatical Year Scheme.

The environmental impact assessment (EIA) is usually enacted as a tool of integrating environmental concerns into all major activities throughout each country. That is a procedural minimum guideline for doing business in a country.

In the light of the serious environmental impact as discussed in 4.7., the EIA for mining projects should regularly be performed to evaluate the residual biophysical impact from mining activities. The residual impact should result from a comparison of the "before" and "after" conditions rather than comparing the "before" and "during" situation. The environmental impacts from mining activities should be the total area of land that is affected and water and air consumed as well as some mining waste deposits.

Therefore, it will be a very appropriate arrangement to adopt the sabbatical year scheme discussed in 7.4.12. in mining law to arrive at a true measure of the environmental impact. Thus, the environmental management for mining activities will be fully integrated with mine management which plans, constructs, operates, transports and finally closes down mining operations through applying the sabbatical year.

8.3.3.6. Overseas Mining Policy for Preventing Mining Impact.

In order to promote Korean resource supply security and complement its poor endowment of mineral resources, it is surely accepted that its overseas mining activities is an inevitable option at present.

However, it should try to voluntarily keep clear production (CP), pollution prevention and burden of proof in the mining context of biblical sustainable development as discussed in 6.5.2 as well as adhering to environmental laws and regulations of local developing countries.

Furthermore, it should try to pay the external costs for its overseas mining projects particularly in developing countries as mentioned in 7.4.8 as

well as offering overseas developmental assistance (ODA) supported as its demonstration of benevolence for developing countries.

8.3.3.7. Officials' Attitude to Environmental Integrity.

The Korean Government should engender and stimulate attitudinal change for the integrity of creation through education on topics such as the environment, morals, nature, resources etc. and economic policies such as mining projects, energy efficiency and so forth.

In particular, holders of public offices such as parliament members, cabinet ministers, mayors etc. should fulfill their duty to keep a healthy environment. They must make sure that they are above any criticism that they are using their positions for personal financial advancement. Christians should note to elect those representatives to solve environmental issues.

They should pay attention to treating the environment as an integral part of social and economic development. If they address social and economic issues separately from environmental issues, the ecological and social collapse are inevitable. They should ensure that economic and political reform is carried out with environmental issues.