 **By: Dr. Rita Littrell**

**Economic Development:**

**Scarcity of Resources**

**FOCUS:**

**Overview:**

In this activity, students work in groups to use their allocated resources to fulfill the wants and needs of their citizenry. They discover that resources are scarce and therefore decisions must be made due to this resulting scarcity. Their assigned goal is to help their country develop so that everyone can have a better standard of living. Deciding what is most important is very challenging. The problem solving, creative thinking and group interaction set the stage for a lot of thinking and learning. Debriefing is necessary to identify the concepts experienced from the simulation. The experience can be referred to time and time again throughout the semester --- making it worth the time to prepare and implement this timeless version of a tried and true economic education activity.

**Objectives:**

* Experience scarcity of resources
* Identify and consume productive resources
* Discuss the best choices to create economic development in a less developed country
* Relate the experience to real world events

**Background Information:**

The quality of life in industrialized or developed countries differs greatly from life in less developed countries. In less developed countries life expectancy is less. Many families are large because the children care for the elderly and many children don’t make it to adulthood. The family provides the labor for the farm so more people is believed to be better. Literacy levels are much lower. In some countries resources are not spent on educating women. Running water or electricity are luxuries for the middle or upper income households. In many of these developing countries most people are in the lower income levels with a few people owning vast majorities of the wealth and reaping the benefits derived from the productive resources of the country. In each country the problems are unique. Finding solutions to improve the well-being of the families is a huge challenge.

Economic development generally refers to the sustained actions of policymakers and communities that promote the standard of living and economic health of a country, state or community. These actions frequently include development of human capital, development of critical infrastructure, regional competitiveness, environmental sustainability, social inclusion, health, safety, literacy and other initiatives. Economic development is a policy intervention endeavor with aims of economic and social well-being of people. Economic growth involves market productivity and increased gross domestic product (GDP).

Among the high income nations identified by the World Bank are United States, Canada, Japan, United Kingdom, France and Germany. These nations control 80% of the world’s resources. Low or middle income nations are categorized as developing. People in these countries have access to fewer goods and services than most people in the industrialized nations. In low-income nations, many people are unable to meet basic needs and are in poverty. The do not have the resources to grow or enough income to buy the essentials – food, shelter, clothing and other basic needs.

Policy makers are always searching for ways to improve the lifestyles of people in poverty. There is no simple formula. But there are some things that can make a difference such as:

* **Education or development of human capital** embodies the education and health of the workers. More knowledgeable workers are more productive as are healthy workers. Education of women has proven to be very effective as they are usually responsible for the health of the family and oftentimes the family finances.
* **Infrastructure** refers to the technical structures that support a society, such as [roads](http://en.wikipedia.org/wiki/Road), [water supply](http://en.wikipedia.org/wiki/Water_supply), [sewers](http://en.wikipedia.org/wiki/Sewage), [electrical grids](http://en.wikipedia.org/wiki/Electrical_grid), [dams,](http://en.wikipedia.org/wiki/Telecommunication) production facilities, railroads, waterways, and so forth. It can be defined as "the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions. It provides ways to get information about health, weather and news as well as ways to transport people or goods
* **Health care** is critical for life-style and for productive reasons. Workers who have dysentery or AIDS are not very productive if they can work at all. Healthy workers are much more productive and can experience a better quality of life.
* **Banking sector** supports economic growth. Entrepreneurs, households and businesses can get loans to grow their companies or improve their well-being. Having a banking sector enables saving which results in investment. It can support economic growth by providing loans to people who want to build or expand companies. The money that is saved is invested. Having funds to support research and development is critical to economic growth and development.
* **Higher education** provides opportunities to learn about ways to improve lives in your country or the world. It includes research and development that improves lives and production. These people conduct research which develops new technologies and capital tools that increase productivity.
* **Entrepreneurship** has proven to be a critical factor in developing new productive capacity. Entrepreneurs use resources and produce companies and jobs for other people. Entrepreneurship is essential to economic development and growth. Local entrepreneurs use available resources to fulfill market needs. Growing your own is highly recommended.
* **Trade** enables a person to specialize and therefore be more productive. Removing barriers to trade results in higher incomes for many people.
* **Value added** goods bring more income in a global economy. Natural resourceshave minimal value in the global economy. You can sell coffee, beans or rice to the world market. They bring a minimal amount of income. By adding value to a commodity or natural resource, you can increase the income level by a large amount. An example with coffee is that the beans bring a very small price but if you roast them and package the coffee, it brings much more on the world market. To do this you need the know-how and the capital tools to roast and package the coffee.

Countries with large endowments of natural resources were often considered rich. But some countries with lots of resources do not have high standards of living and some without have very high incomes.

In less developed, developing or developed countries there is always a scarcity of resources to produce the things that the people want or need. The resources available differ considerably from country to country. In developed countries they may have large pools of educated workers and lots of technology to use in production. The best choice for them is to produce using capital intensive production. In less developed countries they may have lots of uneducated workers with little technology. They will likely produce using labor-intensive practices. In developed countries the wants of the citizens may change. Caring for the environment may be a higher priority in a developed country. In a developing country they may care about the environment but having food on the table could be the first concern. Making the best decisions about production and allocation of the resulting goods and services is always a challenge and differs in each situation. In this activity, students decide how to allocate their scarce resources as they try to create the highest level of economic development for their country.

**Additional Information:**

The World Bank is the ultimate source of development rankings and information. <http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/0,,pagePK:50004410~piPK:36602~theSitePK:29708,00.html>

For a map showing income levels of countries of the world.

<http://data.worldbank.org/indicator/NY.GNP.PCAP.CD/countries/1W?display=map>

For interesting information on global rankings of many types go to aneki.com ranking + records. Your students will have great fun analyzing the many different lists from happiest to most endangered animals. <http://www.aneki.com/>

**Curriculum Multi-tasking:**

* Economics: scarcity, technology, capital tools, natural resources, allocation, and human capital
* Creative problem solving
* Decision making
* Team work

**Grade Level:** 3rd to college

**Time Frame:** 1 class period

**PREPARE:**

**Materials:**

1. Something with which to reward the winning team such as fifteen pieces of candy or bonus points.
2. 4 manila envelopes filled with the following items.

**Country 1: Include Production Sheet for Country 1**

1 sheet of blue paper (label as blue)

3 sheets of yellow paper

**Country 2: Include Production Sheet for Country 2**

1 pair of scissors

1 glue stick

2 pencils

1 ruler

2 sheet of red paper

7 paper clips

**Country 3: Include Production Sheet for Country 3**

1 pair of scissors

10 toothpicks

2 sheets of white paper

1 sheet of red paper

1 sheet of grey paper (label as grey)

20” yarn

2 paperclips

**Country 4: Include Production Sheet for Country 4**

1 sheet of green paper

1 sheet of yellow paper

1 sheet of white paper

1 sheet of red paper

1 sheet of purple paper

**Construct:**

1. Fill each manila envelope as described above. Label each with the country number.
2. C:\Documents and Settings\amym\Local Settings\Temporary Internet Files\Content.IE5\NYF5PF9I\MC900044987[1].wmfConsider ways to divide class unevenly with fewer students in groups 2 and 3 and larger numbers in groups 1 and 4, representing less developed countries. Do not use this terminology early in the lesson.
3. Determine spaces where each group can gather to discuss and produce the items called for in their packets.
4. Label colored sheets of paper as to minimize confusion.

**TEACH:**

**Introduction:**

Ask students to think about and describe their daily activities. Discuss school, food, recreation, education, families, games, etc. Then name countries from different continents such as Kenya, Hungary, China, Bangladesh, and Bolivia. Ask students to discuss what they think a day in the life of children in these countries is like. Please be sure to avoid stereotypes and explain that some children in these countries attend school and live in safe and secure environments but that there are many who are not fortunate to attend school because they need to help support their families. Some children gather fire wood all day or walk miles to carry clean water home. Some resources available to help your students conceptualize life of children in other countries are listed at the end of this lesson.

Conduct a discussion of what they think should be basic rights of every child. These should include safety, love, water, food, shelter, clothing and education.

Reading *Beatrice’s Goat* by Page McBrier is a good introduction to a sustainable development model utilized by Heifer International. In this story, Beatrice’s family receives a goat as a gift. The goat provides nutrition through the milk and then an income as they sell the extra milk. The kids from the goat are given to other families so they can improve their standard of living. The income earned from selling the milk sends Beatrice to school and then helps them to build a house that does not leak. This is based on a true story. Beatrice ended up studying in Arkansas at the University of Arkansas Clinton School of Public Service.

**Activities:**

**Preparation:**

1. Divide students into four groups as described. For a class of 30 divide as listed: group 1 – 9 students; group 2 – 4 students; group 3 – 5 students; group 4 – 12 students.
2. Have each group gather together and to:
   1. Create a fictitious name for their country;
   2. Select a team member to serve as the ruler or leader of the country; and
   3. Select a title for the ruler such as tsarina, emperor, president, princess, etc.
3. Have the leader come to the front of the class.
4. Check to see that all students have put away all of their personal materials. Explain that they may use only resources in the packets.

**Procedures:**

1. Give each team leader the packet of resources with their team number on it. Explain that they are not to open it until instructed.
2. Send team leaders back to their groups with the packets. Explain that each team is to satisfy the wants of their citizens. To do this, they want to make decisions that will help the country to develop. The task sheet tells how many development points they get for providing goods or services to their citizens. **The goal is to reach the highest level of development in the allotted time frame.**
3. Explain very explicitly that students may use only the materials in the packets and that their team will be disqualified if they use other resources. Note that if it says one per citizen that each team member is a citizen.
4. Explain that the team who achieves the highest level of development will receive whatever incentive you have offered – candy, bonus points, etc.
5. Note that paperclips symbolize transportation and that you must have one to leave your country.
6. When you feel that everyone understands, tell the students to open their packets and begin.
7. Students will quickly realize that they do not have the appropriate selection of resources to meet the needs of their citizens. They may ask if they can trade. Do not suggest they trade, let them discover that it is necessary. You may indicate that trade is allowed when asked.
8. Give students 10 to 15 minutes to work on production of their goods and services or until one group completes their production tasks.
9. Stop groups from working so that everyone can participate in the debriefing session.
10. Ask the following questions.

**Debriefing Questions & Understandings:**

1. **Which countries had all the resources needed to satisfy their wants?** (*none*) Point out that this is the problem of scarcity. **Scarcity** means not having enough resources to satisfy everyone’s wants.
2. **Which resources were scarce?** (*Allow several countries to share what resources they wanted. Some will note that they did not have rulers, scissors, or things to use to create the products needed.*)
3. **Which countries had the most workers?** (countries 1 and 4)
4. **Which countries had a lot of capital tools, or things that are human made and used in production?** (countries 2 and 3) When a country has access to a lot of capital tools for production, they are **capital intensive**. When they have little capital but a lot of workers, they are **labor intensive**. Countries determine how to produce the things they need based on their resource endowments:
   * **human resources** – labor or workers,
   * **natural resources** – things that are naturally occurring, and
   * **capital tools** – tools used to produce other goods or services.
5. Ask students if they solved some problems based on prior knowledge such as knowing the distance to your knuckle is approximately one inch. **As countries develop, they improve their human resources through education and training.** This is known as investment in **human capital.**
6. **Which resources were the scarcest?** (*red and purple paper and scissors*) **Why?** *(Red and purple were needed for higher education and health care; scissors made things nicer)*
7. **What was done given the scarce resources?** (*trade occurred*) Did everyone benefit? (*They should not have traded unless they benefitted since it was free trade.*)
8. Have representatives from each country share some of the goods and services they produced? **In what ways do they differ?** (*quality varies with some being very neat and others very ragged*)
9. **What might be a reason there was so much variation in production?** (*There were differences in the quantity and quality of the resources, skills of workers, personal preferences, willingness to trade, and geography.*)
10. **Ask students how they chose which development projects to produce and the benefits of that particular product?** (*answers will vary but should include ideas such as healthy workers are more productive; factories provide jobs and produce goods that are valued in the global marketplace; educated workers are more productive; communication facilitates government and other services; infrastructure can help businesses to produce more efficiently and to transport goods to local or global markets)*
11. **Ask students what they think will help to make standards of living better for the people in these countries?** (*answers will vary but should include investment in factories, infrastructure, health care and higher education*)
12. You may need to explain that **productivity** is the creation of more goods or services with the same quantity of resources or the production of the same quantity of goods and services with fewer resources. In other works, producing more with less.
13. **Ask why people traded.** (*They trade voluntarily because they expect to be better off.*)

**Closure:**

Discuss current examples of attempts to improve economic development in countries around the globe in order to provide better standards of living for all people and children. Encourage students to continue to find examples to share from the news for weeks to come. Discuss technological changes that have helped countries to develop.

**Evaluation:**

**Performance Task:**

1. Complete a Costs/Benefits analysis for a development project. For example, the costs and benefits of creating universities or building factories. Have students work in groups of three to complete these. A form is provided at the end of the lesson.

**CONNECT:**

**Books:**

* ***Children Just Like Me*** – by Barnabas and Anabel Kindersley; DK Publishing, Inc.; ISBN 0-7894-02017; Lesson using this book and comparing children’s lifestyles can be found at <http://bmcee.uark.edu/339.asp> - title *Children of the World*.
* ***Beatrice’s Goat*** – by Page McBrier; Simon & Schuster; ISBN 978-0689824609
* ***If America Were a Village*** – by David J. Smith; Kids Can Press; ISBN 978-1-55453-344-2
* ***One Hen*** –by Katie Smith Milway; Kids Can Press; ISBN 978-1-55453-028-1; for a debriefing guide - <http://bmcee.uark.edu/336.asp> .
* ***Give a Goat*** – by Jan West Schrock; Tilbury House, Publishers; ISBN 978-0-88448-301
* ***Planting the Trees of Kenya: The Story of Wangari Maathai*** – by Claire A. Nivola; Frances Foster Books; ISBN 978-0-0374-39918-4
* ***The Good Garden*** – by Katie Smith Milway; <http://www.barnesandnoble.com/w/the-good-garden-katie-smith-milway/1111425139?ean=9781554534883> .
* ***Wangari’s Trees of Peace*** – by Jeanette Winter; Harcourt, Inc.; ISBN 978-0-15-206545-4
* ***The Pot That Juan Built***  - by Nancy Andrews-Goebel; Lee & Low Books Inc.; ISBN 978-1-58430-038-0
* ***Listen to the Wind*** – by Greg Mortenson and Susan Roth; Dial Books for Young Readers; ISBN 978-0-8037-3058-8

**Standards:**

[**Standard 15: Growth**](http://www.ncee.net/ea/standards/standard.php?sid=14)

Investment in factories, machinery, new technology, and in the health, education and training of people can raise future standards of living.

Grade 4:

* When workers learn and practice new skills they are improving their human capital.
* Workers can improve their productivity by improving their human capital.
* Workers can improve their productivity by using physical capital such as tools and machinery.

Grade 8:

* Standards of living increase as the productivity of labor improves.
* Technological change is an advance in knowledge leading to new and improved goods and services and better ways of producing them.

**Production Sheet – Country 1**

**Country Name:**

You must produce food, clothing, shelter, and water before producing other goods or services for your citizenry. Then make decisions about the production of manufacturing, education, communication, infrastructure, banking, health care and higher education. All production must follow the specifications below. Your desire is to achieve the highest level of development. You may find that resources are scarce so you will need to make choices about what is most important for your country. Development points are as follows. In order to travel to a country to trade, you must have transportation which is symbolized by a paper clip.

Food: 3 Manufacturing: 5

Clothing: 3 Education: 3 - 5

Shelter: 3 Infrastructure: 6

Water: 3 Banking 5

Health Clinic: 5 Communication: 6

Higher Education: 6

**Necessities:**

1. FOOD: Produce a four-link paper chain; you must use at least two colors.
2. CLOTHING: Produce clothing for each of your citizens. Feel free to determine the styles.
3. SHELTER: Produce a free standing shelter to house the citizens of your country.
4. WATER: Produce clean water for your citizens by producing an 8” x 1” strip of blue paper.

**Development:**

1. MANUFACTURING: Produce a factory using three colors of paper; two shapes and a toothpick.
2. EDUCATION: Produce a two-page book.
3. COMMUNICATION: Produce a 10” piece of yarn.
4. INFRASTRUCTURE: Produce a 6” x 2” grey strip.
5. BANKING: Produce a building using a 4” x 5” green rectangle with a red roof.
6. HEALTH CLINIC: Produce a 4” x 4” red square with a white cross on it.
7. HIGHER EDUCATION: Produce two purple columns 8” tall.

**Development Level Achieved:**

**Production Sheet – Country 2**

**Country Name:**

You must produce food, clothing, shelter, and water before producing other goods or services for your citizenry. Then make decisions about the production of manufacturing, education, communication, infrastructure, banking, health care and higher education. All production must follow the specifications below. Your desire is to achieve the highest level of development. You may find that resources are scarce so you will need to make choices about what is most important for your country. Development points are as follows. In order to travel to a country to trade, you must have transportation which is symbolized by a paper clip.

Food: 3 Manufacturing: 5

Clothing: 3 Education: 3 - 5

Shelter: 3 Infrastructure: 6

Water: 3 Banking 5

Health Clinic: 5 Communication: 6

Higher Education: 6

**Necessities:**

1. FOOD: Produce a four-link paper chain; each link must be a different color.
2. CLOTHING: Produce clothing for each of your citizens. Feel free to determine the styles.
3. SHELTER: Produce a three-dimensional shelter no smaller than 2” x 2” x 2” to house the citizens of your country.
4. WATER: Produce clean water for your citizens by producing an 8” x 1” strip of blue paper.

**Development:**

1. MANUFACTURING: Produce a factory using three colors of paper; two shapes and a toothpick.
2. EDUCATION: Produce a four-page book. One page must be purple and one page must be red.
3. COMMUNICATION: Produce a 10” piece of yarn.
4. INFRASTRUCTURE: Produce a 6” x 2” grey strip.
5. BANKING: Produce a building using a 4” x 5” green rectangle with a red roof.
6. HEALTH CLINIC: Produce a 4” x 4” red square with a white cross on it.
7. HIGHER EDUCATION: Produce two purple columns 8” tall.

**Development Level Achieved:**

**Production Sheet – Country 3**

**Country Name:**

You must produce food, clothing, shelter, and water before producing other goods or services for your citizenry. Then make decisions about the production of manufacturing, education, communication, infrastructure, banking, health care and higher education. All production must follow the specifications below. Your desire is to achieve the highest level of development. You may find that resources are scarce so you will need to make choices about what is most important for your country. Development points are as follows. In order to travel to a country to trade, you must have transportation which is symbolized by a paper clip.

Food: 3 Manufacturing: 5

Clothing: 3 Education: 3 - 5

Shelter: 3 Infrastructure: 6

Water: 3 Banking 5

Health Clinic: 5 Communication: 6

Higher Education: 6

**Necessities:**

1. FOOD: Produce a four-link paper chain; each link must be a different color.
2. CLOTHING: Produce clothing for each of your citizens. Feel free to determine the styles.
3. SHELTER: Produce a free standing shelter no smaller than 2” x 2” to house the citizens of your country.
4. WATER: Produce clean water for your citizens by producing an 8” x 1” strip of blue paper.

**Development:**

1. MANUFACTURING: Produce a factory using three colors of paper; two shapes and a toothpick.
2. EDUCATION: Produce a three-page book. It must tell a story.
3. COMMUNICATION: Produce a 10” piece of yarn.
4. INFRASTRUCTURE: Produce a 6” x 2” grey strip.
5. BANKING: Produce a building using a 4” x 5” green rectangle with a red roof.
6. HEALTH CLINIC: Produce a 4” x 4” red square with a white cross on it.
7. HIGHER EDUCATION: Produce two purple columns 8” tall.

**Development Level Achieved:**

**Production Sheet – Country 4**

**Country Name:**

You must produce food, clothing, shelter, and water before producing other goods or services for your citizenry. Then make decisions about the production of manufacturing, education, communication, infrastructure, banking, health care and higher education. All production must follow the specifications below. Your desire is to achieve the highest level of development. You may find that resources are scarce so you will need to make choices about what is most important for your country. Development points are as follows. In order to travel to a country to trade, you must have transportation which is symbolized by a paper clip.

Food: 3 Manufacturing: 5

Clothing: 3 Education: 3 - 5

Shelter: 3 Infrastructure: 6

Water: 3 Banking 5

Health Clinic: 5 Communication: 6

Higher Education: 6

**Necessities:**

1. FOOD: Produce a four-link paper chain; each link must be a different color.
2. CLOTHING: Produce clothing for each of your citizens. Feel free to determine the styles.
3. SHELTER: Produce a free standing shelter to house the citizens of your country.
4. WATER: Produce clean water for your citizens by producing an 8” x 1” strip of blue paper.

**Development:**

1. MANUFACTURING: Produce a factory using three colors of paper; two shapes and a toothpick.
2. EDUCATION: Produce a two-page book. It must tell a story.
3. COMMUNICATION: Produce a 10” piece of yarn.
4. INFRASTRUCTURE: Produce a 6” x 2” grey strip.
5. BANKING: Produce a building using a 4” x 5” green rectangle with a red roof.
6. HEALTH CLINIC: Produce a 4” x 4” red square with a white cross on it.
7. HIGHER EDUCATION: Produce two purple columns 8” tall.

**Development Level Achieved:**

**Costs/Benefits Analysis**

**Use this costs/benefits analysis to analyze the decision you would make.**

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| --- | --- | --- |
| **Decision** | **Costs** | **Benefits** |
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**Costs:** what you give up

**Benefits:** what you gain

**Opportunity Cost:** Your next best foregone alternative!

**Your opportunity cost:**