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CHANGING AGRICULTURAL
PRIVATE PROPERTY RIGHTS

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CHANGING AGRICULTURAL PRIVATE PROPERTY RIGHTS

Private ownership of property is a fundamental right in our democracy. Historically, land ownership and the virtually unrestricted right to use one's property, played a key role in the development and growth of this country. But private property rights are being challenged, redefined, and reallocated, resulting in new restrictions and changes in agricultural landowners' rights to use their land.

Increased awareness and concern about health and environment are causing a change in public attitudes toward agriculture. In the name of environmental protection, new restrictions are being placed on private property rights, causing uncertainties and altering the economic options available regarding the use of land for agricultural production.

This paper deals with questions regarding; what are private property rights, what entitlement does land ownership include, and how are property rights being changed? While recognizing there are additional issues impacting property rights such as nuisance conflicts between rural non-farm residents and their farm neighbors, and zoning ordinances, this discussion will be limited to the changing property rights due to environmental protection. These are questions currently being debated by people who believe they hold certain property rights, and by others who either want control or reallocation of those rights, or who also believe they are entitled to those same rights. As the allocation of private property rights changes, the

determination of who holds what rights directly affects landowners engaged in agricultural production.

Changes required in agricultural management are the result of new information regarding the impact of some agricultural practices, such as: atrazine is no longer viewed simply as a weed control product for corn production, but is now viewed as a substance that causes degradation of the groundwater; and wet spots in fields should no longer be tilled to improve the productivity of the land, but should be left as possible habitat for wildlife. While changes in management practices may be necessary and appropriate, uncertainty for agricultural producers is created regarding which current practices may be restricted in the future and how much control will those outside of agriculture have on the management and operation of agricultural operations.

This paper is an analysis of the issues underlying the conflicts resulting from changing agricultural private property rights due to regulations seeking to increase environmental protection.

CHAPTER 1

THE CONCEPT OF PRIVATE PROPERTY RIGHTS

What are property rights? For the purposes of this discussion, the term "property rights" (ie., private property rights) will refer to rights associated with the use of privately held land and its resources. They are the rights that determine what people may or may not do with land resources, and are commonly referred to as a "bundle of rights". A bundle of rights is a group of individual rights which define a use or action associated with the land, that is granted to the holder of each particular right. Although the bundle itself is inclusive, for a given unit of land, the individual rights in the bundle may not all be held by the same individual or entity. The right to lease the mineral rights associated with a parcel of land may be held by someone other than the person holding title to the surface uses rights. Historically mineral rights have been viewed as a separable stick in the bundle of rights, which could be sold or leased at the discretion of the person holding the "mineral rights" stick. Thus, different parcels of land may be operated under different divisions of the bundle of rights.

The individual rights within the bundle may also be modified, and accordingly, different parcels may be modified differently. As a result, some landowners may hold more rights than others, and consequently have more options available in the use of their land for agricultural production. These differences

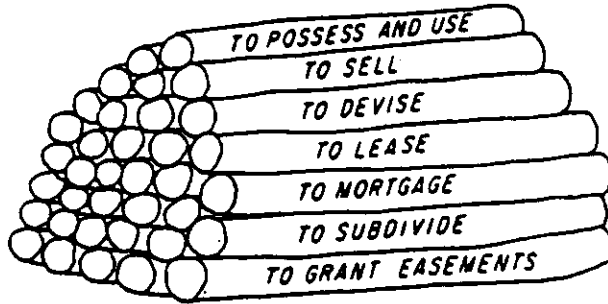
in the rights held, may in turn affect the competitiveness and profitability potential for a landowner and his/her farming operation. An important determinant to the competitiveness and profitability potential is whether the differences in rights held by different landowners is reflected in the purchase price and taxation of the property.

As challenges are being made to the long standing interpretation of property rights, the bundle of rights is being scrutinized more closely and an increasing number of sticks in the bundle are being found to be separable and even marketable. An example of a recent right that has been separated from the land is the right to raise confined or concentrated livestock. In Okeechobee County, Florida, it was determined that large confined dairy operations were contributing to an increased phosphorus level in Lake Okeechobee. The South Florida Water Management District (SFWMD), with the power to tax and to control land use in the Lake Okeechobee water basin, determined that a reduction in dairy production would be beneficial to the lake. The South Florida Water Management District, offered to pay farmers to cease dairy production, as one option. The landowner would retain the right to farm the land and to pasture cattle in low densities, but the farm operator could no longer continue dairy production. The dairy ceasing agreement was incorporated as a deed restriction prohibiting dairy production on the land for future land holders as well. The effect was to make the "right to produce milk" a separable stick in the bundle of rights

and to make it marketable for one time. The right to produce milk was not a separate marketable right in the past and once sold, it is no longer a marketable right. The removal of that right from the bundle associated with given parcels of land will impact the resale value of the land. Participation in the dairy ceasing agreement was voluntary. However, those choosing not to participate and to remain in dairy production, were subject to newly imposed regulations on their dairy operations in order to prevent phosphorus from traveling from a dairy production site to the waters of Lake Okeechobee. Their rights to the use of the their land were changed from the set of rights originally purchased with the land.

The basic set of rights included in the bundle of rights associated with property has been well defined and illustrated by Barlowe.

The largest bundle of rights a private owner can hold in landed property is known as ownership in fee simple. Fee simple owners hold a bundle of separable property sticks or rights. They have the right to possess, use, and within reason exploit, abuse, and even destroy their land resources. They can sell land with or without deed restrictions that affects its future use. They can give it away, trade it for other things, or devise it in any of a number of ways to heirs. They can lease use rights to others; mortgage their property or permit liens to be established against it; subdivide their holding or grant easements for particular uses; enter into contractual arrangements involving its development, use, or disposition; and exercise these rights, as long as they have not disposed of them, to the exclusion of all other persons (Barlowe, P. 331).



SEPARABLE RIGHTS OF FEE SIMPLE OWNERSHIP
(Barlowe, P. 332)

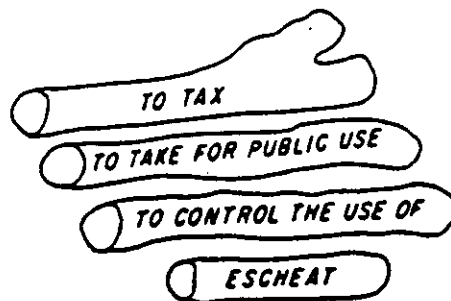
The majority of rights in the bundle are straightforward, well understood, and basically remain unchanged, such as the "right to sell" the land and the rights one holds to the land. However, the "right to use" land is not as straightforward, and is in fact changing and creating new uncertainties for agricultural landowners.

While in the previous diagram, the right to use the land is illustrated as a simple stick, it is in fact a complex, multi-faceted stick which can be carved or splintered to dramatically alter its composition. The specific uses of land allowed or permitted may be determined outside the landowner's bundle of rights and then incorporated into the bundle, such as by the imposition of regulations to limit nutrient runoff from feedlots, which in turn limits or restricts the land use management options available.

Changes in the definition of the "right to use" land can occur beyond an individual landowner's control, even if the landowner holds the right. These changes can be made without the landowner either seeking or agreeing to the changes. As the rights to use land change over time, a landowner will find that

the set of rights originally purchased have been altered.. The revised set of rights may reduce land use options, change the costs of production, and impact the flow of economic rents and the value of the operation.

In order to understand how rights held by a landowner can be changed by others, it is important to understand that there are four additional sticks, or rights, in the bundle of rights associated with property, which are not held by the fee simple landowner. These additional four rights are: 1) the public rights of taxation, 2) the right of taking for public use, 3) the right of regulation, and 4) the right of escheat.



PROPERTY RIGHTS RESERVED TO THE STATE
(Barlowe, P. 332)

These four rights are held by government for use in fulfilling its responsibility to protect the public's health, safety, and welfare. These rights are described by Barlowe as follows:

- 1) TAXATION - the public right of taxation, which gives government the right to tax property held privately. Originally, the primary purpose of taxation was to raise revenue to carry out the Constitutional mandate to "provide for the common

defense and promote the general welfare" of the citizens. Over time, the right of taxation has served additional purposes which Barlowe lists as: to encourage intensive land utilization, attain conservation and environmental goals, promote ownership as a tenure goal, favor particular types of investments, or enhance property values.

- 2) TAKING - the right to take for public use, commonly known as the power of eminent domain. The power of eminent domain gives government the authority to take land for public use, such as roads or utility lines. This right also carries the stipulation or requirement that "just compensation" be paid for any property taken by the government for public use.
- 3) REGULATION - the right of regulation gives the government the power to regulate private land use in the public interest. Because land is not physically taken in regulation, compensation has not generally been required for economic losses associated with regulation. However, one of the key areas of current conflict affecting changing property rights, is: When does a regulation become a taking, which therefore requires compensation?
- 4) ESCHEAT - the right of escheat allows property of an estate to revert to the state whenever a person dies without a will or known heirs who are eligible to receive the property.

In recent years there has been increased conflict between the rights held by government on behalf of the public and the rights held by individual property owners. There are non-landowners who believe some aspects of land belong to everyone, and therefore, through government, on behalf of the public, that they hold some of the rights to determine the use of land. Groups representing different segments of the public have sought to have limitations imposed on landowners in order to, in their view, protect the public.

A simple example is the management of the deer herd in the state as a public resource. The "right to hunt deer" on one's land was, in the past, one of the sticks in the bundle of rights held with land ownership. Over time, with increased human populations, concern increased for deer as a public good which might be eliminated for game purposes, similar to the fate of the nation's buffalo herd. Regulations were imposed which restrict and regulate the methods and timing of deer hunting, as well as the number of deer allowed per hunter. A landowner is no longer allowed unrestricted hunting of deer as a right accompanying the purchase of land. Some conflict in this area has arisen in recent years between the need to protect the deer herd as a public resource and the resulting impact on the private landowner as deer populations have increased and consumed significant quantities of corn and other feeds, thus imposing costs on the agricultural landowner. To some, it appears that the public enjoys the maintenance of the deer herd at the private landowner's expense.

For many reasons, from wetlands restrictions to endangered species protection, landowners are frustrated as they see others try to claim part of the "right to use" the land, that farmers felt they held title to as a result of purchasing the land. Laurie defines the conflicting views as: 1) the belief that property owners have a fundamental and natural right to use and develop their property and to gain economic benefit from it, as long as they do not cause harm to others, and 2) the belief that

all land is held in trust for the benefit of the public, and no landowner has the right to develop the land if to do so is not in the public interest (Laurie, 1991).

When owners and nonowners rights conflict, what rights are assigned to the property owner and what rights are assigned to the nonowner? When the two claims, public and private, are being made on the same rights as how land may be used, one must look at whose claim is valid and what is the basis for the validity of a claim. Samuels states that property isn't property, and a right isn't a right unless, and until it is protected by government. Barlowe supports Samuels' position stating that the "existence of property requires the sanction of a sovereign power to protect rights".

A closer examination of the bundle of rights reveals where key components of the conflicting claims lie. Landowners claim that their fee simple ownership gives them the "right to use" the land. Citizens claim that the government's responsibility to protect the public, gives them the "right to seek regulation" to define and determine in what ways landowners may use their land.

TO POSSESS AND USE

TO CONTROL THE USE OF

PRIVATE PROPERTY RIGHTS
OF THE LANDOWNER

vs

PUBLIC PROTECTION
THROUGH REGULATION

The Constitution supports the citizens' claim that the right to use private property is subject to the power of the government exercised in the fulfillment of its responsibility to protect the health, safety, and welfare of the public.

Of increasing concern to farm landowners is a sense that the government protection of rights is changing from previous support for landowners' rights to increasing support of citizens' rights to control the use of privately held land. While a landowner continues to manage an agricultural operation, forces outside the farm operation are dictating changes an agricultural producer must make in the management of the operation.

The change in government support of landowners' rights is creating conflict. One source of conflict involves the stick in the government's set of rights or power over private property which gives government the right to "take for public use".

TO TAKE FOR PUBLIC USE

GOVERNMENT POWER OVER PRIVATE PROPERTY

The "right to take" is often used in a straightforward manner, such as when the government "takes" land for a public road. Government takings are at times necessary, but our founding fathers also recognized the value and rights of private land ownership, which led them to include in the Fifth Amendment to the Constitution, the requirement that government provide

"just compensation" to any landowner whose property is taken for public use. The conflict centers around differing perspectives on the definition of what actions by government constitute a taking of property, and therefore requires compensation to the landowner?

Government regulation such as the designation of a wetland and the restriction of its' use, may be considered by a landowner to be a "taking" of the use of the property.

The decision regarding whether wetlands restrictions are a regulation or a taking determines who pays the cost of preserving wetlands for this recently determined public good. If restricting wetlands is a regulation imposed on the landowner, then the landowner pays the cost of the public good through the reduced economic value and reduced economic returns available as a result of the restricted land use options. If wetlands restrictions are designated as a taking, then the landowner will be compensated for the lost value and taxpayers will pay the cost of preserving wetlands for the public good. This leaves landowners uncertain as to what responsibility they, as private landowners, have for providing for the public resource. While farmers have historically viewed themselves as caretakers of the land, the term seems to be encompassing a broader responsibility than farmers have been consciously aware of in the past. Caretakers or stewards of the land primarily meant that farmers felt a sense of responsibility to maintain the productivity of the soil, by minimizing erosion of the top soil, by crop

rotation, and by replacing nutrients and organic matter utilized during cropping programs. As environmental stewards, farmers are now, also to be responsible for protecting wetlands, protecting surface and groundwater, and protecting endangered species and biodiversity. Farmers are being asked to view the land as part of the ecosystem.

Land Use control and who pays the cost issues have moved beyond a designation of rights. Both sides share some of the rights associated with land use. The issue has expanded to, who holds the power to have their rights count? Whose rights are protected by government? Can citizens demand and receive zero tolerance of agricultural contamination in groundwater or will some level be deemed allowable which still protects public health? Can citizens demand no net loss of wetlands and require landowners to absorb the cost? These are questions yet to be resolved. Ultimately the courts will determine whose rights will be upheld, and who will pay the costs.

Rights are only applicable for a given time and are subject to change. If a landowner previously farmed a wetland, or now wants to farm the wetland, but is no longer allowed to do so, then the rights to use the wetland have been reallocated. A farmer, holding title to a piece of property, but not all the rights to use the land, may feel frustrated when the right to farm newly protected wetlands are diminished or prohibited. Conflicts occur as landowners either try to regain the right they previously held, or if they try to seek compensation for the

value of the right they feel was taken through the application of the government's regulatory powers.

While possessing property rights permits the landowner legal access and use of land, the management options of land use available depend on the specific rights contained in the bundle accompanying a given piece of property, and whether and how those rights are affected by government under its taking powers and its regulatory powers. Two adjoining parcels of land may be permitted different uses according to what rights are held by the landowner. A landowner may sell a permanent conservation easement for one piece of property, and reserve it for another which would differentiate the uses available on the two pieces of property. The bundle of rights for both properties may also be changed by outside forces through government regulation seeking to enhance a public resource, or through governmental taking and the award of compensation for a public purpose.

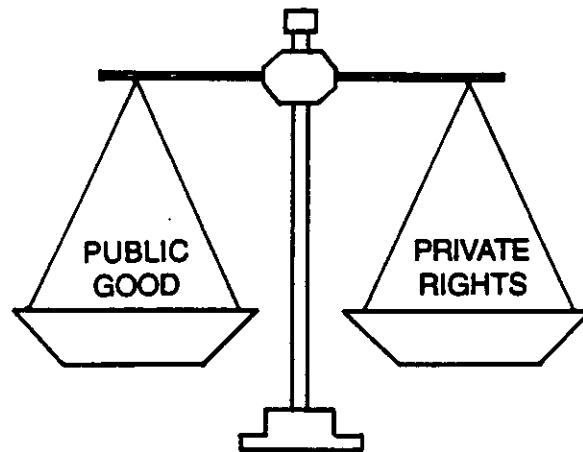
Private property rights are dynamic. They can be changed either voluntarily through sale, lease, exchange, gift, or inheritance, or involuntarily through taking or regulation.

CHAPTER 2

THE "RIGHT TO USE" LAND RESOURCES

Of the rights held by a landowner, the right to use the land and its resources, as compared with the right to sell, mortgage, or otherwise dispose of the land, is the right facing the greatest challenges and change. Early ownership rights to land use were relatively basic, unrestricted, and unquestioned. As the percentage of people who own agricultural land resources has diminished, and as land use practices have changed, citizens not owning farm land resources have begun to challenge agricultural landowners' right to engage in some of the current farm land use practices.

There are non-farm landowners who believe they hold a right to have a say in how farm land is used, because agricultural land uses can impact or effect the "public resource". There are, however, differences in opinion over the definition of public good, and as in any debate, the definition of terms can determine or influence the outcome.



THE RIGHT TO USE:
A Debate Over Private Rights vs. Public Good

The conflict between those who own and utilize agricultural lands, and those who do not, is in part related to the fact that new agricultural production practices and technologies have redefined the components of the "right to use" stick in the bundle of rights. Examples include the use of confined, concentrated livestock housing, mentioned previously, and the accompanying use of alley scrapers or flush systems to clean the barns, the use of fertilizers to replace nutrients, and the use of pesticides to control insects. These new technologies have had the effect of redefining the landowner's bundle of rights associated with land use and the management options available.

History illustrates that the adaption of technology results in new land uses and a redefinition of land use rights. These newly defined rights may be permitted, approved, or sanctioned by the government. The land uses and newly defined rights may result in new and unwanted impacts on the land resources. Regulations may be imposed to limit the right, or public acquisition of the right may be undertaken, in order to protect the well-being of the public from the externalities or harmful effects of land use practices.

Many of the current conflicts over land uses, deal with the newer, technologically-based rights that have been more recently defined in the landowner's bundle of rights. When one's land use practices did not affect others, there was little conflict. But now, as non-farm landowners, feel impacted by the land use practices of agricultural landowners, there are conflicts

regarding how much say non-farm landowners can have in determining agricultural land use practices permitted. There also is conflict over what rights agricultural landowners have to make the decisions regarding the land use practices implemented on their land.

Non-farm landowners may seek to restrict agricultural landowners' rights through regulation, such as zoning, wetlands designation and protection, endangered species protection, and environmental protection. The rights to take these actions are held by government, outside the bundle of landownership rights. But these governmental actions can greatly affect the bundle of rights held by a landowner.

When one purchases a unit of land and the accompanying rights, the purchase is for the specific set of rights held at that time. The rights attached to land ownership are dynamic and may be changed at any time. A recent change has occurred in Erath County, Texas, where dairy cattle numbers have greatly increased in the past few years. Non-dairy farmers, and smaller dairy farmers are concerned about the impact of the increased number of larger dairy herds in the county. When land is purchased for livestock operations, the purchase is subject to receiving the required permits for livestock production. This new condition associated with the purchase of land, is a recognition of the fact that the "right to livestock production beyond 250 head" is no longer automatically attached to the land. It has, in fact, been separated from the basic bundle of rights.

The right of livestock production beyond 250 head is dependent on land ownership, but it is also subject to approval granted by a permit from the Texas Water Commission, which is based on compliance with required building and lagoon specifications, as well as specific management practices.

This illustrates the vulnerability of the secondary land use rights. They are subject to change at any time. It is interesting to note with the increased restrictions on new dairy operations in Texas, that dairy farmers seeking to relocate from California are now moving to New Mexico where there are less restrictions. Based on the experience in Texas, one might anticipate that the property rights associated with livestock production, held by agricultural landowners in New Mexico may be changed or altered in the future. A change in the actual rights held with landownership, does in fact, change the economic opportunity associated with a given piece of land.

CHAPTER 3

REGULATORY TAKINGS

The United States Constitution provides government with the authority to "take" private property for the benefit of society as a whole. By the use of the power of eminent domain, government may take land through a procedure known as condemnation. However, the Constitution also requires the government to provide "just compensation" to the landowner when property is taken for a public good. Current conflicts over property rights revolve around whether regulation imposed upon landowners, which alter their economic activity associated with their right to use their land, constitutes a "taking" of their property which would entitle them to compensation.

Situations not involving physical invasion are called "regulatory takings", or "inverse condemnation". Carlson indicates that landowners who sense that a new regulation or public imposition on their land detracts from the land's value or productivity without physically taking it, can argue through the courts that they are a victim of inverse condemnation which means that the government is using regulations to benefit the public without compensating the landowner (Carlson, 1991). Blume and Rubinfeld state, "Courts have found that on occasion regulation has gone too far and constitutes a taking." However, "the Court has had difficulty deciding when regulations go too far, and has yet to articulate a clear standard for determining when such

government activity should be considered a taking of property. The Court's willingness to support an expansive role for compensation has increased over time. The more extensive the adverse economic impact and the more the government activity interferes with distinct investment-backed expectations, the more likely that a taking will be found." (Blume and Rubinfeld, 1987, pp. 55-57).

The Constitution protects the right of citizens to own and use land resources. It also gives government the right to "take" land for the public good and to "regulate" land use to maintain the health, safety, and welfare of the public.

ALTERNATIVE MEANS TO CONTROLLING LAND USE

PRIVATE
RIGHTS

vs

PUBLIC
GOOD

RIGHT TO USE LAND RESOURCES

1. Private Ownership Rights to the Use of Land Resources are Protected by the Government.
or
2. Private Land Use Rights are Restricted by the Government to Provide or Protect a Public Good.
by
 - A) Using the Power of Eminent Domain, in which the Use of Land is Taken Through Condemnation With Compensation.
or
 - B) Through Regulation, in which the Use of Land is Taken by the Government Without Compensation.

Both the private rights of landownership and the rights of providing for the public good are granted in the Constitution and protected by the government. When the two rights come in conflict, it must be determined whose rights are given priority.

Though different administrative processes are involved, the major difference between "taking" and "regulating" is that compensation is required when land is taken and compensation is not required when land is regulated. The key question then to be answered is, when does regulation become a taking? Historically, takings were predominately the physical taking and use of a piece of property and the question of compensation wasn't questioned. It was agreed that compensation was appropriate when property was taken for a public use.

Conflicts are occurring as government restricts the use of land resources by a landowner, which alters the economic returns of the land and may lower the value of the land. The issue is, should compensation be required when government action reduces the economic value of land, such as acres newly designated as wetlands and subject to restrictions which limit its' economic potential.

Landowners often believe they should be compensated for the constrained use of their land or the loss of certain uses of their land which are caused by others and are beyond their control. Others believe the landowners should absorb the loss because they have not been fully paying environmental costs

resulting from past uses. On individual parcels of land, the issue will work itself out over time because future sales of the land will reflect the reduced rights accompanying the land, and the new owner will be aware of the elements contained in the bundle of rights at the time of the purchase. The problem primarily faces current landowners who find their rights changed, midstream, so to speak, and their value reduced through external public actions. And the question remains, should the landowner be compensated, and if so, in which situations?

Opinions on the issue vary. Hamilton's perspective is that as a general rule in "takings" cases, the court will decide in favor of the government restrictions if they promote an important public interest and if the landowner retains some economic use of the property (Hamilton, 1990). Sands offers another perspective, in that private landowners should be compensated if the public at large decides that saving endangered plants and animals is in the national interest (Sands, 1992). And Judge Scalia wrote in the South Carolina Lucas case, "Regulations that prohibit all economically beneficial use of land cannot be newly legislated, or decreed, but must inhere in the title itself, in the restrictions that background principles of the state's law of property and nuisance already placed upon ownership"(1992).

In a Slip Opinion of the Supreme Court in 1987, the Court stated,

"The Constitution dictates compensation as the remedy for government interference with property rights amounting to a taking. The Fifth Amendment does not prohibit the taking of private property, but instead

places a condition on the exercise of the power. It is designed not to limit the governmental interference with property rights per se, but rather to secure compensation in the event of otherwise proper interference amounting to a taking. Thus, government action that works a taking of property rights necessarily implicates the constitutional obligation to pay just compensation." (Supreme Court Slip Opinion No. 85-1199, p. 8).

In the absence of a clear definition of which regulatory takings require compensation, the decisions will be made primarily on a case by case basis in the near term, within the judicial system through court challenges. Over time, a framework for compensation for some regulatory takings is likely to evolve.

CHAPTER 4

ENVIRONMENTAL PROTECTION: AN UNDERLYING FORCE IN CHANGING PROPERTY RIGHTS

One of the major forces underlying the challenges to landowners' rights to the use of their land, is concern for the environment. There are concerns that some current agricultural land uses are creating health risks for society-at-large, such as contaminated groundwater? There are also concerns that land uses of today may reduce the land use capability of the future. The level of concern over possible environmental degradation, and therefore the need for environmental protection has increased in recent years, as illustrated by the inclusion, of conservation provisions in the 1985 Farm Bill.

Environmental concerns fall primarily into three major categories: productivity, health, and habitat.

PRODUCTIVITY: The ability of our land resources to continue to provide for the food production needs of our society in the future, is a recognized concern. In the dust bowl days of the 1930's, society realized that land use practices had contributed to the loss of top soil through wind and water erosion and that the loss of top soil reduced the productivity or food production capacity of the land. Conservation practices were developed and implemented to save the soil. There was little conflict over changes in land use rights associated with soil conservation because the problem was well recognized. While there were some

instances where farmers were literally forced to comply with erosion control practices, for the most part, the need for the environmentally responsible changes was agreed upon by both landowners and non-landowners. Because erosion control was recognized as a public good, the government encouraged such practices with cost sharing. The use of cost sharing resulted in implementation of practices that not only conserved soil, but also resulted in economic returns on the investments of the landowners. Soil conservation was perceived as good for the landowner and good for society. In today's terminology, it was a win-win situation.

Concerns about productivity and the possibility of soil depletion through intensive cropping led to the development and use of chemicals to increase productivity of the soil. Fertilizers are used to replace nitrogen, phosphorus, and potassium nutrients removed from the soil through the harvest of crops. Herbicides replace a portion of man's labor used in weed control, and their use results in increased production yields and lower costs per unit of production. Technological research continues to seek methods increasing the productivity of our food producing assets.

But now, when food production methods result in abundant supplies, and the cost of food is low, new questions are being asked. As a policy issue, would concerns about remote and little known endangered species be as great if there was a scarcity of basic food supplies. The luxury of abundant food frees a society

to ask new questions, such as: Do we need more technology? Does a given technology pose a health risk? Will it damage our resources? In other words, we can go beyond asking, what are the benefits, to what are the risks, and what are the long term effects, of new technologies used to produce food and agricultural products.

Perhaps this time of abundant food supply is the time to devote energy and efforts to insure that our food production resources will be available and productive in the future. A time to make changes to protect our land and water resources.

HEALTH: A second concern regarding land uses, is the impact of these uses on the health of consumers and society as a whole. In previous times, there was an awareness of health benefits that could be derived from various foods or plants in the environment, but there was not as clear an awareness of the possible health risks associated with foods and plants, or their production practices. With recognition of the potential health risks and the increased ability of the scientific community to test for substances and to assess risks, consumers are demanding increased assurances of the safety of their food and their water supplies.

New technologies have provided new production options, and have in effect redefined the property rights agricultural landowners possess. As an example, the development of engines and fossil fuels resulted in increased production efficiencies per man hour of labor. The need to store the fuel resulted in the manufacture and use of above ground and underground fuel

storage tanks. Once the technology was developed, the right to erect or bury a fuel tank on your own land came with the purchase of land. For the most part the tanks themselves were not a problem until they began to leak as a result of structural deterioration due to age. Over time, continued leakage of fuel from a tank into the surrounding soil and the eventual seepage of fuel down through the soil into an aquifer containing groundwater, can cause contamination of the groundwater. This is clearly an undesirable side effect, or externality, of the use of underground storage tanks.

As clean groundwater is recognized as a desirable public objective, governmental funds are being used to assist in the costs associated with digging up leaking underground fuel tanks, and the removal or clean-up of contaminated soil around the tanks.

While work has gone forward in the efforts to prevent fuel from reaching the groundwater, a new problem has surfaced, that of the high cost of digging up existing tanks and hauling away any surrounding contaminated soil. In their efforts to protect the groundwater, some felt that no action was too great to address this problem. As the cost of environmental clean-up exceeded the funds allocated and with increased clean-up funds being difficult to obtain, government is now looking closer at prioritizing the sites to be cleaned up. While the government is responsible for overseeing the condition of our nation's

groundwater, in the interest of protecting the health and well-being of the citizens, it may not be able to afford a "spare no cost" approach.

HABITAT: A third environmental concern affecting or threatening property rights, concerns the environment as a habitat. The development of this country has reduced the natural areas available for habitats. Roads, houses, factories and shopping malls have all contributed to the destruction of natural areas. A specific area of current concern is the significant loss or destruction of many of our nations' wetlands, and agriculture is being held as responsible for the greatest loss of wetlands in this country.

Wetlands, as well as tropical rain forests in other countries, provide the necessary habitat for a wide variety of plant and animal species. The loss of habitat threatens the survival of some species and we are finding an increasing number of plants and animals being added to the endangered species lists. Not only does loss of habitat threaten the existence of animals and plants, there is concern that if habitat loss continues, in the long run, the environment will not be able to support humans.

The solution put forward is to treat the protection of habitat, and the preservation of endangered species and biodiversity, as a right held by society as a whole. In other words, preservation of habitat such as wetlands, is in the public

interest, and this right can supersede the right of the landowner to determine the use of the land.

When a landowner has some of his non-swamp land declared a wetland, which cannot be altered, the landowner immediately loses rights to use the designated land, and the value of that land may be reduced for other purposes.

The call to protect the environment is the major underlying force causing the changes in property rights that agricultural landowners are experiencing. Some of the frustration felt by agricultural landowners, comes not from a disagreement over the principle of environmental protection, but rather over the range and magnitude of the changes being made in a relatively short time, and sometimes without adequate assurance the need for the changes are scientifically based. And there is the frustration related to the added costs or lost value associated with complying with new regulations.

The overall goal of environmental protection is a shared goal. The disagreements are over, what is, in fact, necessary for environmental protection, and who should pay for that which is necessary.

CHAPTER 5

THE ECONOMICS OF CHANGING PROPERTY RIGHTS FOR ENVIRONMENTAL PROTECTION

What are the costs associated with seeking and implementing regulations that change the property rights of agricultural landowners, and who bears the costs? These are questions that require further consideration when examining the underlying dynamics of changing property rights.

Costs associated with regulations are not clear cut because implementation of a regulation restricting land use is not a market transaction in which the rights desired by a non-holder are purchased from one holding the desired rights.

The cost of changing a property right fall into three predominant categories: 1) the costs associated with achieving the change, 2) the cost of implementing and administering the change, and 3) the costs resulting from the change in either loss of use or in cost of compliance. While the first two are transaction costs associated with achieving a change, the third category reflects impact costs resulting from the implementation of the change.

Because those seeking a change do not pay all the costs associated with the change, their cost of undertaking an objective is artificially low. The question then is raised, would the change continue to be desirable if those seeking the change were also responsible for additional costs, such as

compensation to those whose rights are diminished by the change, or an alternative where those standing the costs were compensated by those receiving the benefits.

A case in point, is the addition of more plants and animals to the endangered species list. At present, a group can present their case for adding a species to the endangered list. Once it is added, their costs cease (except for their share of administrative costs paid by taxpayers). Costs are shifted to the landowner who's use of land is restricted, and its economic value or potential diminished. When only partial costs are considered, it may be relatively easy to seek a change affecting others, but which will not place any new burdens or restrictions on those seeking the change. If on the other hand, the administration costs and the cost of compensating landowners for lost rights, were also calculated into the cost of the desired change, would the change still be deemed desirable?

The key question at the heart of the property rights debate is: Who should pay the costs? Thompson summarizes the issue by saying the "debate is largely about how the cost of protecting natural resources and the environment should be shared between landowners as a class and the public at large. The more land is regulated to protect resources, the more landowners bear the expense in reduced property values. The more frequently regulation requires compensation of landowners for takings, the more the public must pay -- or the more environmental harm it must tolerate" (Thompson, 1992).

The cost resulting from new and increasing regulations to protect our environmental resources are diverse and substantial. They range from maintaining habitats to protecting groundwater. The debate over who will pay for the costs of environmental protection will continue. The issue is made more complicated by the fact that the benefits of a proposed regulation are difficult to quantify, and because current costs may be imposed for future benefits.

Two alternatives for achieving environmental objectives associated with land uses are, 1) to regulate, and therefore mandate the change, but to assist the landowner by paying for some of the costs of complying with the regulation. This results in a shared economic burden and may be like "sugar that helps the medicine go down". If the change being made is for the "public good", then there is often a belief by landowners that the public should share in the cost.

A second means of achieving some environmental objectives is through education with a goal of voluntary changes in land use practices. While this approach can not achieve all objectives, it may be a cost effective means of achieving some objectives, and it may reduce the animosity generated when regulations are imposed.

Education may also help smooth the way for new regulations. An example would be the new wetlands restrictions that have been imposed on landowners. Waterloo and Fargo indicate that "until recently, wetlands have been seen as nuisances and public health

threats, fit only to be drained, filled and put to productive use"(1992). Draining wet spots in fields was considered a positive agricultural practice which improved productivity and helped keep the cost of food production down. Because tiling was viewed as a positive agricultural practice, with benefits to society as a whole, the government helped pay the costs of tiling and encouraged more land to be drained. In what seemed a relatively short period of time, it was determined that virtually all wet spots were important to the health and well being of our environment, and those draining land were causing degradation of the environment. An educational effort on the benefits of wetlands in reducing nitrate contamination of runoff, and their value in helping maintain water tables could have helped smooth the transition from a philosophy in which draining wet spots was a positive action to a philosophy in which persons found draining or filling wet spots should be fined, or in the case of Bill Ellen of Maryland, should be put in jail (Minter, 1993).

The current conflicts concerning new environmental protection regulations may be less over the objectives sought, than over the means being used to achieve the objectives. Education would not have solved all problems associated with new wetlands restrictions, but it would have been beneficial to have included it as a component in the transition.

Although voluntary changes in land use practices achieved through education will yield less control over a land use right than either regulation or the purchase of the right, it may

provide a more cost effective alternative for achieving some land use changes. Education can build on the concern many farmers already have for the environment and may lead them to expand their conservation efforts. Crosson and Brubaker indicate, "allegiance to a conservation ethic is widespread; under its influence many farmers undoubtedly undertake conservation measures not justified by private economic calculation. In effect, they pay a self-assessed tax toward a public goal" (1982, pg. 179).

When environmental objectives are found to be in the public interest, a course of action to achieve those objectives is sought and developed. In the early stages of this environmental protection movement currently underway, those with solely environmental interests in land use appear able to determine the land use changes necessary for environmental protection, and to impose those changes on others without regard for the economic impact. In their view, when a practice is determined to harm the environment, then it must be halted, regardless of the consequences.

The full cost of regulation, as well as the benefits, of environmental protection will only be realized over time. It may be necessary, in fact to add a fourth cost component to the earlier discussion. The fourth cost would be the cost borne by consumers in terms of higher prices paid for goods purchased that were produced under increased regulation. An example is the dramatically increasing lumber prices currently being experienced

in this country. Lumber has increased from a price of \$270/1000 board feet of lumber in November, 1992 to a price of \$464 in February, 1993 (Losse, 1993). While the causes for this increase are widely disputed, one view is that environmental protection regulation is a contributing factor to the higher prices. Losee writes, "Rancorous litigation involving the northern spotted owl, an endangered species, has tied up 90% of the roughly three billion board feet of timber sales from federal land that Congress approved in 1992" (Losee, 1993). Was the possibility of higher lumber costs calculated into the cost and deemed justifiable in protecting the spotted owl?

Environmental protection is a generally accepted and worthy goal, but the question is, are all environmental objectives of equal importance and are they all necessary at any cost, and who decides?

As a country, the United States needs to develop a list of environmental objectives, which are ranked in importance, and then to determine the economic impact society is willing to bear for each objective. When only a small portion of the cost is borne by those seeking the changes, a larger number of changes appear feasible and therefore worth the cost. In other words, the costs may be deemed acceptable, when someone else is paying them. Ultimately, all the costs associated with regulation, environmental protection, and changing property rights, become a factor in the economics of the country.

CHAPTER 6

CHANGING PROPERTY RIGHTS AS AN ONGOING PROCESS

Change has always been a fact of life, and in these times, change is occurring at an even faster rate. While this statement applies to society as a whole, it also applies to an agricultural landowner's right to use their land. In a recent *Progressive Farmer* survey, seventy-five percent of the farmers said they had less control over their land than they did five years ago (September/October 1992). The question for farmers is: What will the changes be and how will they affect my operation and my ability to make a living? With increased regulation of land uses to achieve environmental objectives for the public good, private agricultural landowners will need to be flexible to adapt to the changes.

In the past, changes in property rights did not appear as threatening because they occurred more gradually, and often voluntarily. By contrast, over the past few years, new regulations and changing views about property rights have made farmers aware that recent changes are only the initial results of public action to direct private land use.

An illustration of current dialogue regarding possible changes in property rights and land use practices is found in the November-December issue of the *Journal of Soil and Water Conservation*. Francis puts forward a concept for protecting

groundwater from excess nitrogen which would treat the purchase of N fertilizer as a right that could be restricted through regulation. In his concept,

"A regulatory mechanism would restrict the purchase of N fertilizer. This approach would limit the amount of fertilizer sold to farmers based on soil test and/or crop needs analysis in proportion to the number of acres farmed.

One approach would be to annually issue coupons or certificates to each farmer allowing the purchase of a given quantity of N fertilizer. Again the fertilizer allotment to each farmer would be determined from acreage under production and past farm yield averages. Other localized information, such as soil type, residual soil inorganic N, or the availability of manure, could also be used in determining purchase limits.

A variation of this approach would be selling rights to purchase a given quantity of fertilizer. First, a public agency, on the basis of water quality would decide how much N fertilizer could be used that year and would print certificates totaling this amount. Next, these certificates which would allow holder rights to purchase an indicated quantity of N fertilizer, would be sold. The price of the certificates could be set by the regulatory agency or determined by open bidding among prospective buyers. After the initial sale of these rights by the agency, individual users and non-users, such as environmental groups, could influence the amount of N fertilizer used in a given year by either trying politically to change the number of rights issued by the agency or by buying up rights and then not using them."

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Proposals, such as this, create increased uncertainty about farming in the future for agricultural landowners. Farmers feel they are losing more and more control over production decisions

in their agricultural operations. If outside forces are going to determine a greater share of management practices or decisions, then what role is left for the farmer? What will it mean to "own" land? To what extent does the land belong to everyone? As regulations for environmental protection increase and private property rights change, these are questions farmers must contemplate. Change requires adjustment and farmers need to understand what the changes are and how they affect them, and the operation of their farm.

How will we go forward in regulating land use practices to protect the environment? We can operate in an "us" vs "them" approach where one side wins and one side loses when issues are addressed, or we can operate as members of the same team (inhabitants of the earth) and seek to develop win-win solutions which allow us to move forward together.

The animal waste guidelines incorporated into Michigan's Right to Farm Law are an example of a win-win situation. Through cooperation of the Department of Agriculture and the Department of Natural Resources, a process is in place which allows farmers to operate their farms in an environmentally responsible manner. If, however, a farmer is found to be responsible for causing pollution, the producer will be given an opportunity to correct the situation or else they will face the full force of environmental protection legislation. This process does not add an unnecessary regulatory burden on agricultural producers who are operating in an environmental responsible manner, but at the

same time, it offers protection of the environment from unacceptable agricultural practices. This process achieves the objective of maintaining economic viability and environmental protection simultaneously.

New technologies must also be given an opportunity to help address some of our newly emerging environmental problems. In Okeechobee County, Florida, one farmer is testing a process in which the water from his dairy lagoon is run through a tank containing an iron solution. The iron binds with the phosphorus to remove much of it before the water is released from the farm. Tests of the runoff indicate the process is effective and it may offer an alternative to simply preventing dairies to exist in the Okeechobee area.

We must find ways to protect and care for the environment while still living and interacting with it. While regulation will undoubtedly be one component, communication, education, and new technologies can also play a role as we strive to achieve both environmental protection and economic viability.

By its nature, property rights is a dynamic concept and agricultural landowners will continue to experience changes in their property rights due to regulation for environmental protection.

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