

The Economics of Sustainability

March 2, 2011

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- Avarice or pure miserliness;
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- Avarice or pure miserliness;
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- **Improvement, which means to enjoy a gradually improving standard of living over time;**
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- Avarice or pure miserliness;
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- Avarice or pure miserliness;
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- **Pride, which concerns leaving money to heirs (the bequest motive);**
- Avarice or pure miserliness;
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- **Avarice or pure miserliness;**
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- Avarice or pure miserliness;
- **Calculation, which refers to the wish to earn interest;**
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- Avarice or pure miserliness;
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- Down-payment.

Why Conserve?

Why would anyone want to conserve (save) anything for next period?

- Precaution, which implies building up a reserve against unforeseen contingencies;
- Foresight, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive);
- Improvement, which means to enjoy a gradually improving standard of living over time;
- Independence, which refers to the need to feel independent and to have the power to do things;
- Pride, which concerns leaving money to heirs (the bequest motive);
- Avarice or pure miserliness;
- Calculation, which refers to the wish to earn interest;
- Enterprise, which means having the freedom to invest money if and when it is favourable;
- **Down-payment.**

Why Conserve?

- Saving
- **Why**
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

Why Conserve?

- Saving
- **Why**
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

Why would anyone want to conserve anything for the *distant* future?

Why Conserve?

- Saving
- **Why**
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

Why would anyone want to conserve anything for the *distant* future?

- Uncertainty about the end of life

Why Conserve?

- Saving
- **Why**
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

Why would anyone want to conserve anything for the *distant* future?

- Uncertainty about the end of life
- Altruism

Why Conserve?

- Saving
- **Why**
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

Why would anyone want to conserve anything for the *distant* future?

- Uncertainty about the end of life
- Altruism
- Opportunism/strategic motives

Market Imperfections

- Saving
- Why
- **Imperfect**
- Externality
- Common
- Collapse
- Ostrum

Market Imperfections

- Saving
- Why
- **Imperfect**
- Externality
- Common
- Collapse
- Ostrum

Why do individually optimal actions not lead to a sustainable world?

Market Imperfections

- Saving
- Why
- **Imperfect**
- Externality
- Common
- Collapse
- Ostrum

Why do individually optimal actions not lead to a sustainable world?

- Benefits of natural or social capital depletion are often privatized, while costs are often externalized

Market Imperfections

- Saving
- Why
- **Imperfect**
- Externality
- Common
- Collapse
- Ostrum

Why do individually optimal actions not lead to a sustainable world?

- Benefits of natural or social capital depletion are often privatized, while costs are often externalized
- Natural capital (particularly that which is exhaustible) is often undervalued by society since individuals are not fully aware of the real cost of its depletion

Market Imperfections

- Saving
- Why
- **Imperfect**
- Externality
- Common
- Collapse
- Ostrum

Why do individually optimal actions not lead to a sustainable world?

- Benefits of natural or social capital depletion are often privatized, while costs are often externalized
- Natural capital (particularly that which is exhaustible) is often undervalued by society since individuals are not fully aware of the real cost of its depletion
- Discount rates that are too high

Market Imperfections

- Saving
- Why
- **Imperfect**
- Externality
- Common
- Collapse
- Ostrum

Why do individually optimal actions not lead to a sustainable world?

- Benefits of natural or social capital depletion are often privatized, while costs are often externalized
- Natural capital (particularly that which is exhaustible) is often undervalued by society since individuals are not fully aware of the real cost of its depletion
- Discount rates that are too high
- Imperfect information about consumption, external effects, costs, benefits, persistence, and so on

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution
- Air pollution

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution
- Air pollution
- Noise pollution

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution
- Air pollution
- Noise pollution
- Waste pollution

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution
- Air pollution
- Noise pollution
- Waste pollution
- Scenic view pollution

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution
- Air pollution
- Noise pollution
- Waste pollution
- Scenic view pollution
- Congestion with non-excludable resources

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution
- Air pollution
- Noise pollution
- Waste pollution
- Scenic view pollution
- Congestion with non-excludable resources
- Congestion with excludable resources

Externalities

- Saving
- Why
- Imperfect
- **Externality**
- Common
- Collapse
- Ostrum

An externality exists whenever the welfare of some agent, either a firm or a household, depends not only on his or her activities, but also on activities under the control of some other agent.

- Water pollution
- Air pollution
- Noise pollution
- Waste pollution
- Scenic view pollution
- Congestion with non-excludable resources
- Congestion with excludable resources
- Common pool resources

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources
 - Rival

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources
 - Rival
 - Non-excludable

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources
 - Rival
 - Non-excludable

Or exclusion costs are very high

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources
 - Rival
 - Non-excludable
- When no one owns a resource, users have no incentive to conserve for the future, or to consider the foregone benefits to others

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources
 - Rival
 - Non-excludable
- When no one owns a resource, users have no incentive to conserve for the future, or to consider the foregone benefits to others
- Examples

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

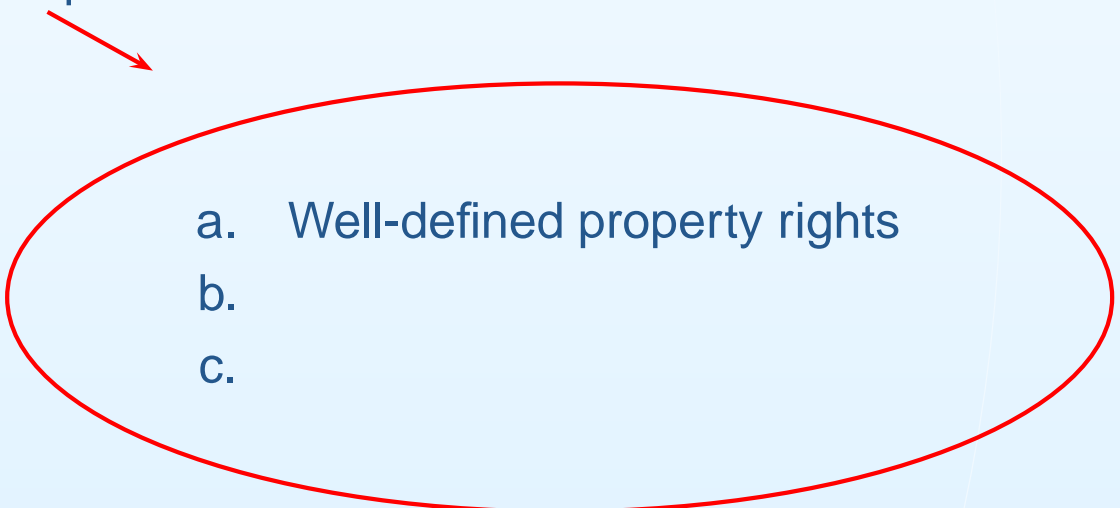
Common-Pool Resources

- Characteristics of common pool resources
 - Rival
 - Non-excludable
- When no one owns a resource, users have no incentive to conserve for the future, or to consider the foregone benefits to others
- Examples
- Solving the problem

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

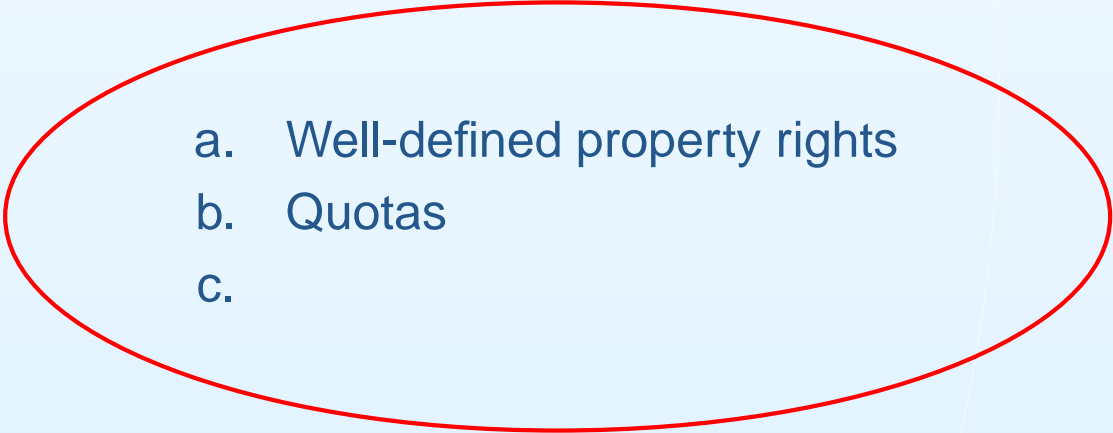
- Characteristics of common pool resources
 - Rival
 - Non-excludable
- When no one owns a resource, users have no incentive to conserve for the future, or to consider the foregone benefits to others
- Examples
- Solving the problem

- 
- a. Well-defined property rights
 - b.
 - c.

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources
 - Rival
 - Non-excludable
- When no one owns a resource, users have no incentive to conserve for the future, or to consider the foregone benefits to others
- Examples
- Solving the problem

- 
- a. Well-defined property rights
 - b. Quotas
 - c.

Common-Pool Resources

- Saving
- Why
- Imperfect
- Externality
- **Common**
- Collapse
- Ostrum

- Characteristics of common pool resources
 - Rival
 - Non-excludable
- When no one owns a resource, users have no incentive to conserve for the future, or to consider the foregone benefits to others
- Examples
- Solving the problem

- a. Well-defined property rights
- b. Quotas
- c. Regulations

Why Resources Collapse?

- Saving
- Why
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

Why Resources Collapse?

- Saving
- Why
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

- Very large resource systems

Why Resources Collapse?

- Saving
- Why
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

- Very large resource systems
- Highly valuable resource systems

Why Resources Collapse?

- Saving
- Why
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

- Very large resource systems
- Highly valuable resource systems
- Open-access resource systems

Why Resources Collapse?

- Saving
- Why
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

- Very large resource systems
- Highly valuable resource systems
- Open-access resource systems
- Resource harvesters are diverse
- Resource harvesters do not communicate

Why Resources Collapse?

- Saving
- Why
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

- Very large resource systems
- Highly valuable resource systems
- Open-access resource systems
- Resource harvesters are diverse
- Resource harvesters do not communicate

Why Resources Collapse?

- Saving
- Why
- Imperfect
- Externality
- Common
- Collapse
- Ostrum

- Very large resource systems
- Highly valuable resource systems
- Open-access resource systems
- Resource harvesters are diverse
- Resource harvesters do not communicate
- Resource harvesters fail to develop rules and norms for managing the resource

Social Ecological System

Social, economic, and political settings

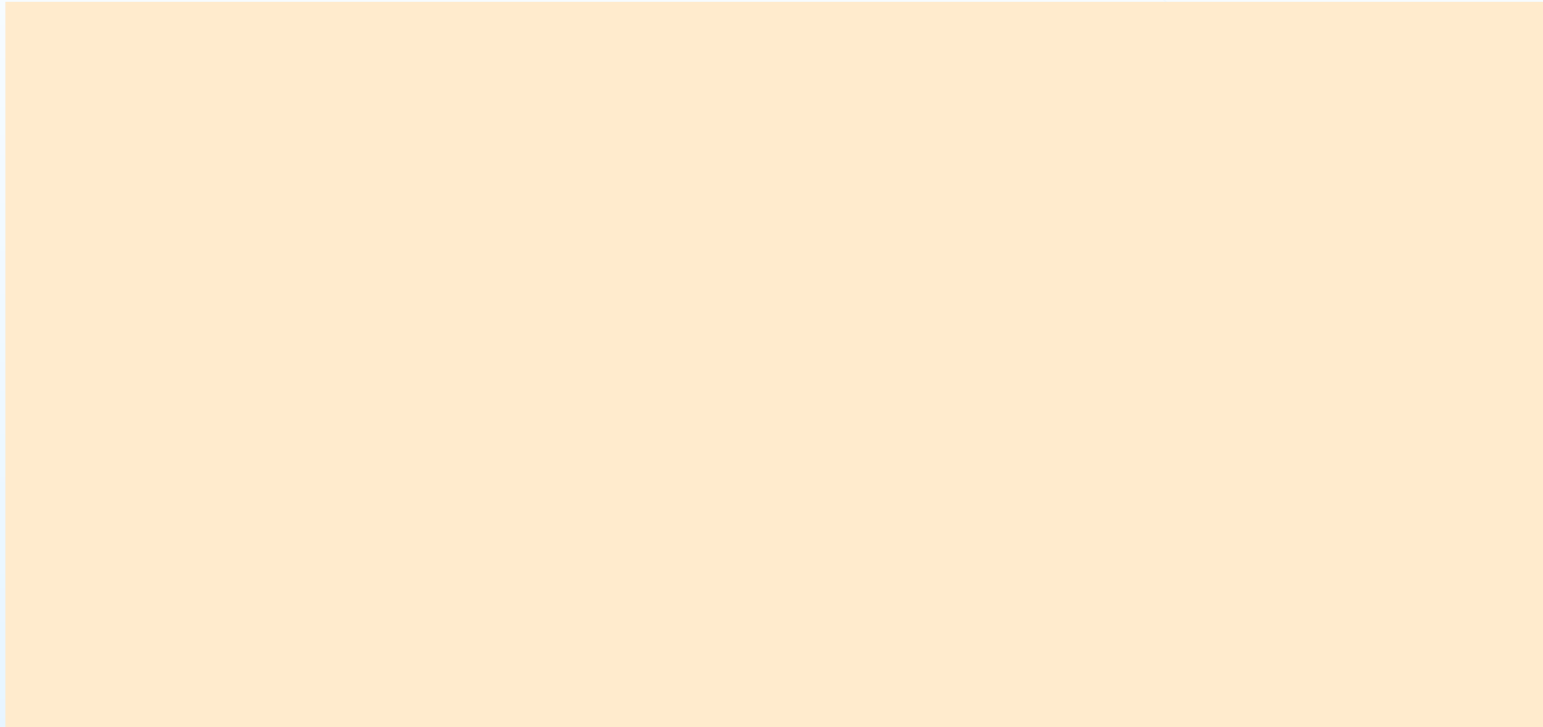
Social Ecological System

Social, economic, and political settings

Related Ecosystems

Social Ecological System

Social, economic, and political settings



Related Ecosystems

Social Ecological System

Social, economic, and political settings

Resource System

Related Ecosystems

Social Ecological System

Social, economic, and political settings

Resource System

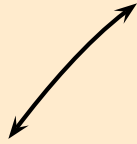
Resource Units

Related Ecosystems

Social Ecological System

Social, economic, and political settings

Resource System



Resource Units

Related Ecosystems

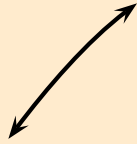
Social Ecological System

Social, economic, and political settings

Resource System

Governance System

Resource Units



Related Ecosystems

Social Ecological System

Social, economic, and political settings

Resource System

Governance System

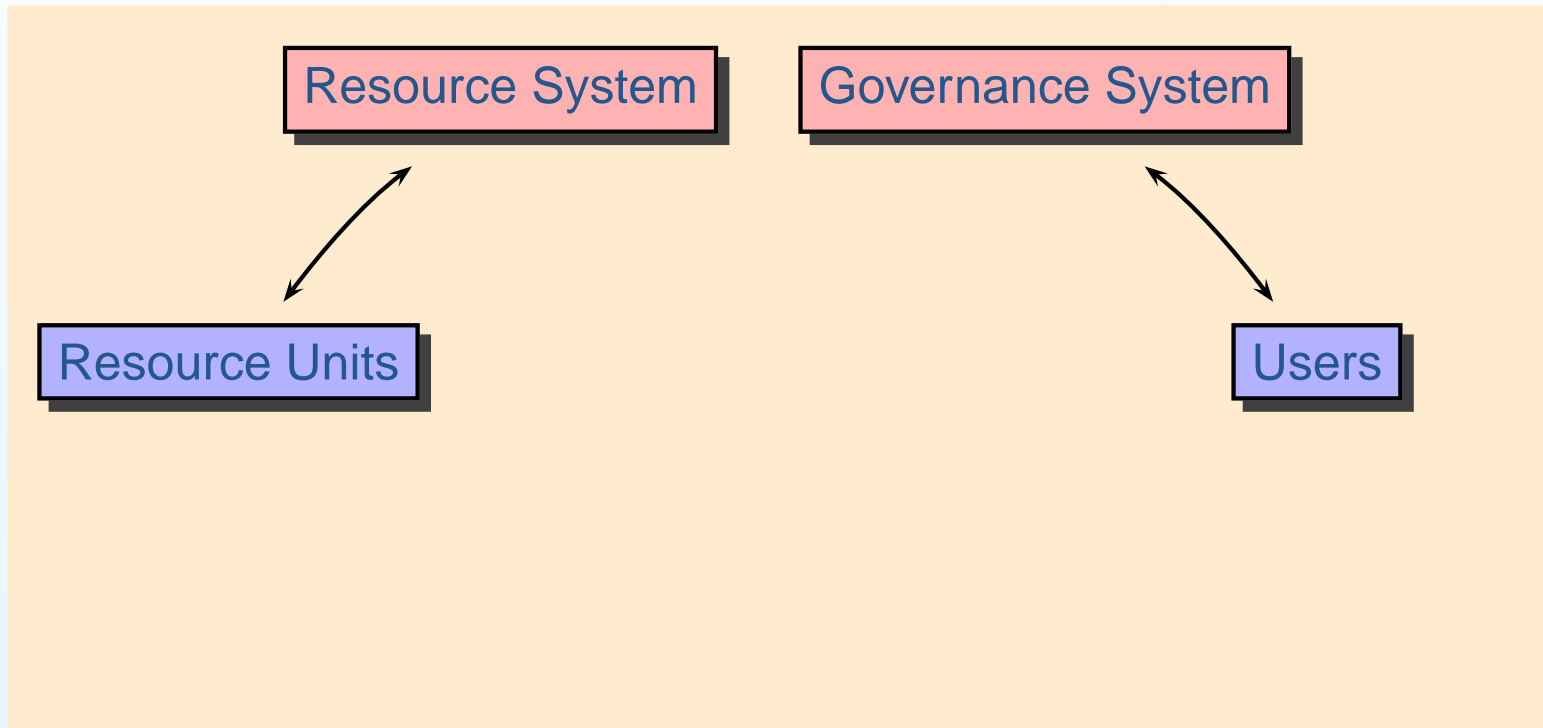
Resource Units

Users

Related Ecosystems

Social Ecological System

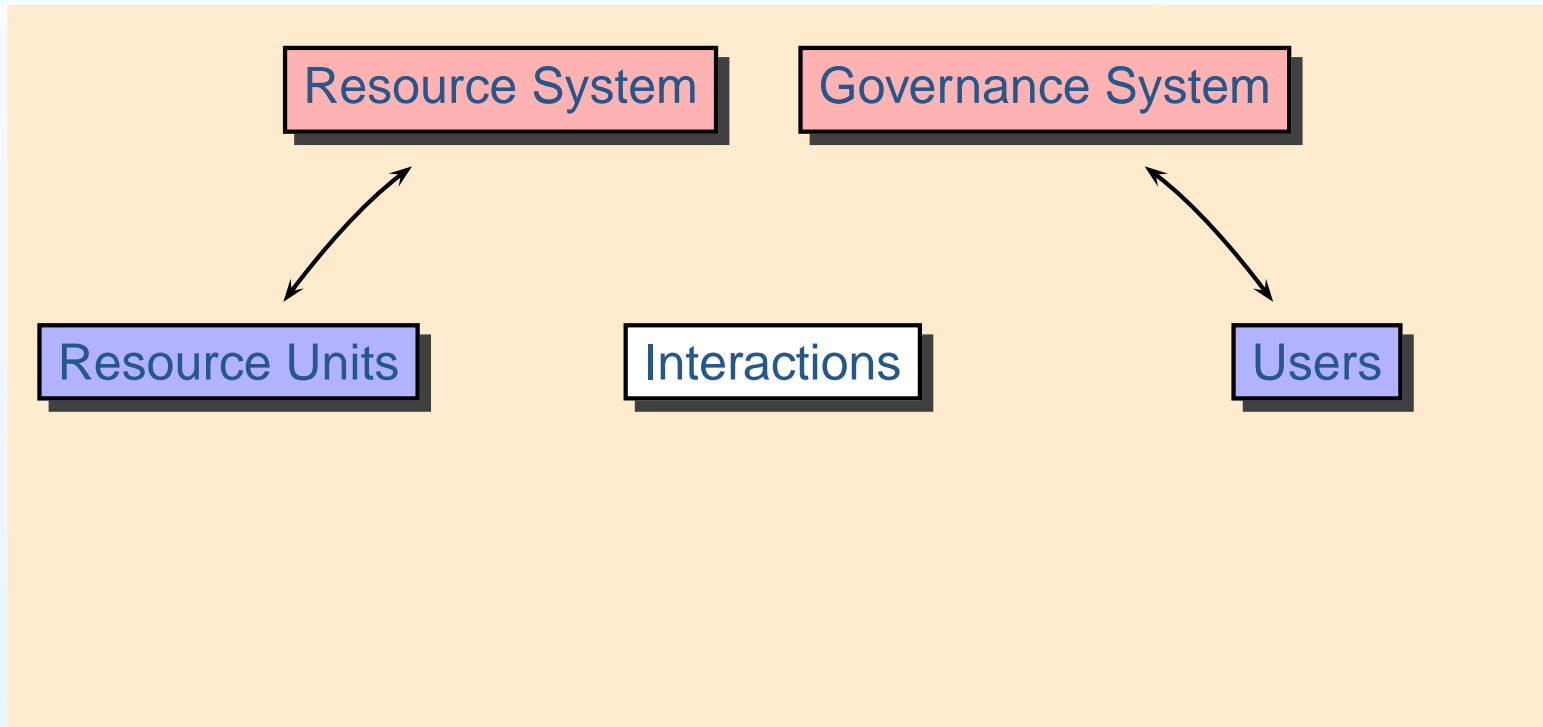
Social, economic, and political settings



Related Ecosystems

Social Ecological System

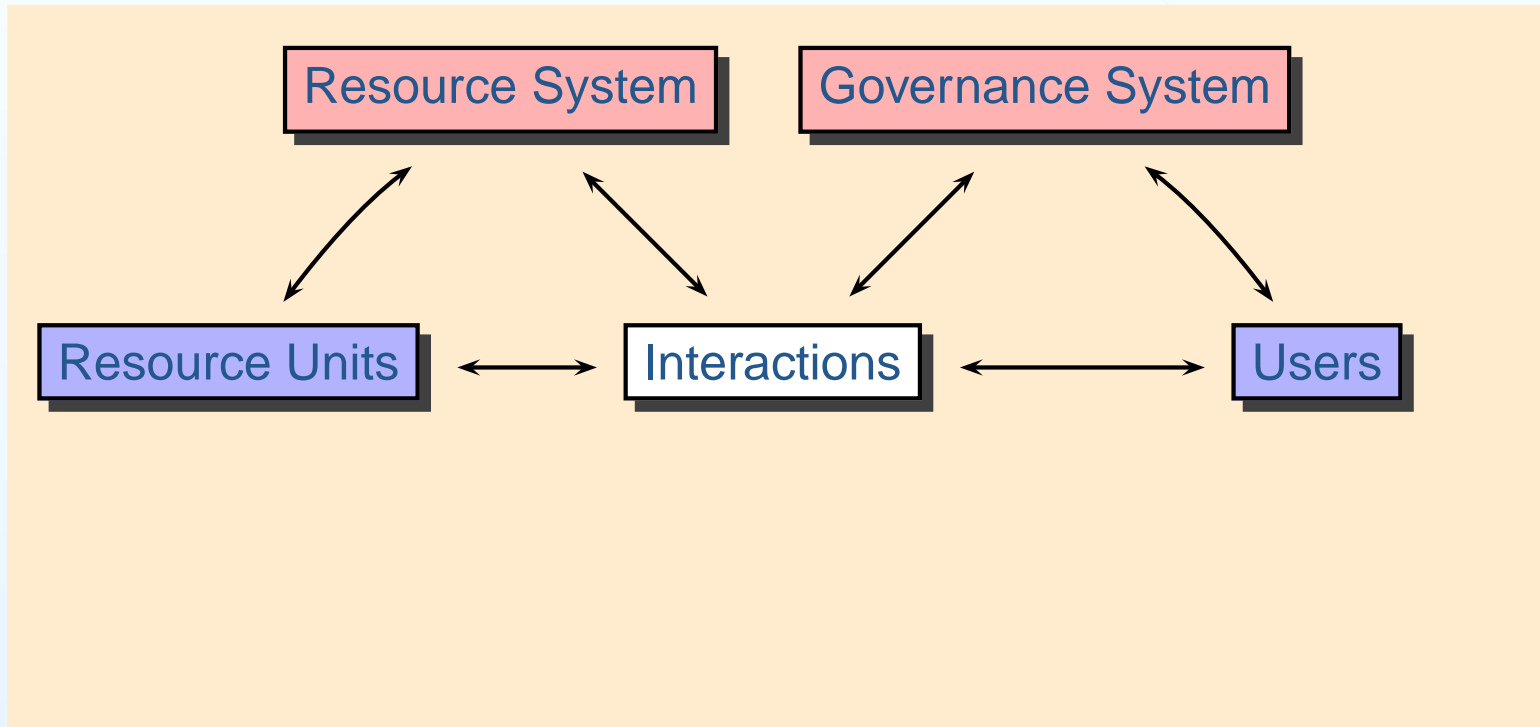
Social, economic, and political settings



Related Ecosystems

Social Ecological System

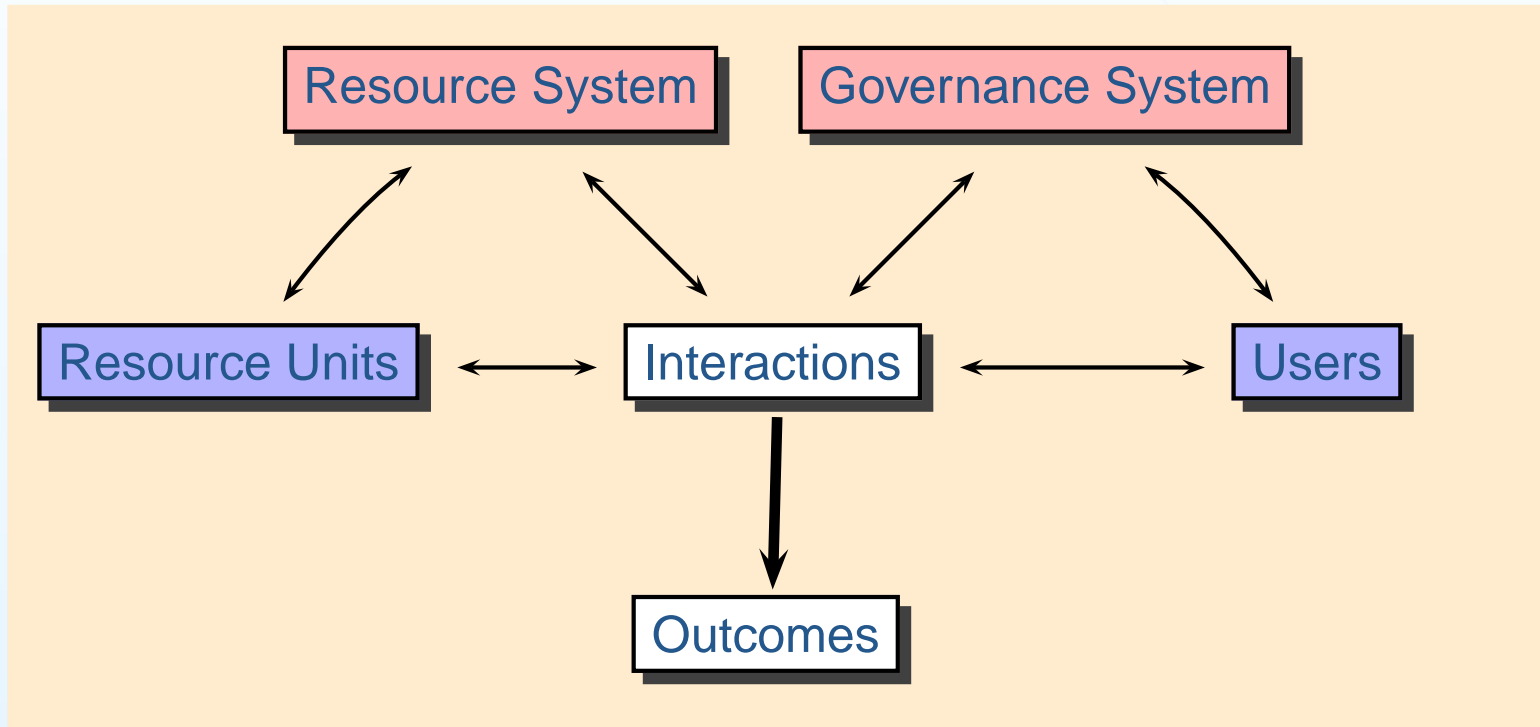
Social, economic, and political settings



Related Ecosystems

Social Ecological System

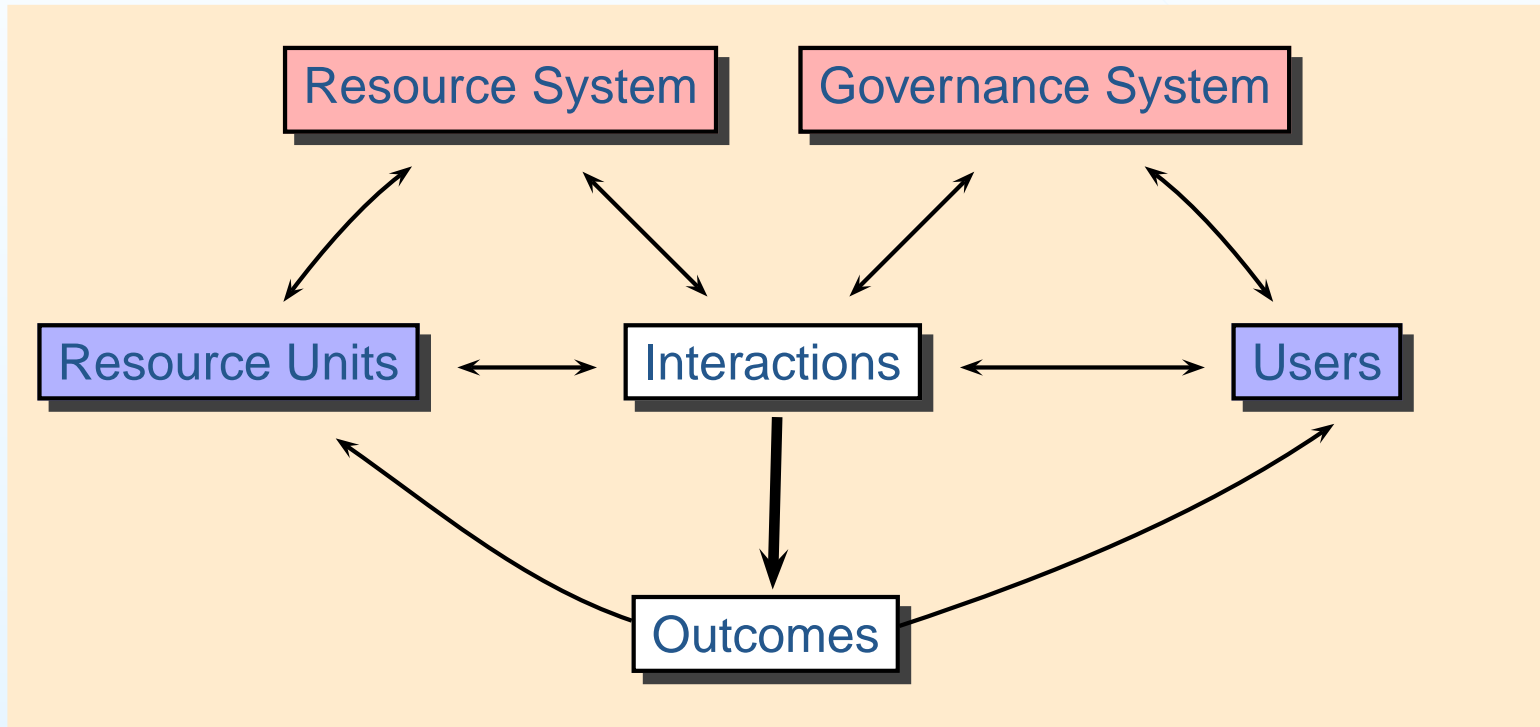
Social, economic, and political settings



Related Ecosystems

Social Ecological System

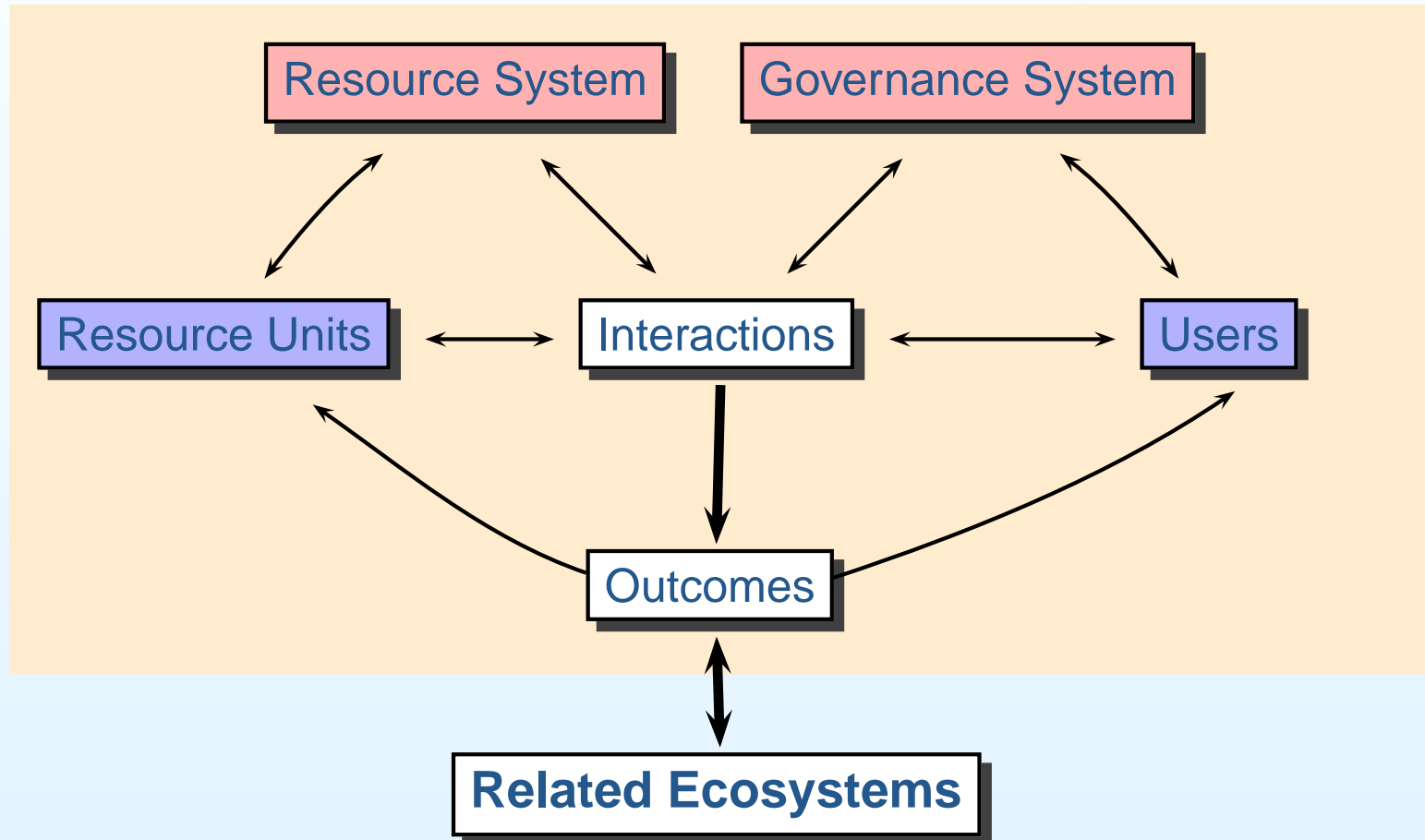
Social, economic, and political settings



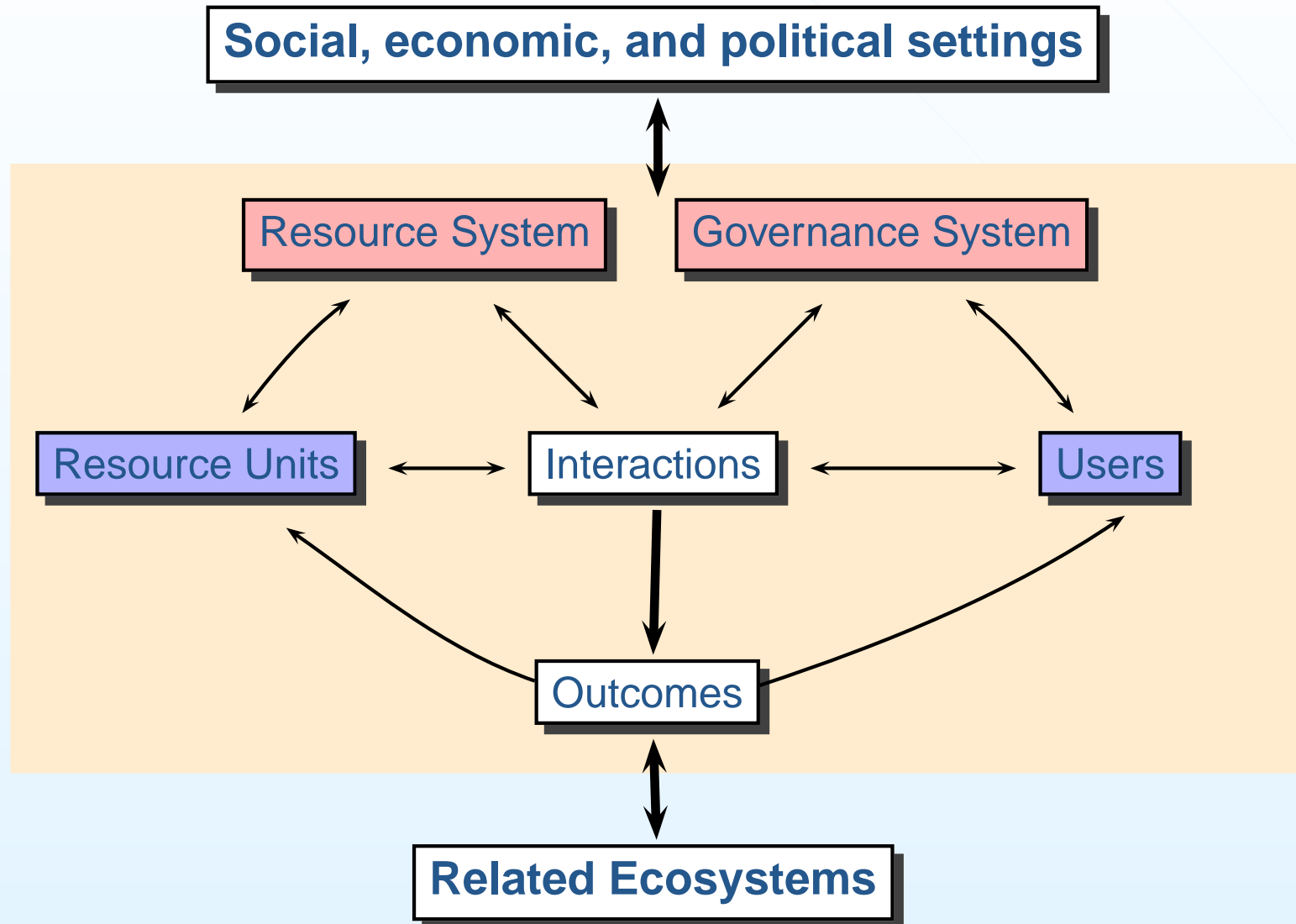
Related Ecosystems

Social Ecological System

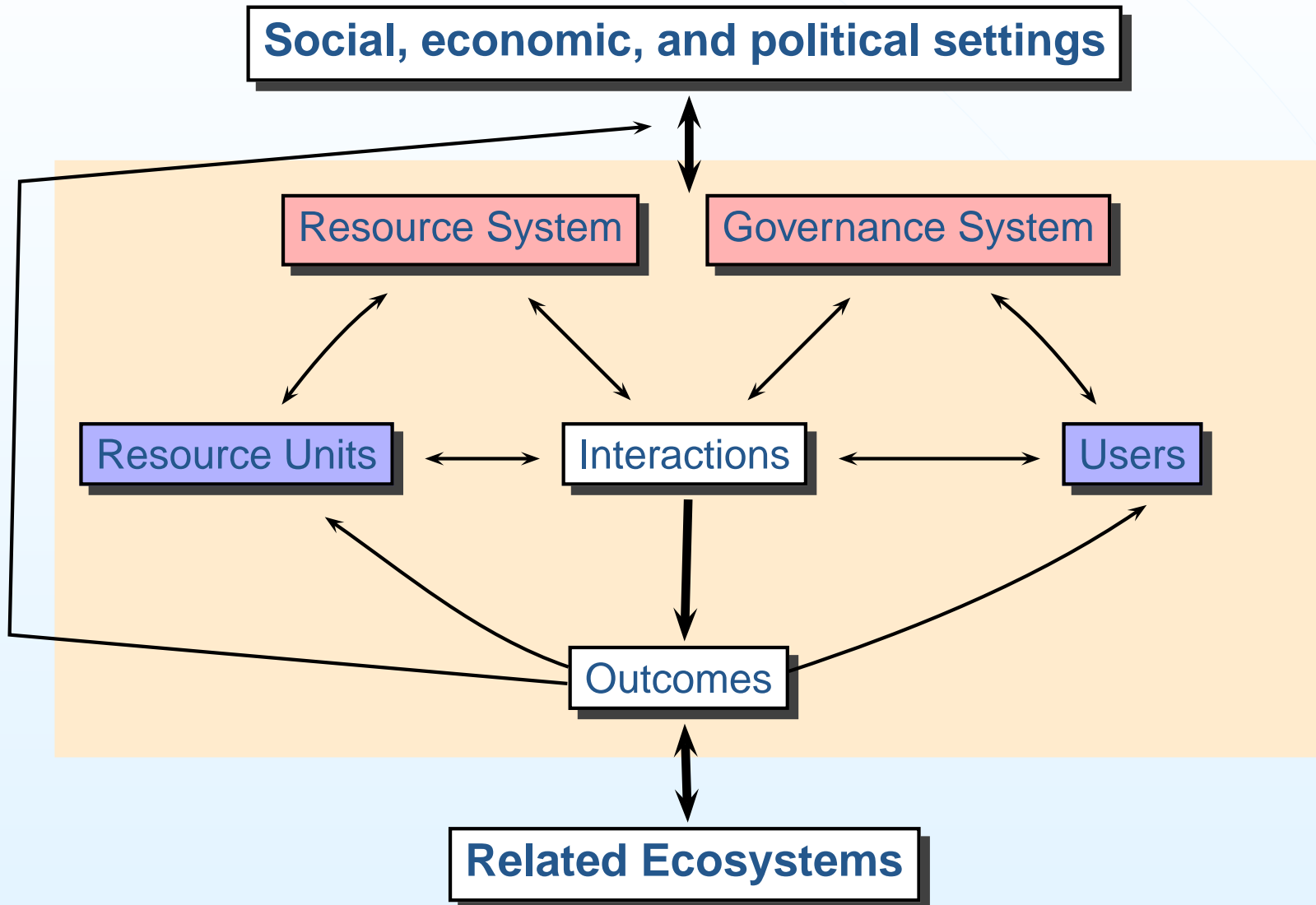
Social, economic, and political settings



Social Ecological System



Social Ecological System



Social Ecological System

