

LEARNING ABOUT DEVELOPING COUNTRIES

PARTICIPATORY LESSONS FOR K-12

International Programs
Washington State University
U.S. Agency for International Development
Biden-Pell Development Education Grant

Nancy E. Horn, Ph.D.
Project Director and Editor

Development Educators
Jane Barga, Compiler and Contributor
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Cotterell, Fred. 1991. "Decisions for a Developing Nation." In A Sustainable Development Curriculum Framework for World History and Cultures. Union, NJ: Global Learning. A variant of Mr. Cotterell's material appears in Lesson 5.4, "Tough Decisions."

Maps 0.000, 1.000, 2.000, 5.000b, 5.000c, 6.000, 6.003, 6.005, 13.002, 14.001, 14.002, 14.002.1, 14.005: From Maps On File. Copyright (c) 1993 by Facts On File. Reprinted with permission by Facts On File, New York, Inc. All maps appear in Appendix B, and are included in the delivery of many lessons throughout this volume.

Morna, Colleen Lowe. "Zimbabwe Poised for Huge Land Reform." The Christian Science Monitor. 12 November 1992. The article written by Ms. Morna appears as HANDOUT #25 to accompany Lesson 5.3, "Agriculture and Hunger in Zimbabwe."

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INTRODUCTION

THE DEVELOPMENT EDUCATION PROJECT

This book was developed from the experiences that Development Educators at Washington State University gained through their participation in a U.S. Agency for International Development Biden-Pell Development Education Project. Through this project, the educators conducted workshops and shortcourses in order to help citizens of Eastern Washington better understand the linkages that exist between them and people in developing countries. For instance, many citizens are aware of the economic relationship that exists between Eastern Washington and numerous other countries through agricultural trade, but most have never considered the impact that the importation of U.S. crops has on local farming practices in those countries; or how Washington residents are connected to people in other countries through clothing, food, and the environment. Our project helped youth and adult groups explore these and other global linkages. The intent of this writing is to share with other educators what we believe are successful, exciting ways to teach about global issues, especially as they relate to developing countries.

The approach and techniques set forth in this volume are participatory, i.e., both teacher (facilitator) and students (learners) are actively engaged in the learning process. This approach, based in the teachings of Paulo Freire, requires sensitivity and a democratic identification between "teacher" and "learner" (see Bryceson et al 1982:70-71 for a discussion on how this model has been applied in Africa). These traits can only be developed when there is a close involvement with a community of learners, where there is sustained dialog, and where there is regard for people's capability and potential to produce knowledge (Horn and Barga 1992). In essence, there is no blank slate ready to receive knowledge from a knowledge bestower. On the contrary, it is assumed that all learners already know something about what they want to know more of. Hence, learning is an interactive process that facilitates making the unconscious conscious, thus empowering learners with what they already know. The challenge in presenting these lessons is how to explore together what is already known thus laying a base for discovering the unknown; and how to use what becomes known for personal empowerment.

The participatory processes the team developed in creating these lessons included three stages: 1) identifying constituent groups, conducting learner-focused needs assessments, and observing group interactions - all to identify where our constituent group is in terms of the topic to be explored; 2) tailoring the curriculum to the specific needs of the group - meeting our students where they are; and 3) implementing the learning process, with constant monitoring for improvement.

In practice, after an initial contact with interested groups, we conducted a learning needs assessment, to determine individual workshop parameters. During the needs assessment, we learned about participants' expertise and attitudes about international topics; about the culture of a learning group - who was outspoken and dominant in a group; who had lived abroad and could act as a resource; and what issues were of greatest interest to the participants.

After acquiring all this information about our workshop population, we designed the curriculum in a participatory manner. We brainstormed various approaches and materials to be used. We "diagnosed" the classroom culture in order to start at an appropriate point and bring students into the participatory process gradually. Once the curriculum was agreed upon, the lead person for that particular session wrote out the lesson, carefully delineating who would be responsible for each section. Then we went through the lesson for any "kinks," trying to anticipate any problems in classroom/workshop delivery.

Workshop implementation was fully participatory with each exercise challenging participants to identify what they already knew in order that succeeding exercises could be built on a firm knowledge base. Materials generated were hung on the walls for continuous reflection and discussion. Interactions, at times, became heated, and, at times, did not work. Because the Development Educators constantly monitored the process, adaptations were made to meet the needs of the group. At the end of each workshop or shortcourse, we asked participants to fill out an evaluation form to elicit comments on each exercise. We also provided a list of resources utilized in curriculum development.

From the Project Impact Assessment, conducted June 1993, we learned that several of the people to whom we had delivered workshops were most interested in and impressed with this team approach to planning and teaching a topic. The Development Educators worked collaboratively in lesson development and implementation; the same type of team approach could be possible among teachers, between teachers and students, or solely with student groups.

USING THE LESSONS IN THIS BOOK

Lessons and activities in this volume are organized in the following thematic chapters: Geography; History and Government; Trade; Environment; Development; Literature; Foods from Around the Globe; and Global Art. Each chapter provides several activity plans that are designed to be used independently, but may be combined or sequenced with other activities. Each chapter ends with a list of References and Resources.

Each lesson plan is organized in the following format:

SUGGESTED GRADE LEVELS: Each activity is recommended for several grade levels since the lessons draw and build upon each student's current knowledge base. The processes presented are workable with students of the grade levels suggested.

PURPOSE: The general focus and goal of the activity.

OBJECTIVES: The student learning objectives for each activity.

TIME REQUIRED: The time required for each activity will vary given the number of students, their ages, and previous background to and interest in the topic presented. The

figure given is to provide you with an approximate time frame within which each activity can be completed.

PLACEMENT WITHIN THE CURRICULUM: These suggestions provide you with some ideas about where in your curriculum you might place each activity. Several lessons are recommended as "hook-ins" - activities that capture the participants' interest or attention at the outset of a lesson and link their reality to whatever topic being considered. Hooking learners in is key to drawing them into a participatory learning process as it allows them to reflect on what they already know, which can then be applied to new contexts. We feel this type of process lays the groundwork for critical thinking.

STUDENT PREPARATION: Specific skills or background information prerequisites for successful implementation of an activity.

MATERIALS NEEDED: Any handouts, fact or briefing sheets, food recipes, and supplies, needed to implement the activity.

PROCESS: The steps for implementing each activity. Within any process, the term "DE-BRIEF" is used to describe a Socratic question/response approach of drawing from your students what they already know or have learned about a topic. This approach encourages learners to think critically. Within the DE-BRIEF points and questions, there are notes on specific processes listed in parentheses. Where appropriate [in brackets] we have included a few possible answers to the questions you will be posing. Suggested responses serve to provide you with information about the topic under consideration, and can be used to guide the discussion.

FOLLOW-UP ACTIVITIES: These include a few ideas for classroom, research, and field trip activities that could facilitate a deeper understanding about the development issues presented. The sky is the limit!

ALTERNATIVE PROCESS(ES): Some of the activities include alternative processes, ranging from changing one aspect of the lesson to changing the entire focus of the lesson. Again, let your imagination guide you in modifying the activities so that they best fit your needs.

REFERENCES AND RESOURCES: References utilized in the development of each lesson, as well as related resources.

THE IMPORTANCE OF GEOGRAPHY

As we encountered each group, we found a noticeable limitation in identifying countries of the developing world. At most, a capital city or a major export crop could be named. As a result,

the Development Educators focused on geography as a core concept in each lesson. The Geographic Education Program of the National Geographic Society (1991:21), advocates a stronger focus on geography utilizing the following themes:

LOCATION - Position on the Earth's Surface: the longitude and latitude of a place, in what continent it lies, where it is in relation to other locations, and how one might get there.

PLACE - Physical and Human Characteristics: the study of a country's size, shape, climatic zones, physical features, as well as the livelihood of its people.

HUMAN/ENVIRONMENT INTERACTIONS - Shaping the Landscape: how people have used and changed the land, and the relationship between the environment, resources, and human settlement patterns.

MOVEMENT - Humans Interacting on the Earth: the many ways that people and goods move from place to place throughout the world, including why such movement takes place, and what impact it has on people, goods and services around the globe.

REGIONS - How They Form and Change: the historical and political, religious, linguistic and cultural development of regions.

Although the developing world is comprised of countries in Latin America, Asia, Africa, and Eastern Europe (the Newly Independent States), many of the lessons/activities focus on Africa. When we conducted our needs assessments, teachers and organization leaders requested programs about this continent due to their own lack of knowledge.

When you use one of the lessons in this volume, monitor your own approach. Is it participatory? What role does the teacher play? The students? Who is sharing knowledge, or is it being "bestowed"? What kind of interaction is taking place among the students? Between yourself and your students? Evaluate each activity after implementation to determine what worked well and what might be modified to better meet your students' needs.

Last, but by all means not least, enjoy!

REFERENCES

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Geography Education Program. 1991. Directions in Geography: A Guide for Teachers. Washington, D.C.: National Geographic Society.

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CHAPTER 1
GEOGRAPHY

1.1. PICTURE/MAP EXERCISE

SUGGESTED GRADE LEVELS 3 - 8

PURPOSE

To appreciate the global diversity found in your own classroom and/or community.

OBJECTIVES

Students will be able to:

- locate various countries on a world map.
- describe the cultural diversity represented by classmates and local citizens.
- explain the world connections they have through classmates and local citizens.

TIME REQUIRED 20 - 30 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a hook-in to the importance of global awareness and education
- as preparation for a classroom visitation by a foreign student or community member
- as a lead-in to the study of a particular culture or geographical region

STUDENT PREPARATION

- familiarity with locating countries on a world map

MATERIALS NEEDED

- a world map
- string
- scissors
- tape
- pictures of local students and citizens who are from other countries
- small cards or slips of paper
- pens or pencils

PROCESS

1. Give pairs or small groups of students a picture of another student in the school or of a local citizen that is from another country. If pictures are not available to you, give small pieces paper with the name of a student or community member from another country. On the back of the pictures or pieces of paper, have written the name of that person's country of origin.

2. Have students tape the pictures/pieces of paper on the country represented on a world map. With a piece of string or yarn, connect each picture/piece of paper to your local area. This gives a pictorial image of how your town/city is connected through its local residents to many locations on the globe.

3. DE-BRIEF

Include the following types of questions in a discussion with the students:

- What countries are represented by the students/local citizens?
- On which continents are these countries located?
- Have any of you ever travelled to any of these countries? Other countries?
- How long does it take to get to these countries?
- How do people usually travel to and from there?
- What do you know about each of these countries?
- What can those of you who are from a country other than the U.S. tell us about your country?
- What brought you to the U.S.?
- Do any of you want to ask our "experts" anything about their countries?

4. Close the discussion by pointing out how the picture/map exercise shows that we are globally connected just by the fact that the people with whom we live, study and work are from many different parts of the world. For this reason alone, it is important to learn about people and places around the globe.

5. Ask each student to state or write down one thing that s/he learned from the exercise.

FOLLOW-UP ACTIVITIES

- Bring community members representing different countries into the classroom.
- Have students do library research on a particular aspect of one of the countries.
- Help students construct family trees, tracing their own ancestry and countries of origin.

1.2. COUNTRY/GEOGRAPHIC REGION MATCH

SUGGESTED GRADE LEVELS 4 - 12

PURPOSE

To become familiar with the location of countries and geographic regions

OBJECTIVES

Students will be able to:

- match a country with the geographic region in which it lies.
- locate countries on geographic region maps.
- identify what they know about the countries of a geographic region.
- discuss what would be important to know about another country.

TIME REQUIRED 30 - 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a hook-in to understanding the importance of global awareness and education
- as a pre-learning assessment tool in a geography or world cultures class
- as a review of country, culture or geographic region studies
- to introduce places and cultures represented in a literary work

STUDENT PREPARATION

- experience with locating places on a world map
- awareness of the location of various countries

MATERIALS NEEDED

- a copy of COUNTRY NAMES LIST, or your own list of countries you wish to include in the exercise
- either regional maps of Asia, Latin America and the Caribbean, Sub-Saharan Africa, and Northern Africa and the Middle East, or a world map - depending on your lesson focus
- tape
- newsprint
- marking pens

PROCESS

1. Cut out the name of each country on the COUNTRY NAMES LIST so that each student has at least one country. It is best to have about the same number of students representing each geographical region.
2. Hang regional maps on the walls.
3. Give each student the name of a country, and have them find the map of the geographic region to which their country belongs, taping the country name on its proper location. If needed, have geography books, an atlas, or map handouts (see Appendix B) available for reference.
4. Once students have found their countries within the designated regions, have students list on newsprint whatever they know about each country.

5. DE-BRIEF

As each group presents its list, add your own comments and ask the following types of questions to get them to explore further what they might know about a country:

- What language/s is/are spoken in this country?
- What religions are practiced in this country?
- What foods are native to this region?
- What kind of government does this country have?
- What are some important physical features of this region?
- What climatic zones can be found in this country?
- What are some of the customs of this country?

6. Have each regional group list on a piece of newsprint five things that they think would be important for a person from that region to know about the U.S. Circulate around the room and monitor the groups as they work.

7. Ask each group to then list on a piece of newsprint five things that they would like to know about their country or geographic region.

8. DE-BRIEF

Have each group share and elaborate on their lists from processes #6 and #7. Ask the whole class to discuss how what they would like to know about another place is similar to or different from what they feel is important to share with others about the U.S., and why.

9. Ask each student to write and turn in a brief paragraph about why s/he believes it is important to learn about different countries and cultures.

FOLLOW-UP ACTIVITIES

- Have each student write a letter to an imaginary pen-pal living in a developing country. Have the U.S. pen pal tell his/her overseas friend about the U.S. and then ask for information about the other country.
- Have each student write a short research report on the country they were assigned.
- Show a film or video on one of the geographic regions.
- Invite guest speakers who are from or familiar with other countries to talk to the class.

COUNTRY NAMES LIST

LATIN AMERICA /CARIBBEAN

BRAZIL	COLOMBIA	PARAGUAY	URUGUAY
SURINAME	FRENCH GUIANA	CHILE	BELIZE
HONDURAS	PUERTO RICO	DOMINICAN REPUBLIC	
JAMAICA	CUBA	MEXICO	GUATEMALA
HAITI	NICARAGUA	EL SALVADOR	COSTA RICA

SUB-SAHARAN AFRICA

MAURITANIA	SENEGAL	GUINEA	TOGO
BENIN	MALI	CHAD	NIGER
NIGERIA	CAMEROON	GABON	CONGO
ZAIRE	ANGOLA	ZAMBIA	MALAWI
NAMIBIA	BOTSWANA	MOZAMBIQUE	LESOTHO
SOMALIA	ETHIOPIA	SUDAN	TANZANIA

COUNTRY NAMES LIST, continued

ASIA

CHINA	VIET NAM	PHILIPPINES	MALAYSIA
THAILAND	CAMBODIA	LAOS	PAKISTAN
SRI LANKA	TAIWAN	SOUTH KOREA	NORTH KOREA
INDONESIA	YEMEN	NEPAL	INDIA

NORTHERN AFRICA AND THE MIDDLE EAST

MOROCCO	ALGERIA	LIBYA	EGYPT
TUNISIA	SYRIA	JORDAN	SAUDI ARABIA
IRAQ	IRAN	OMAN	YEMEN
UNITED ARAB EMIRATES		KUWAIT	WESTERN SAHARA

1.3. IMAGES

SUGGESTED GRADE LEVELS 6 - 12

PURPOSE

To identify how we develop images and how these shape our views of a geographic area or people

OBJECTIVES

Students will be able to:

- identify their own images about a given geographical region, culture or issue.
- discuss the influence that the media, parents, teachers, and the political and cultural environment have on the formation of one's images.
- use caution in forming negative images when the full context of a situation is not understood.

TIME REQUIRED 15 - 30 minutes

PLACEMENT WITHIN THE CURRICULUM

- as an introduction or hook-in to a geographical region or culture
- as a pre-learning tool for assessing students' understanding of a geographic region or culture
- as part of a discussion or unit about the media

MATERIALS NEEDED

- writing paper
- pens or pencils
- newsprint
- marking pens
- tape
- a tape recorder and music from region/culture of interest (if possible)

PROCESS

1. Ask students what an image is, and write down their responses on newsprint. As necessary, elaborate on their responses so that a clear definition is presented.

2. Ask each student to jot down the images s/he has about a geographic region or culture, e.g., Africa, people of the Andes Mountains. If you have music from the geographic region or culture of focus available to you, play the music while students write.

3. DE-BRIEF

Ask the students to share their images, writing their responses on the chalkboard or newsprint. (It is preferable to write them on newsprint so that they can be referred to at a later time.) Encourage other class members to listen as well as contribute to the discussion.

Once all of the images have been recorded, ask the students how they developed these images. *[Through T.V., newspapers, books, school, parents, friends, movies, etc.]* Record student responses on the newsprint.

4. After all students who wish to have commented on how they develop images, close the discussion with these points:

- How images are developed depends on the accuracy and comprehensiveness of the information to which we are exposed. Information can be manipulated so as to create a slanted or negative image. For example, how might a T.V. commercial advertising tourism in Jamaica differ from a T.V. commercial soliciting funds for a child care program in Jamaica? *[The former would show all the nice and beautiful things about Jamaica, while the latter might focus on poverty, hunger and homelessness in the same country].*

- If the information is stereotypical and negative, we tend to develop negative and stereotypical images. Therefore, it is important that we always try to get the most accurate information as possible. A challenge for all of us is to be more critical and analytical about information to which we are exposed.

FOLLOW-UP ACTIVITIES

- Show a film or slides about the region or culture discussed.
- Invite a guest speaker to talk about the region or culture.

- Assign a story or textbook reading about the topic.
- Have students do a brief research report about the topic.
- Have students interview a person from the country represented and then discuss stereotypical images

ALTERNATIVE PROCESS

- Use the image exercise to help students focus on abstract issues such as hunger, poverty, or racism.

1.4. WHOSE NEWS IS MY NEWS?

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To understand the relationship between international events and one's own life.

OBJECTIVES

Students will be able to:

- discuss international events.
- determine the potential impact of international events at the local, state or national level.
- recognize the importance of global education.

TIME REQUIRED 1 - 2 class periods

PLACEMENT WITHIN THE CURRICULUM

- as part of a unit or course on media and communications
- as a hook-in to understanding the importance of global education
- as an activity in a unit on trade, world events or international relations
- as part of a country/region study
- as an exercise in an English class

STUDENT PREPARATION

- newspaper reading skills
- recent classroom discussions of current international events
- exposure to the concept of international trade

MATERIALS NEEDED

- HANDOUT #1 (news headlines), newspaper articles, or your own news stories that reflect global linkages
- paper and pen or pencil
- newsprint
- marking pens

PROCESS

1. (This is an idea for preparing students for the "Whose news is my news?" activity). Over at least a two-week period before presenting this activity, have students read and collect in a notebook one newspaper article on an international event each day. Start each class by sharing one article (either yours or a student's) encouraging questions and discussion about it.

2. Give groups of students the headline and first paragraph of an actual or made up news article reflecting global linkages. Provide them with sufficient information in the first paragraph so that they will be able to complete the news stories.

3. Ask each group of students to discuss their headlines and complete their news stories.

4. Have small groups trade stories, answering the following questions about the story they read.

- How does this event affect the local community? the country in which it took place?
- How does this event affect your local community, region, and country?

5. DE-BRIEF

Have a few groups share their stories and impacts, recording their input on the board or on a piece of newsprint. Then, drawing from their analyses, engage the students in a discussion guided by the following kinds of questions.

- How would you categorize the kinds of impacts that these international events had? [*environmental, economic, political, social, cultural, etc.*]
- How was the impact of the event on the country in which it occurred different or similar to its impact on the U.S.?
- What current international events are presently affecting our lives? How?

6. Conclude the session with these points:

- Your analyses of these news articles show that our lives are connected with those of people in other countries through the environment, economics, politics, culture, etc. Even though events take place in other countries, those events have global impact. So, when you hear about international events, ask yourself who is being affected by such events, and how. It just may be you!

FOLLOW-UP ACTIVITIES

- Have each student do a similar impact analysis based on one of the articles they have collected.
- Have each student follow one event, through different media sources, over a period of time. Compare the way each media source presents the issue, especially in terms of who is affected by it and how.
- Have students research a past event, and its impact upon people of different countries.

1.5. MUTINDI MAITHA IN AFRICA

SUGGESTED GRADE LEVELS 6 - 10

PURPOSE

To learn about major geographical features and resources in Africa.

OBJECTIVES

Students will be able to:

- locate major geographical features of Africa on a map.
- identify major mineral and energy resources of Africa.
- identify and name several countries of Africa.
- complete the Mutindi Maitha exercise.

TIME REQUIRED 1 - 1 1/2 hours

PLACEMENT WITHIN THE CURRICULUM

- as an introduction to a unit on Africa
- as part of a study on developing countries
- as a study on the resource dispersion
- as an exercise to build map-reading skills

STUDENT PREPARATION

- knowledge of the names and locations of countries in Africa

MATERIALS NEEDED

- SLIDE SET #1 (Mutindi Maitha in Africa)
- SCRIPT TO SLIDE SET #1
- overhead of MAP #1.000 - AFRICA
- HANDOUT #2 (Pssst...Mutindi Maitha is in Africa!)
- a slide projector
- an overhead projector
- a world map
- maps of Africa for use by pairs of students
- Hershey's chocolate kisses

PROCESS

1. Referring to a world map, orient students to Africa's location through the following sorts of questions:

- Where is Africa situated in relation to the rest of the world - What body of water lies directly east of Africa? [*Indian Ocean*].
- What about west? [*Atlantic Ocean*].
- North? [*Mediterranean Sea*].
- What land mass lies just north of Africa? [*Western Europe*].
- How big do you think Africa is in relation to the continental U.S.? [*three and a half times as big*].

2. Shading in Western Sahara, Morocco, Algeria, Tunisia, Libya and Egypt on the overhead of MAP #1.000, ask:

- How much of Africa is included in Sub-Saharan Africa? [*All except the shaded in countries*].

3. Using a merged relief map, discuss with the students the different climatic zones of Africa:

- What are the three major deserts in Africa? [*Sahara, Kalahari, Namib*]
- How big is the Sahara Desert? [*about the size of the U.S.*]
- What Sub-Saharan countries form part of the Sahara Desert? [*Mauritania, Mali, Niger, Chad, Central African Republic, Senegal, Burkina Faso*]
- Where are tropical rain forests found in Africa? [*Congo Basin, western coastal lowlands, eastern coastal lowlands of Madagascar*]
- Where are the savanna or grassland areas? [*Tropical savanna climates, which have high temperatures, are found north and south of the Congo Basin and west of the lowlands in Madagascar*]
- Have you ever heard of the word, Sahel? It is an Arabic word that means *changing*. In terms of climatic zones in Africa, it refers to areas with characteristics of both savanna and desert regions. Where might they be found?

[North and south of savanna climate zones; western coastal lowlands of Madagascar] Due to overgrazing, improper farming practices, changing weather patterns, drought, and other factors not completely understood by scientists, more and more of the Sahel regions are becoming desert lands.

- The Rift Valley system is a series of deep, wide valleys along the eastern part of Africa. It runs from Tanzania north through Egypt to Syria. The Rift Valley system is caused by the folding of the earth's crust. Volcanic activity and earthquakes occur throughout this region.

- In terms of climate, Africa is quite diverse. One problem that Africans face is that few places have adequate soil for large-scale, long-term farming.

4. Let the students get a glimpse of Africa through the SLIDE SET #1. Follow the script, encouraging questions and discussion.

5. Finish the dialog by discussing energy and physical resources of Africa:

- From the slides, what did you learn about energy resources in Africa? *[wood and hydroelectric power are used]*

- Other energy resources include oil, which is found along the Atlantic Coast, near the equator. Nigeria ranks 12th in the world in terms of oil reserves.

- Coal is found along the western side of the Rift System in Southern Africa.

- What mineral resources are found in Africa? *[Diamonds are found in the southern tip, and in Central and Western Africa; 40% of the world's diamonds come from Zaire].*

- Another major mineral resource, gold, is found throughout the Rift System. 50% of the world's gold is mined in Africa, most from South Africa.

- Copper is found in Central Africa, especially in Zambia and Zaire.

- The coastal lowlands of West Africa are rich in tin, iron ore, phosphate rock, bauxite, and chromite.

6. As homework or as an in-class exercise, have students complete HANDOUT #2 in pairs, encouraging them to refer to maps, atlases, geography books and any other resources you may have at your disposal.

7. Go over the exercise (see answer sheet) with the whole class, and reward each student with the treasure, Hershey's chocolate kisses.

FOLLOW-UP ACTIVITIES

- Have pairs of students create their own "Mutindi Maitha" search games.
- Have students make their own model of Africa and sketch out their search for Mutindi Maitha on it.
- Assign groups of students various resources of Africa and ask them to research how those resources are utilized domestically and internationally.
- Invite a university student or local resident to talk to the class about Africa.

ALTERNATIVE PROCESS

- Create a "Mutindi Maitha" lesson for a single country (like Mangole Malebole for Botswana - HANDOUT # 3) another geographic region (like Paula Perdida in Latin America - HANDOUT # 4), or a world study.

ANSWER SHEET: "PSST...MUTINDI MAITHA IS IN AFRICA!"

1. Madagascar
2. South Africa
3. Mt. Kilimanjaro; Tanzania
4. Lake Victoria
5. The Nile
6. Khartoum; Sudan
7. Diamonds
8. Victoria Falls or Zambezi River
9. Hydroelectric power
10. Sahara
11. Lake Chad; Niger, Chad, Cameroon, Nigeria
12. That there was oil in Nigeria
13. The Niger; Niamey
14. Ghana; chocolate; cocoa
15. The Atlantic Ocean

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CHAPTER 2
HISTORY AND GOVERNMENT

2.1. THE DIFFUSION OF FOODS

SUGGESTED GRADE LEVELS 9 - 12

PURPOSE

To learn about the history and modern day impacts of the global distribution of foods.

OBJECTIVES

Students will be able to:

- correctly order a sequence of events pertinent to the histories of the diffusion of coffee, wheat, cocoa or rice.
- identify the groups and roles of people involved in the history of the diffusion of each of these crops.
- show on a map how cocoa, coffee, wheat and rice diffused over time.
- discuss how the diffusion of foods has affected modern U.S. diets.

TIME REQUIRED 1 1/2 - 2 hours

PLACEMENT WITHIN THE CURRICULUM

- as part of a world history course
- as a lesson on geographical movement of commodities
- as part of a health or nutrition curriculum
- as an activity in an economics class

STUDENT PREPARATION

- familiarity with the four crops studied
- knowledge of the location of the continents and some countries within them

MATERIALS NEEDED

- copies of FOOD FACTS
- large world maps
- string
- tape
- scissors
- marking pens
- blank pieces of paper
- newsprint
- envelopes

PROCESS

1. Before class, cut up the FOOD FACTS sheets, putting the FACTS of coffee and wheat together in some envelopes, and the FACTS of cocoa and rice together in other envelopes. There should be one envelope with 20 FACTS in it for each group.
 2. Introduce the exercise as is appropriate for its use in the curriculum, and tell students that they are going to do some research on the history of one of their favorite things: food!
 3. Divide the class into small groups, and give each group an envelope with the FOOD FACTS of the histories of cocoa and rice, or coffee and wheat. Tell the groups what food crops they have, unless you think that they can figure it out by themselves.
 4. Ask students to separate out, and put into chronological order (where it applies), the FACTS about the history of the diffusion of each of their crops. Once they have done that, have them summarize on a piece of newsprint the history of the diffusion of one of their crops. Make sure that all crops are represented among the groups.
 5. On a large world map, have representatives of each crop trace, with yarn, the movement of that crop over history. Use small pieces of paper to mark dates and label the crops.
 6. DE-BRIEF
- Have each group present its historical summary and map. Engage the students in a discussion based on the following questions:

- What historical events have you identified in tracing the history of the diffusion of these food crops? (It might be nice to have the class develop a time line, including all of the events related to the diffusion of the four crops). [*colonization of Latin America, South African War, World War I, World War II, Alexander the Great's invasion of India, The Moors' conquest of Spain, Columbus' arrival in the West Indies, etc.*].

- What groups of people were involved in the diffusion of each crop? [*cocoa: Maya and Aztec Indians, Spanish explorers, European elites, Swedish, Dutch and French scientists, soldiers worldwide; rice: Chinese, Indians, Greeks, Alexander the Great, The Moors; Spaniards, Italians, South Americans, West Indians, Captain Thurber, U.S. settlers, etc.*].

- How did different groups of people contribute to the diffusion of these foods? Alternatively, how and why did foods get from one place to another? [*through exploration, conquest and colonization, agricultural development, mission work, theft, food processing and marketing, traders, etc.*].

- Why were some people resistant to the diffusion of certain crops? [*Coffee, for example, became a lucrative commodity, so countries that produced it were protective of their markets.*].

- How, if at all, did the preparation and use of these foods change over time? [*Coffee was used as food and medicine before a beverage; cocoa was used in a bitter drink before the Spanish started using it in a sweet beverage, etc.*] Why? [*Over time, people used different food crops to meet their physical and economic needs as well as tastes, etc.*].

- How does the diffusion of foods affect people? [*It provides alternative food source; creates new markets, products and tastes; it sometimes causes traditional eating practices and markets to decline, etc.*].

- How have our diets been influenced by the diffusion of foods? [*In the U.S., we commonly eat foods that immigrants from all over the world have brought to the country; we even have developed ethnic restaurants to meet the demand for certain kinds of food: Chinese, Italian, German, Mexican, Thai, etc. As well, we now cultivate crops that originated in other countries, as in wheat, potatoes (come from Peru), etc.*].

7. Close the discussion by pointing out that the students' work has shown, through the diffusion of foods, we are historically and currently connected to many people and countries.

8. Ask each student to write and turn in to you a brief paragraph on what they learned from the class activity.

FOLLOW-UP ACTIVITIES

- Ask each student to do library research on the history or culture of one of the peoples involved in their historical sketches.
- Have students do further research and write a report on the history of these or other crops.
- Ask each student to develop an art project depicting the history of the diffusion of cocoa, rice, coffee, or wheat.
- Examine more closely the role of trade in the diffusion of foods.
- Study further the current day food processing and uses of these foods.

ALTERNATIVE PROCESSES

- Focus on the diffusion of different things, i.e., music, language, or clothing and styles.
- Instead of providing students with prepared FOOD FACTS or facts about the diffusion of another commodity, have them do their own research to come up with a chronology of events related to the diffusion of their commodity.

FOOD FACTS

(Trade and Development Program, 1989; Encyclopedia Americana, 1990).

Cocoa

Maya and Aztec Indians of Central America used this crop as a form of currency.

It was the chief ingredient in the cold beverage of the Mayas and Aztecs, called cacahuatl.

In the 1500's, Spanish explorers noted the popularity of this crop, but didn't like its bitterness. They added sugar, creating a hot beverage called chocolate.

Hernan Cortes took this product to Spain.

From the 1500's to 1700's, a product of this crop gained fame in Europe, and it became fashionable to serve it to royal guests.

In 1720, the Swedish botanist and taxonomist, Carolus Linnaeus, gave this crop the scientific name which means "food of the gods."

Cortes recognized this crop's quality of helping one "build up resistance and fight fatigue" upon its consumption.

In the late 18th century, the French and Dutch experimented with methods of defatting this liquor to form a powder and butter.

Because of its food value, a product made from this crop was included as standard rations for troops in the South African War, and World Wars I and II.

Today, this crop is a key ingredient in the U.S. Army ration "D": - an emergency starvation prevention.

FOOD FACTS, continued

Rice

This crop was cultivated in South China as early as 4500 B.C.

There was evidence of its cultivation in India in 2000 B.C.

This crop was grown in the Euphrates Valley in 400 B.C.

This was introduced to the Greeks with Alexander the Great's invasion of India, 326 B.C.

The Moors took this crop to Spain when they conquered it in 700 A.D.

Spaniards spread this crop to Italy in 1400 A.D.

The Spanish took this crop to South America and the West Indies with their colonization of these regions in the early 1600's.

The U.S. colonies exported this crop in the late 1600's.

Legend has it that in 1685, Captain J. Thurber, while sailing from Madagascar with this crop, was blown off course by a storm. Having taken refuge in what is now Charleston, South Carolina, he thanked the settlers for their help and hospitality by giving them seeds for this crop. Previously introduced to the region unsuccessfully, it flourished in the region this time.

In India, this word means "sustainer of the human race."

FOOD FACTS, continued

Wheat

This crop is believed to have been grown before recorded history.

The origin of this crop is obscure...perhaps from Mesopotamia (Iraq) or the valleys of the Euphrates and Tigris Rivers.

Archaeologists have found carbonized specimens of this crop in rustic lake dwellings of Switzerland.

Carbonized remains of this crop have been found in the tombs of pharaohs in Egypt.

This crop was grown in China as early as 3000 B.C.

Columbus brought this crop to the West Indies in 1493.

During war times of the 4th and 5th centuries, Athens depended on trade of this crop to replace that which was burned in the fields.

Hernan Cortes carried this crop to Mexico in 1519.

Jesuit and Franciscan Missionaries took this crop to Arizona and California.

In the United States, major production of this crop first began on the East coast in the early part of the 17th century, eventually spreading to the Midwest.

FOOD FACTS, continued

Coffee

This crop has its origins in Ethiopia.

There is a legend that a goat herder observed unusually frisky behavior in his animals after they ate bright red berries from a tree growing wild in the pasture. The goat herder also tried the berries, and liked their stimulating effect.

This crop was brought to Arabia from Ethiopia, and cultivated in Arabia by 600 A.D.

It was used as food and medicine long before a beverage. One such preparation involved drying the berry, crushing it, and mixing it with fat to form a ball that was eaten.

This crop became a lucrative article of trade when, in Arabia, it was discovered that it could be used for a beverage.

This crop was spread from Arabia to Turkey in 1554.

In 1615, this crop was carried from Turkey to Italy, and eventually spread to other European countries.

The Arabs maintained this crop as a national monopoly until 1690 when the Dutch obtained a few plants and planted them in botanical gardens in The Netherlands.

In 1723, Gabriel Mathieu de Clieu, a French officer who served in Martinique, stole a plant from Paris and planted it in Martinique. There it flourished, and soon spread to the West Indies and the mainland of South America.

In 1727, this crop reached Brazil through a Brazilian army lieutenant, Francisco de Melo Palheta. Palheta was sent to arbitrate a boundary dispute between French and Dutch Guiana (both were cultivating this crop, but neither allowed the export of its seeds or seedlings). Palheta handled the situation adroitly, and so endeared himself to the wife of the governor of French Guiana that, upon his departure, she presented him with a bouquet. Hidden in the bouquet were fertile seeds and cuttings of the crop, which Palheta planted in Brazil.

2.2. EFFECTS OF COLONIZATION

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To understand the impact that colonization has had on indigenous peoples and the role it played in the rise of global interdependence.

OBJECTIVES

Students will be able to:

- describe how the lives of indigenous people changed as a result of colonization.
- identify the implications of such change on the lives of colonized peoples.
- explain how people reacted to colonization in the short- and long-term, and why.
- explain the relationship between colonization and international interdependency.

TIME REQUIRED 40 - 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a study on Africa
- as an activity in a history unit on colonization
- as part of a social studies curriculum
- as a lesson in a unit on international relations

STUDENT PREPARATION

- general understanding of the term, colonization

MATERIALS NEEDED

- HANDOUT #5 (Case Study - Zaire Colonizes Kittitas)
- newsprint
- marking pens
- tape

PROCESS

1. Introduce the exercise as appropriate for your use within the curriculum.
2. Give each student a copy of HANDOUT #5, and read over it together. Answer any questions that arise.
3. Divide the class into small groups, and ask each group to discuss and outline their answers to the following questions about the case study on a piece of newsprint:

- What would be your initial reaction? *[Anger, rebellion, disbelief, fear, etc.]*.
- How would your lives, as Kittitasans, change? Examine the economic, social, and political parameters of your lives. *[New jobs, change in jobs, lower wages, loss of economic independence, no prestige, dislocation from home, imposition of foreign religious beliefs, no political control, etc.]*.
- What would be the implications of this change for your generation and future ones, and how could you adapt to the situation? *[It would mean less political freedom, facing a more difficult economic situation, learning/speaking language other than our native one, being discouraged to celebrate our cultural roots, etc. We could adapt to the situation by secretly promoting our own beliefs, while taking on the new work, language and customs in public, etc.]*.
- Having considered the numerous implications of the colonization of your county, what would be your overall response to the situation? Again explore economic, social, and political parameters. Why would you respond that way? *[We would try to get involved with the new political and economic systems so that we could make them work in our favor; we would educate ourselves according to the new system, but try to maintain our traditional values; etc.]*

4. DE-BRIEF

Have students present and hang on the wall their responses to the questions; ask all groups to report on one question, and compare group responses before moving on the next question. Encourage questions and discussion among students. Then, engage the students in a discussion around the following questions and points:

- What are your general feelings about the exercise you have been involved in?
- What are the effects of Kittitas being colonized by Zaire?

- Do you think the practice of colonization in other places of the world, i.e. Africa or Latin America, left the indigenous people in a better situation than was the case for Kittitas? Explain.

- In this case study as well as in other real cases, what are some of the reasons for colonization? (Help students with examples). [*Missionary activities, seeking raw materials for industries, global markets, expansion of empires (subjects), human change, etc.*].

- Colonization had both negative and positive impacts. What do you consider to be the positive impacts of colonization? [*Education, health care, missionary work, globalization, understanding the world more, trade, human development, etc.*].

- What do you see as the negative effects of colonization? [*Subjection and control of others, disruption of culture, exploitation, etc.*].

5. Conclude the discussion with the following points:

Expansion and colonization by European countries and the U.S. have led to the "westernization" of the globe. due to the trading relations necessary during colonial times, goods produced in one part of the world can be found in many others. We are all linked through trade and the common use of certain products. We are also linked through the environment. Pollution does not stay in one country; it moves with weather patterns. From all this exchange, we have developed a system of global interdependence, and we need each other to survive. As we study, live and work in our own towns or cities, we must realize that we are always influenced by and influencing what is going on in the rest of the world.

FOLLOW-UP ACTIVITIES

- Have students research and write a comparative/contrastive essay on the history of colonization of two countries within a particular geographic region.

- Compare colonization in the United States with colonization in an African, Asian or Latin American country.

- Examine the current impacts of colonization on a developing country. Invite a guest speaker from Africa or Latin America to help you out.

2.3. SHIPWRECK

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To understand how governments are formed and shaped by their environments.

OBJECTIVES

Students will be able to:

- articulate the basis on which governments operate.
- discuss the human concerns of being governed.
- identify rights that must be guaranteed to citizens.

TIME REQUIRED 40 - 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a hook-in for a unit on the branches and functions of the U.S. government
- as an introductory exercise for a study on comparative governments

STUDENT PREPARATION

- prior knowledge of the basic structure and functions of the U.S. government

MATERIALS NEEDED

- HANDOUT #6 (Shipwreck)
- newsprint
- marking pens

PROCESS

1. Divide your class into groups of 7 - 10. Give each student a copy of HANDOUT #6, and have each group work on resolving the three tasks listed. Ask them to outline their plans, rules and strategies on newsprint (to be shared later with the rest of the class).

2. DE-BRIEF

Using the following questions (or others), guide your students in a discussion leading to the theme of government functions or comparative government:

- After you overcame the shock of your shipwreck, what was the first thought that came to your mind?
- How did you organize yourselves?
- On what did you base your organization?
- How did leadership emerge?
- What qualities did this person/these people have?
- Who made the decisions on how you went about accomplishing your goals?
- What strategies did you develop to ensure your survival?
- What strategies did you develop to be rescued?
- Did anybody not participate? Why?

3. DE-BRIEF, cont.

After a discussion of what each group has written, begin to draw parallels to our own government, how it is organized to meet the needs of people, how it tries to ensure equal rights to everyone, and how each person has responsibility to participate.

On a structural level, you can begin to identify various departments of government designed to administer regulations and laws. This can be done either with U.S. Government or a range of governments. The following questions and points may help to direct the discussion:

- What processes did you use to undertake the tasks of survival?
- How did you know to use these processes?
- A parallel can be drawn between the shipwreck/island scenario and the development of "government" in its most essential forms. If you consider the environment in which people lived as civilizations evolved, what kinds of social institutions and government would have been necessary for people who:

- lived off the land, hunted meat and gathered roots, berries and leaves? *[System of teaching youth life skills, means of meeting health needs, some way to organize the division of labor, a means for knowing who has rights to what areas and resources, etc.].*

- raised cattle to eat and exchange, and had to move seasonally to different places? *[A system of marketing and exchange, banks, infrastructure for transportation, educational system, means of meeting health needs, a way of determining land rights, etc.]*

- cultivated horticultural crops until the yields declined and then moved on? *[Systems for labor, training, health needs, determining land rights, etc.].*

- cultivated agricultural crops intensively? *[Systems for education and technical training, labor, marketing, transportation, pesticide regulation, etc.].*

- How would the tenets of democracy come into play in the development of a government? Would they evolve naturally, or is there a greater tendency to be autocratic and authoritarian? Why?

- What other factors affect the form a government takes? *[Economics, religion, traditional and philosophical beliefs, family and kinship structures, environment].*

- If any of these factors changes, what implications would there be for changes in government?

FOLLOW-UP ACTIVITIES

- Have students do further research on the structures and functions of different governments.

- Have students follow, through the media, the way that the U.S. government deals with trying to meet some of the basic needs of its people, i.e., health, education, housing. Have students follow the legislative processes that address these issues.

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CHAPTER 3

TRADE

3.1. SO WHAT IF MY SHOES COME FROM BRAZIL?

SUGGESTED GRADE LEVELS 7 - 12

PURPOSE

To understand the numerous linkages that exist between local citizens and those of the rest of the world through the manufacturing of clothes.

OBJECTIVES

Students will be able to:

- identify where their own clothing comes from.
- locate on a world map the countries in which one's clothes are manufactured.
- identify ways in which the production of clothing links people globally.

TIME REQUIRED 20 - 30 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a way of introducing the importance of global awareness to students
- as a hook-in to the topic of trade and economics
- as a lead-in to a discussion or unit on global resource utilization
- as an introduction to a geographical region or culture

STUDENT PREPARATION

- familiarity with locating countries on a world map
- some exposure to the concepts of trade and resources

MATERIALS NEEDED

- a world map
- tape
- colored paper
- scissors
- newsprint
- pens or pencils

PROCESS

1. Ask your students in what ways they are linked to the rest of the world. Allow time for responses, then introduce the exercise by telling them that today they are going to explore some other ways that they are connected to people in other countries.
2. Ask your students where their shoes are from. Then ask about their shirts.
3. Have each student cut out a symbol for each of the following pieces of clothing s/he is wearing; shoes, pants, shirt, dress or skirt, sweater. Designate one color of paper for each item of clothing.
4. Have students label each of their symbols with the name of the country from which that piece of clothing came, and tape them to the world map.

5. DE-BRIEF

Guide the class in a discussion based on the following questions, points and processes:

- Where did your shoes come from? Shirts? Pants? Skirts? Socks?
- What do you notice about the distribution of your symbols on the map?
- Were some regions more strongly represented than others? Which ones?
- Why do we get some of our clothing from some regions and other clothing from other regions? And, why are some clothes partially manufactured in one place and partially in another? [*Natural resources, labor laws and wages, environmental regulations, etc.*].
- What is the impact of our clothes being produced in other countries? Take shoes that are produced in Brazil as an example. What is the impact on the physical, human and technological resources of Brazil? (On the board or a piece of newsprint, map out the linkages developed from student responses to the following three questions. Start with "shoes" as the center point, and encourage students to make as many linkages as possible.)
 - What are the physical resources required to produce shoes in Brazil? [*Cattle herds, land, grain, factories, cardboard boxes, trees, energy source, etc.*].
 - What are the human resources required in the production of shoes in Brazil? [*Labor, training, education, etc.*].

- What are the technical resources required to produce shoes in Brazil? *[Machinery, knowledge, parts, etc.]*.

- Similarly, what is the impact on the U.S. of shoes being manufactured in Brazil? (Next to the first conceptual map, map out the students responses to the next three questions so that the impacts on the two different countries can easily be seen and compared).

- How does the production of shoes in Brazil influence the physical resources in the U.S.? *[Reduction in hides needed for shoes, reduction in cattle herds for hides, perhaps a reduction in the amount of graze land or feed needed, less machinery needed, hides available for other products and markets, etc.]*.

- How are human resources in the U.S. affected by our shoes being produced in Brazil? *[Better prices, fewer production jobs, less income from production, more competition in the shoe market, etc.]*.

- How is technology in the U.S. affected by our shoes being produced in Brazil? *[Either less research, training and development because the U.S. chooses not to compete with Brazil's shoe market, or greater research, training and development so that the U.S. can compete with Brazil's shoe market.]*.

6. Conclude the discussion with the following points:

- Shoes, as many other products we use on a daily basis, are produced in other countries. As your diagram shows, this means that a lot of energy and economic activity in those countries centers around production. In contrast, although some production does take place in the U.S., there is a greater emphasis on marketing and technology, in an effort to meet consumer demands. The U.S. is not as much a producing society as it is a consuming one. What our model shows is how supply and demand functions in a global economy. The U.S. has created a demand for leather shoes, and Brazil is able to supply the U.S. with the product its consumers want.

- Taking this model one step further, what happens when, let's say, drought and energy rationing in Brazil limits its shoe production. How is the global economy affected? *[Brazilians lose money, perhaps a whole market; other countries may have new opportunities for marketing leather or other kinds of shoes; shoes may become more expensive for consumers; Brazil has fewer resources with which to repay their foreign debt, etc.]*. Just through our clothing, we are globally connected in many ways.

7. In small groups, have students list what they learned from the exercise. Record the comments as each group shares their reflections with the whole class.

FOLLOW-UP ACTIVITIES

- Have students do research about the people in one of the countries discussed, and discuss further how the production of clothes or other commodities in their countries affects their lives.
- Ask students to follow a specific international trade issue in the newspaper for a few weeks, producing a written report on the issue afterwards.
- Examine the physical resource utilization involved in production of clothes and other commodities. Have students analyze the impact that industries have on the environment.
- Have students analyze a product manufactured in any one of the three countries involved in NAFTA. What effect will NAFTA have on these products?

ALTERNATIVE PROCESS

Instead of focusing on clothes as the product that connects people globally, draw on a number of products that are used on a daily basis, i.e., furniture, cars, electrical equipment, kitchen supplies, foods. Magazine pictures of these items work great for symbols, and using a variety of products can lead to interesting analyses of why different commodities are manufactured in different regions.

3.2. TRACING THE COFFEE BEAN TO ITS ORIGINS

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To understand the process of getting food from its origin to our dinner table, and how that process links people globally.

OBJECTIVES

Students will be able to:

- trace the path a primary agricultural commodity takes from the time of its planting in one country to the dinner table in another country.
- describe the food production, distribution and consumption system, and how that system can get broken down.
- explain how people are globally interdependent through the trade of food.

TIME REQUIRED 50 - 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a study on developing countries
- as a topic in an agriculture class
- as part of a science or nutrition course
- as a geography lesson

STUDENT PREPARATION

- some sense of what is involved in the food production, distribution and consumption system (although students might not know these terms)

MATERIALS NEEDED

- blank pieces of writing paper
- pens or pencils
- newsprint
- marking pens
- tape
- samples of foods to be traced back to their origins (if possible)

PROCESS

1. Tell your class that they're going to learn about how the food we eat gets from its point of origin to the dinner table. Then divide the class into groups of 3-5 for the exercise.
2. Give each group a piece of writing paper, and ask them to fold it in half, labeling the left side "Agricultural Production."
3. Ask the groups to think for a minute about the farming that takes place around their area, and then quickly write down at least 10 resources needed for on-farm agricultural production. In other words, what is needed to grow crops in their area?
4. While students are working, tape three sheets of newsprint side to side on a wall or chalkboard. In the center of the left-most sheet, write "Agricultural Production."

5. DE-BRIEF

Have student groups report back their ideas about agricultural production, and write them on the "agricultural production" newsprint sheet as a conceptual map; that is, on lines connected to and moving out from your center label (as a wagon wheel might look). List and show the linkages between as many resources as possible. [*Land, capital, credit, water, fertilizer, seeds, sunlight, labor, technology, machinery, energy source, cooperative weather, good soil, etc.*].

6. Tell the groups that the second half of their paper represents them. Ask what they need in order to have access to food once it is produced/harvested. Again, give them just a few minutes in their groups to list as many things as they can.

7. DE-BRIEF

Label the sheet of newsprint on the right, "consumption." Again, have students report their ideas, and construct a conceptual map from them [*Market, money, employment, transportation, local supply, storage, refrigeration*].

Draw a line across the middle sheet of newsprint, connecting "agricultural production" to "consumption." The line on the middle sheet will represent "distribution." Finish developing the food production, distribution and consumption model through the following questions and points (Students may have already started pointing out elements of distribution. That is alright; just start connecting them to the distribution line as they come up):

- What is involved in getting the food from the farm to the market? [*Processing plants, energy, labor, technology, storage, transportation, fuel, infrastructure, refrigeration, time*].

- These factors make up what is called distribution.

- This model illustrates the major elements of a food production, distribution and consumption system. When any part of this system gets a kink in it, the whole system is affected. For example, what happens when there is a drought? Or, what would happen if you couldn't get needed parts to the trucks that carries wheat from the grain elevators to the mills? What if you lost your job? In developing countries, distribution is often a major problem because of the lack of infrastructure. If the kinks or breakdowns in the system are severe enough, the whole food system will break down, leading to a situation of hunger.

8. Introduce the second part of this activity by telling students that they are going to have a chance to examine the food production, distribution and consumption system with some real foods. Assign each group a food that comes from another country, i.e., cocoa, peanut oil, coffee, yams, cassava, guavas, showing them a sample of the food if possible.

9. Ask the groups to trace their food backward from the dinner table to the initial point of on-farm production (in another country). Have each group make a poster to trace their food, including in it the elements of food systems that were just discussed: production, processing, storage, distribution, accessibility, land, inputs, weather, natural resources, infrastructure, technology, markets, human resources, etc.

10. DE-BRIEF

Have groups present their "tracings." As needed, ask them to clarify and elaborate on the workings of their food systems, as well as to explain how their systems could break down. Point out to the students that, through their tracings, they have shown that we depend on a global food system. Through trade, we import foods from, and export foods to, other countries. In addition, whatever happens to food systems in other countries not only affects the people of those countries, but us as well. Hence, we are globally interdependent through the trade of food.

FOLLOW-UP ACTIVITIES

- Study further, through videos, textbooks and guest speakers, how different foods are processed.

- Address the issue of hunger throughout the world

- Continue the study on trade through "The Trade Game" (see next exercise).

3.3. THE TRADE GAME

SUGGESTED GRADE LEVELS 7 - 12

PURPOSE

To learn, from one's own personal economic viewpoint, what international trade is all about and why developing countries find it so difficult to establish and maintain a balanced trading relationship with countries in the developed world.

OBJECTIVES

Students will be able to:

- Define several terms related to trade.
- Explain the difference between hard and soft currencies.
- Negotiate favorable terms of trade.
- Explain why developing countries are at a global disadvantage in trade.

TIME REQUIRED 50 - 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a lesson on personal and international budgeting in a business course
- as part of a study on developing countries
- as a hook-in to a trade unit in an economics class
- as a means of internationalizing the agriculture curriculum
- as an introduction to the issue of hunger in Africa

STUDENT PREPARATION

- understanding of the concept of a food production, distribution and consumption system

MATERIALS NEEDED

- HANDOUT #7 (American Manufacturer/Commerce Department Briefing)
- HANDOUT #8 (Mozambican Ministries of Agriculture and Trade Briefing)
- play money
- symbols representing clothes, popular snack foods, videos, and movie and sports tickets
- signs to designate the sale of the above commodities
- tape
- writing paper
- pens or pencils

PROCESS

1. Hook the students into the theme of trade by having them explore their own economic situation through the following questions:

- What is an average amount someone your age gets for an allowance?
- How is it supplemented? Work? Baby sitting?

2. Introduce the first phase of the trade game by telling students that they are going to start learning about trade by actually doing it. Give half of the students various amounts of money, and the other half commodities to sell, like movie tickets, video game playing cards, clothes, food and snacks, and other things they might be interested in purchasing. Explain that the problem in making purchases is that there is no set price for the commodities; the buyers and sellers have to find a mutually agreeable price by considering the laws of supply and demand - i.e., when the demand is greater than the supply, the price goes up; when the supply is greater than the demand, the price goes down. The goal of those with money is to buy as many of the items being sold as wanted; the goal of those with commodities is to get the highest price as possible for their commodity, since this is their business. Any type of "deal" is OK.

3. Let the students play this first phase of the trade game 10-15 minutes.

4. DE-BRIEF

Lead the students in a discussion about trade through the following questions and points.

- What "deals" did you make?
- What is the highest price paid for each commodity?
- What is the lowest price paid for each commodity?

- What accounts for the differences in pricing?

- What you have just done on a micro level is to illustrate the way the world market works on a macro level. When a country produces something another country needs, and there is not a very good supply, the price goes up, and the producing country has more money. The opposite is also true. When too many countries produce the same item, and production is more than the demand, the price goes down.

- When we apply these principles to Africa, we generally find that African countries produce a lot of primary commodities, like food and minerals from mines. The problem is that a lot of other developing countries produce similar things and glut the market, making prices go down. For example, Ghana used to be the world's cocoa supplier, and today it has only 10% of the market share. Zambia used to produce the world's copper supply, but today that market share has been reduced by the discovery and mining of copper in other countries.

- The problem gets even bigger when the trade in primary commodities is reduced because then developing countries can't earn what we call hard currency, i.e., those currencies that can be converted to any other currency. If African countries can't get hard currencies by trading primary commodities, that means they can't purchase industrial equipment. This starts a vicious cycle, because without money to buy equipment, they can't industrialize, and so they become even more dependent on primary commodities.

- As you learned in your study of the food system (see "Tracing the Coffee Bean to its Origin"), there are a lot of problems related to production, distribution and access to food. What might be some other issues that would prevent African countries from generating a good harvest to trade?

5. Tell students that shortly they are going to have the opportunity to apply what they just learned about trade on a personal level, to trade on an international level. Before introducing the second phase of the trade game, however, familiarize the students with the following terms (Give the students a taste of guavas or guava juice, if possible).

- Balance of Trade: The difference between the value of the goods that a nation exports and the value of the goods that it imports.

- Favorable Terms of Trade: When a country earns more from exports than it spends in imports.

- Unfavorable Terms of Trade: When a country spends more on imports than it earns from exports.

- Comparative Advantage: The advantage that a country has in concentrating its production on a particular commodity because of the country's ability to market the commodity at a relatively low cost.

- Primary Commodities: Goods that are sold as raw materials or without processing, and are relatively inexpensive because they do not have any processing value added to their price, i.e., crops, trees, minerals.

- Guavas: A tropical fruit eaten that can be eaten raw or used for juice, jam, and candy. During guava harvest season in Africa, guavas, which are about the size of tangerines, sell for about a penny each.

6. Divide the students into groups of four, and explain the second phase of the trade game.

- Two people from each group will be representatives of the U.S. (distribute HANDOUT #7); the other two will be from the country of Mozambique (distribute HANDOUT #8). The Americans are interested in selling something, and the Mozambicans want to buy, but they also have something to sell. The job of the Americans is to get the best price for their equipment; the job of the Mozambicans is to get the best terms of trade for their guavas, and maybe for something else.

- Keep the following points in mind as you negotiate:

Mozambicans are a very poor people with very little opportunity to earn hard currency. They grow fresh fruit during the winter seasons in Europe and the U.S., and would like to export this fruit. Americans need to develop more trading relationships in order that the U.S. Government does not go further into debt. The trading relationship negotiated should satisfy both parties.

7. Let students negotiate their trades for about 15-20 minutes. As they work on their negotiations, be available to assist them with any questions or issues they might have.

8. DE-BRIEF

Discuss what the students learned from the second phase of the trade game through the following questions and points:

- What sort of "deal" did each of your teams make?

- What were the considerations of the U.S. manufacturer and the Commerce Department Official?

- What were the considerations of the Ministries of Agriculture and Trade in Mozambique?

- Given what you know about food production and consumption systems, what sort of impact would you expect the exporting of guavas to have on Mozambique? *[It would mean more income for Mozambique, the need for better infrastructure, perhaps the need for more technology. As well, it might affect the labor market and price of local guavas, etc.]*.

- What considerations were not presented in "The Trade Game" that you think ought to be taken into account? *[World commodity markets, airline shipping prices, hard currency/soft currency exchange rates, ownership of guava groves, relationship of government to owners of guava groves, other potential traders, development of infrastructure, etc.]*.

- What do you understand about some of the reasons for hunger in Africa by playing this game?

- What about "getting the most for the least" attitude?

- What have you learned about developing countries through this game?

9. Conclude the discussion by getting oral feedback from students on what they learned about Africa through the trade game, and how their images of Africa might have changed.

FOLLOW-UP ACTIVITIES

- Discuss in greater depth the history and role of Africa in world trade.

- Study about the causes for hunger in Africa.

- Examine the issues centering around NAFTA (North American Free Trade Agreement).

3.4. REFERENCES AND RESOURCES

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CHAPTER 4
ENVIRONMENT

4.1. WHERE IN THE WORLD ARE OUR RESOURCES?

SUGGESTED GRADE LEVELS 6 - 12

PURPOSE

To become aware of global natural resources and where they are located.

OBJECTIVES

Students will be able to:

- identify natural resources on a world map.
- discuss their own understanding about resources in different geographical regions.

TIME REQUIRED 30 minutes

PLACEMENT WITHIN THE CURRICULUM

- as an activity in a geography class
- as a hook-in to a unit on the global environment or global resources
- as part of a social studies unit on developing countries

STUDENT PREPARATION

- familiarity with the location of the continents and some countries within them

MATERIALS NEEDED

- statistics on natural resources around the world
- a world map or maps of different geographic regions, i.e. Asia, Africa, etc.
- tape
- colored paper
- newsprint
- marking pens
- pens or pencils

PROCESS

1. Before the activity, collect and type out on small pieces of paper statistics about the world's natural resources. For example:

The Amazonian Rain Forest comprises 48% of Ecuador's territory.

The Congo Basin is the largest rain forest area of continental Africa.

Brazil is home to Iguazu Falls which comprises over 275 falls, each the height of Niagara Falls.

Lake Victoria, the largest lake in this region, is bordered by Kenya, Uganda, and Tanzania.

The Ganges River runs through this region.

The Nile Delta of Egypt is a rich area for cultivation.

Ninety-two percent of Nepal's population relies on agriculture for its survival.

With colored paper, design simple symbols to represent the different kinds of resources, i.e., land, water, and forests. Attach the appropriate symbol to each statistic.

2. Explain the symbols to the class and distribute the statistics among the students. Have students find what location each statistic refers to on world or on regional maps, and ask them to tape each to its location.

3. Once all of the statistics/symbols are up on the maps, divide the students into regional groups. Have each group discuss what they know about their region's resources, and make more symbols for other natural resources not already represented by the statistics/symbols. Tape these to the map(s).

4. DE-BRIEF

Ask each group to point out to the rest of the class a few of the resources they learned about in their region. Then, engage your students in a brief discussion of their findings based on the following types of questions:

- How are different geographic regions similar in terms of their natural resources?
- How do different geographic regions differ in terms of their natural resources?
- How are different natural resources distributed globally?
- How are various resources utilized in different geographic regions? [*For irrigation, domestic industry, export, recreation, etc.*].

- How might the presence or lack of various resources in a region affect the people who live there? *[It may influence the cost of resources, the access that people have to them, and the way people make a living. For example, places that lack certain mineral resources and water are not as adequate for industry as those that have them].*

- What do resources have to do with the ability of a country to feed itself?

5. End the class by having each small group reconvene and write a summary, on newsprint, of what they learned about natural resources around the world.

FOLLOW-UP ACTIVITIES

- Have students look through newspapers and news, environment, or geography magazines for information about how the world's natural resources are linked globally (i.e., through migration, weather patterns, gas exchanges, pollution, water flow, etc.).

- Have sub-groups of students from each region do library research about one of the resources are utilized in each region, and what sorts of environmental challenges may be related to their management. To guide their research, have the students look for information about geography, population, economy (agriculture, forestry, industry, exports, etc.), technology and education. Ask each sub-group to make and present a poster depicting the utilization of their regional resource, including any environmental concerns that may be a consequence of the utilization of this resource. Discuss.

ALTERNATIVE PROCESS

- Focus the exercise on something other than natural resources; for example, ancient ruins, industries, crops, animals, languages, religions, etc.

4.2. ANIMALS AND THE ENVIRONMENT

SUGGESTED GRADE LEVELS 6 - 8

PURPOSE

To understand the relationship of the environment to animal eco-niches around the world.

OBJECTIVES

Students will be able to:

- define adaptation and eco-niche
- identify animals in the U.S. and their eco-niches
- identify animals in developing countries and their eco-niches
- characterize and classify various eco-niches and identify where in the world these are found.

TIME REQUIRED 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a world geography activity
- as a science lesson
- as part of a study on developing countries
- as a background exercise to a creative writing assignment

STUDENT PREPARATION

- awareness of local habitat
- knowledge of the location of continents and some countries within them

MATERIALS NEEDED

- pictures, slides or a video depicting animals from Asia, Africa or Latin America and the Caribbean
- a world map
- newsprint
- markers
- tape
- writing paper
- crayons or colored pens or pencils

PROCESS

1. Hook students into the topic by asking how many of them have pets. Then, ask the whole class to identify domestic animals, livestock, and wild animals that live in their local area.
2. Ask pairs of students to draw, on a piece of paper, an animal found within their local area.
3. On the same or another piece of paper, have them describe the key features - size, skin/fur/hair - of their animals. Have them also point out any unique features the animal might have.
4. Ask the whole class to describe the weather and climate in your local area. Include the following points, and outline their responses on newsprint.
 - rain and snowfall: amounts, duration, and distribution
 - temperature: range, when coldest and hottest, and duration
 - sunshine: most and least sunny months
5. Have the student pairs identify what characteristics the animal they described earlier has to suit the local weather and climate.

6. DE-BRIEF

Have a few student pairs share about their animals and how their characteristics suit the local climate. Then, illustrate the concept of adaptation through the following questions and points:

- What would happen to cows if grass stopped growing, and they had to eat leaves from trees instead? *[They might eventually develop long necks or strong neck muscles to hold their heads high, or stronger hind legs and different forearms so they could stand on just two legs to reach the high leaves, etc.]*

- Or, what would happen if Huskies and Alaskan Malamutes migrated from the cold northern region to the warm, southern region of the U.S.? *[Over the generations, they would probably develop a cooler, lighter coat.]*

- What we are talking about is termed adaptation. Animals have characteristics that suit the climate they live in. (Climate includes things such as rainfall, temperature, and sunshine). When an animal moves permanently to a region with a new climate, or the climate in which an animal lives changes greatly and permanently, animals have to change to adapt to the climate. Some of the physical features animals have to adapt are their size, their skin or hair coverings, their teeth, their eyes, and their claws/feet.

- Now, think about animals you might have seen in a zoo. Are they the same animals you keep as pets? What is the same/different about them? *[size, skin, preferred climate, food, running, jumping abilities, etc.]*.

- Where do elephants come from? *[Africa, India]*.

- What are key features of elephants? *[Immense size, trunks, big ears, very little hair, etc.]*.

- What kind of climate does an elephant live in? *[Hot]*.

- How might the characteristics of elephants be suited to the climate they live in? *[Because of their size and the hot climate they live in, elephants need to have ways to drink plenty of water and to stay cool. Their trunks serve both purposes. Elephants have almost no fur or hair, so this also helps to keep them cool.]*

7. Show your students pictures/slides/a video of animals that live in different eco-niches of Asia, Africa or Latin America and the Caribbean. As needed, define eco-niche: *[the elements of a particular region's natural environment, i.e., the plants, animals, insects, and weather of a particular area define it as an eco-niche]*.

If you show pictures or slides, maintain a dialog with the students throughout it about the animals they see, their features, as well as the eco-niches and geographic region in which each one lives. If you show a video, ask the students to keep in mind or take note of the same kinds of information. If it is too much information for students to handle, ask some to take note of the animal features and others to describe the eco-niches.

8. DE-BRIEF

Review with the students what they learned from the slides/video: On a world map, tape the names or pictures of the animals viewed. Then have students explain how certain characteristics of animals make them well-suited to their environments. Outline their ideas on newsprint.

9. Conclude with the following points:

- The type of animals found in particular eco-niches is very much determined by the climate of the area. In hot places like in parts of Africa, Asia and Latin America (whatever region is studied), and even in some parts of the United States, the type of animals found are thin skinned and have less hair or fur than those in cooler places.
- Climate also defines the type of food available to animals. Certain species of animals can be found in a particular place because they are physically adapted to and can live off of the resources found in that eco-niche, i.e., plants and other animals for food.

10. Ask each student to complete the following written assignment:

- Choose an animal that you saw in the slides/video and describe its key features - size, skin/fur/hair, other.
- Explain which features are unique, and why.
- Describe the eco-niche where the animal lives.
- Explain how the characteristics of the animal suit its eco-niche.

FOLLOW-UP ACTIVITIES

- Have each student do a creative writing piece on how an animal developed a certain characteristic due to environmental adaptation.
- Have students do some library research on an animal of their choice. Then, visit a science museum so they can gather more data and write brief reports about their animals.
- Have pairs or groups of students explore and prepare science displays describing the eco-niches of their own community.

4.3. HUMAN SETTLEMENTS AND ENVIRONMENTAL ADAPTATION

SUGGESTED GRADE LEVELS 6 - 12

PURPOSE

To understand how geography and the environment influence human settlement patterns.

OBJECTIVES

Students will be able to:

- identify the basic elements needed for human survival.
- identify in what areas of a given country one would most likely find the basic elements needed for human survival.
- explain the relationship between geography/the environment and human settlement patterns.
- explain which geographic regions of a country would attract and best support people with different economic bases.

TIME REQUIRED 40 - 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a follow-up to a geography lesson on a given country
- as part of a social studies curriculum
- as an exercise in an economics class
- as part of a science unit on human/environmental interactions

STUDENT PREPARATION

- familiarity with the geography of the country or continent to be studied
- ability to read merged relief maps

MATERIALS NEEDED

- HANDOUT #9 (Hunters and Gatherers)
- HANDOUT #10 (Pastoralist Herders)
- HANDOUT #11 (Agriculturalist Farmers)
- HANDOUT #12 (Industrialists/Workers)

- merged relief maps of the country or continent to be studied
- newsprint
- markers
- tape
- writing paper
- pens or pencils

PROCESS

1. Introduce topic, pointing out that if we think about what people need to survive, we can determine where and why major settlements of people occur in a given place. Then, ask students what elements people need for survival. *[Water, food, shelter].*

2. Focusing on a country or continent whose geography is familiar to the students, have pairs of students identify and jot down on a piece of writing paper the places that would provide the basic elements people need for survival.

3. DE-BRIEF

As several pairs of students report their ideas to the entire class, guide the discussion through the following types of questions so that students consider numerous aspects of the country's/continent's geography and environment, and how they influence human settlement patterns:

- What climatic zones are found? [Steppe or high mountain, tropical or high savanna (grasslands), forest, tropical rain forest, desert, coastal sand, etc.].
- What water sources do people have access to? Are they fresh or salt water sources?
- What kinds of foods can be found or produced in a given climatic zone?
- What natural occurrences, such as earthquakes, volcanoes, and hurricanes are prevalent?
- What human and animal diseases exist in this region? *[For example, malaria, chagas, tsetse fly].*
- What economic activities is this area most suitable for? *[For example, subsistence farming, ranching, raising both crops & livestock, harvesting forest products, nomadic herding, manufacturing, etc.].*
- What is the population concentration or distribution of this area?

4. Explain to students that when people settle within a country, they generally locate themselves based on the ways that the environment coincides with their particular skills and needs. For example:

- Hunters and Gatherers live where there are game animals, roots, berries, plants
- Pastoralist Herders, who may be nomadic or semi-nomadic, go to where there is water and grazing land.
- Agriculturalist Farmers, who are sedentary (stay in one place), seek out places with good soil and adequate amounts of rainfall.
- Industrialists/Workers will locate in areas that have easy access to water, land, transportation, which are needed for the production and distribution of goods.

5. Divide students into small groups. Ask each group to decide what it wants as the basis of its economy: hunting/gathering, pastoralist herding, agriculturalist farming, or industry. Give each group the appropriate briefing sheet (HANDOUT #'s 9-12) and, based on the information provided in the briefing, ask them to decide where they would want to live and why. Have them outline their responses on a piece of newsprint.

6. DE-BRIEF

Have the groups report on their decisions. Guide the students in comparing and contrasting the different decisions, and constructively challenging each other on the reasoning behind them.

7. Conclude the discussion by having the students, as an entire class, summarize what they learned through the activity.

FOLLOW-UP ACTIVITIES

- Ask students to analyze how the geography and environment of the U.S. has influenced its human settlement patterns.
- Through a video, slides, community resource people or readings, study in more depth the culture of different economically-based peoples within a country or continent.
- Ask each student research and write about the human settlement patterns of the country or continent studied.

4.4. FRAGILE ENVIRONMENTS

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To know how and why environments become fragile, and what it takes to manage them.

OBJECTIVES

Students will be able to:

- list the basic components of environments.
- explain how and why environments become fragile.
- discuss the complex issues involved in the management of fragile environments.

TIME REQUIRED 1 1/2 - 2 hours

PLACEMENT WITHIN THE CURRICULUM

- as part of a study on ecology or the environment
- as a geography or social studies activity
- as a lesson in a unit on developing countries

STUDENT PREPARATION

- previous classroom discussion of the concept of environment

MATERIALS NEEDED

- HANDOUT #13 (Dilemmas on Water Use)
- HANDOUT #14 (Dilemmas on Land Use)
- HANDOUT #15 (Dilemmas on Forest Use)
- writing paper
- pens or pencils
- newsprint
- marking pens
- tape

PROCESS

1. Introduce topic by asking students how they would describe the environment of their city or county. List out their responses on the board or on a piece of newsprint. If students mention different eco-niches, talk about what makes each one unique.
2. Ask the class to categorize what they have described about their environment into "kinds of things that make up an environment." [*Plants, animals, climate, decomposers, minerals, nutrients, gases, etc.*].
3. Conclude the introduction to environments with these questions and points:
 - An environment is a group of factors that define the conditions in which organisms live and adapt. All of the things you mentioned above work together to create an ongoing (sustainable) and dynamic environment in which all organisms on earth, including ourselves can live and reproduce.
 - What are some of the different environments (eco-niches) around the world? [*Deserts, tropical rain forests, snow-capped mountain regions, cool and rainy coastal areas, hot coastal areas, etc.*].
 - How are the many different environments around the world related to each other? [*They are all related because they are governed by the same natural laws; that is, they all rely on light energy from the sun, and are subject to varied weather patterns such as droughts and flooding, as well as natural occurrences such as earthquakes and volcanic explosions. No environment is self-contained and isolated. Through the exchange of gases, nutrients, the water cycle, animal migration and seed dispersal, human settlements and resource utilization, environments are interconnected. The local environment is part of a larger, global environment.*] Have students provide examples if they can.
4. Ask students what they think a fragile environment is. Clarify or explain as needed. [*One in which the elements are not working together in a balanced way, creating a delicate, precarious situation which cannot sustain itself indefinitely*].
5. Divide your class into small groups and assign each group one of the three dilemmas handouts (HANDOUT #s 13-15). Ask them to analyze what factors are contributing to the creation of fragile environments in their dilemmas. Have them list their ideas on a piece of newsprint.

6. DE-BRIEF

Have each group present their findings to the rest of the class (Have all the water dilemma groups report one after another, all the land dilemma groups report after one another, etc. so that comparisons and contrasts between different groups' perspectives can easily be made).

Once all the groups have reported, ask the class to come up with a composite list of factors that can contribute to the fragility of an environment. Quickly outline this on newsprint, and ask them to add another factors, not represented by the dilemmas, that they think could lead to an environment becoming fragile. [*Natural resources, weather patterns, pests, agricultural practices, industry, human and animal population growth, government policies, trade, etc.*].

7. In their groups again, have students try to develop a solution/plan to resolve each of their dilemmas; that is, to manage the environmental resources in such a way that they meet the people's needs without becoming more fragile. It may be helpful for them to address the following questions as they develop a plan for dealing with each dilemma:

- What natural resources are involved?
- What is the problem?
- Who is affected by the problem, and in what way(s)?
- How will you resolve the dilemma?

8. DE-BRIEF

Have groups present their dilemmas and solutions. Encourage students to consider the difficulties with their solutions, and stress the complexity of the problem of fragile environments.

9. Conclude the discussion about fragile environments by summarizing what it takes to manage fragile environments:

- access to resources (point out that women often do not have access to the same resources as men)
- research and know-how
- education
- options and incentives for people

FOLLOW-UP ACTIVITIES

- Have students collect articles about environmental problems, and point out how the problems affect other people and places.
- Study the problems of fragile environments in a specific geographic region through videos, guest speakers and library research.
- Engage students in a role-play or debate about a current fragile environment issue so they can experience the challenge of addressing the needs and concerns of all affected by an environmental situation.

ALTERNATIVE PROCESS

- Once a general definition of fragile environments has been presented, have students do their own case study research to understand better what fragile environments are and what causes environments to become fragile. The research could be done through books, journals, magazines, videos, or personal interviews.

4.5. CIRCLE OF POISONS

SUGGESTED GRADE LEVELS 10 - 12

PURPOSE

To become aware that toxic chemicals and their potential dangers affect people worldwide, regardless of where and for what purposes the chemicals are produced.

OBJECTIVES

Students will be able to:

- Show the global, circular nature of poisons on a world map.
- Identify several health problems related to pesticide use.
- Explain the complexity of factors that perpetuate the circle of poisons.
- Critique proposed solutions for resolving the circle of poisons problem.

TIME REQUIRED 1 1/2 - 2 hours

PLACEMENT WITHIN THE CURRICULUM

- as a global awareness exercise in a chemistry class
- as part of an environment unit
- as a part of a study on developing countries
- as an exercise within a geography class
- as an approach to addressing international trade regulations
- as part of a health curriculum

STUDENT PREPARATION

- familiarity with, or simultaneous teaching about, the use and effects of pesticides mentioned in briefing sheets
- introduction to development issues that Third World countries face

MATERIALS NEEDED

- HANDOUT #16 (Circle of Poisons Fact Sheet)
- HANDOUT #17 (Solving the Circle of Poisons Problem)
- a world map
- newsprint
- marking pens
- tape

PROCESS

1. Introduce the exercise as appropriate for your curriculum.
2. Divide the class into groups of six, give each group two sheets of newsprint and markers, and give each student a copy of HANDOUT #16.
3. Ask each group to count off from one to twelve so that each person has two numbers. Explain that each person will be responsible for reading and "teaching" the rest of his or her group about two aspects (based on that person's numbers) of the circle of poisons.
4. Tell the groups that as group members explain their aspects of the circle of poisons (in numerical order), the other group members are to jot down, on a piece of newsprint, any questions they might have. After all twelve of the aspects have been presented, the group is to use the other sheet for making a diagram or poster that depicts their understanding of the circle of poisons. Give the groups ample time to work, and be available for answering questions and offering guidance as needed.

5. DE-BRIEF

Hang each group's list of questions and poster on a wall so that you can easily refer to them during the de-briefing discussion.

Have students summarize each aspect of the circle of poisons, locating the places mentioned on a world map. Drawing on the summaries and posters, discuss each aspect of the circle of poisons, address the questions that each group listed out, and clarify any scientific or organizational terms that might cause students difficulties.

6. Have the students form their small groups again, give each group newsprint and markers, and each person a copy of HANDOUT #17. Let each group choose two solution proposals to analyze in terms of their pros, cons, possible impacts, and feasibility.

7. DE-BRIEF

Have each group present its solution and its analysis. Challenge them to look at questions or issues that they might not have thought of. Conclude the discussion with the following points.

- The circle of poisons involves many complex issues and, as your analyses revealed, is not an easy problem to solve. In the first place, there are powerful institutions promoting the use and exportation of dangerous pesticides: chemical companies, farmers, governments. Second, the situation of world development is such that Third World countries do not have the technology or resources to produce their own, less harmful pesticides.

- So, who is responsible? Who should be asked to make changes? At what cost? How will the change be monitored or enforced? Whatever solution is sought, it must take into account existing power differences as well as the needs of people throughout the world.

FOLLOW-UP ACTIVITIES

- Ask each student to write his or her own solution for the circle of poisons problem.

- Have students research and report on one of various related topics: local pesticide use and application practices; pesticide use in a developing country; the history of the development, use and banning of a specific pesticide; health issues in developing countries. If possible have students include personal interviews as a part of their research.

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CHAPTER 5
DEVELOPMENT

5.1. THE DIFFUSION OF TECHNOLOGY

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To learn about international development, transfer, and impact of technology.

OBJECTIVES

Students will be able to:

- trace the origin and changes in technology for selected subject areas.
- identify the reasons for change in technology.
- define the technology transfer mechanisms, especially what pushed technology to move from one area to another.
- outline negative and positive impacts that the development and diffusion of technology has had on humankind.

TIME REQUIRED 1 1/2 - 2 hours

PLACEMENT WITHIN THE CURRICULUM

- as an activity within a geography class
- as a world history lesson
- as part of a science unit
- as part of a study on developing countries

STUDENT PREPARATION

- familiarity with the location of continents and some countries within them

MATERIALS NEEDED

- HANDOUT #18 (The Development of Automobiles)
- HANDOUT #19 (The Development of Agriculture)
- HANDOUT #20 (The Development of Food Storage and Preservation Processes)
- HANDOUT #21 (The Development of Medicine)
- HANDOUT #22 (The Development of Computers)
- whipping cream

- three bowls (one that can be used with an electric mixer)
- an electric mixer
- a hand beater
- a fork
- a world map
- newsprint
- markers
- tape
- envelopes
- colored paper (if possible)

PROCESS

1. Identify the fields through which you would like to have your students study the origin and development of technology. For example, agriculture, automobiles, computers, airplanes, music, etc.
2. Either use the information from HANDOUT #s 18-22, or historical timetables, chronologies, or encyclopedias to summarize the origin, development and diffusion of technology for your chosen area. Write each summary out on a different color of paper (if possible) as a list of facts. Cut each list and place the facts for each area in a separate envelope.
3. Introduce the topic of technology by having three students simultaneously demonstrate three ways of, or technologies for whipping cream: with a fork, with a hand beater, and with an electric mixer. After the first person has whipped their cream, stop the demonstration and discuss the concept of technology through the following questions and points.
 - Which technology for whipping the cream was the quickest?
 - Which technology required the greatest amount of human energy? least?
 - Of the three methods demonstrated, which reflects the lowest level technology, and which the highest?
 - What do we mean when we refer to technology? *[A technology is basically a way of doing something. There is always a way that something can be done better. So, as the way that we do something becomes better or more efficient, we say that its technology changes from a lower level to a higher one. For example, in developing countries, it is common to wash clothes by hand. This work requires a lot of time and human energy. A more efficient way of washing clothes (at least in terms of human energy expenditure) is with a washing machine. Thus, in washing clothes with a machine, one is using a higher technology than by washing them by hand.]*

4. Divide the students into groups of 3-5. Give each group one envelope with technology facts of a specific area, and ask them, as a group, to sort out the levels of technology by appraising the complexity of the innovation or invention in question.

5. Having sorted out the levels of their technology, ask them to sort out the origin of the different levels of the technology by continent or country, pasting each piece of paper to the particular continent/country where the technology originated.

6. Let students discuss in their groups what they understand from the map exercise. What does the situation reveal about technology?

7. DE-BRIEF

Ask the groups to share their findings with the whole class, and discuss the diffusion of technology through the students' input and the following points.

- Technology progresses from simple to more complex.

- Inventions and the circulation of inventions, or what has been called production and diffusion of technology has had a major impact on people's lives. Three ingredients in the production and diffusion of technology include:

 - the relationship between people

 - the relationship between people and their environment

 - the relationship between components of the environment

- Technology is usually problem or need specific; its development depends on the problems people face and the needs they seek to meet. Because of their ability to interact and communicate with one another and problem solve, people have been said to have the greatest ability to pass on information, ideas, innovations, attitudes, knowledge, and skills to one another with great efficiency. Fortunately or unfortunately for human beings, addressing one problem has often led to the creation of other problems. Hence, people are always in a situation of having to confront a problem. They have found that discussing problems and sharing possible alternatives for solving them helps a great deal in progressing with meeting people's needs.

- Technology has a geographical, chronological, and systematic character. Geographically, technology diffuses from one place to another, moving from one subset of the environment to the other through human interactions. With regard to chronology, people tend to always "improve" upon technology as time passes.

Someone will always seek to improve upon a previous invention, so technology undergoes some type of revolution. As a system, technology embodies the influences of the relationship between components of an environment. Through its influence on the environment, technology has become a threat to the very existence of humankind. Energy and natural resources have been said to be the ingredients of our very existence. Technology is used to manipulate these so as to best meet people's needs; however, in the process of doing this, sometimes energy and natural resources are destroyed.

8. Divide students into their small groups again, and hand out newsprint and markers. Ask each group to develop a model which, for them, depicts what technological diffusion is all about.

9. DE-BRIEF

Have each group present and explain its model, commenting and asking for clarification as appropriate.

10. Conclude the discussion with the following points.

- Technological diffusion starts with the basic interactions between people close to each other. A lot of decision-making processes take place as people continually evaluate the efficiency with which innovations meet current needs. Such processes occur at a local level. Through travel, education and marketing, people from one area share their ideas with people in other areas, transferring technology from one place to another. But the technology does not operate in a vacuum; it operates under the constraints of the environment in which people are living. So, what works well for people in one area might not serve people in another region. In short, technology uses components of one's environment and acts on the environment to make it more "productive."

5.2. WHAT DO ALL THESE NUMBERS MEAN?

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To gain experience in reading and interpreting development statistics.

OBJECTIVES

Students will be able to:

- develop statistical data about people and objects in their immediate environment.
- define several statistics used in describing the lives of people in different countries.
- discuss some of the problems related to the accuracy of statistical information.
- draw preliminary hypotheses about the condition of people's lives in given countries by comparing statistics about these countries.

TIME REQUIRED 2 - 3 class periods

PLACEMENT WITHIN THE CURRICULUM

- as a way of internationalizing a math curriculum
- as an introductory exercise in a unit on development
- as an exercise in a world geography or social studies class
- as a means of preparing students to work with historical statistics

STUDENT PREPARATION

- working knowledge of ratios and percentages

MATERIALS NEEDED

- HANDOUT #23 (Examples of Statistics from African Countries)
- resource books with statistics on developing countries
- newsprint
- markers
- tape

PROCESS

1. Introduce the idea of statistics by having pairs or small groups of students gather information to answer the following types of questions about their classroom:

- How many students are in this class?
- How many females? How many males?
- What is the ratio of females to males? What is the percentage of males? Of females?
- How big is the floor space of the classroom in square meters?
- What is the population density in terms of students per square meter of floor space?
- What is the average height of the students in the class?

2. DE-BRIEF

Have students share their answers with the whole class, and point out the basic meaning and use of statistics through the following points and questions:

- The numbers, data or information you came up with about the classroom are called statistics. What can statistics be used for? *[Measuring, describing, comparing things, etc.]*.
- From your experience with developing your own statistics, you can see that statistics are not just a bunch of numbers; rather, they are numbers that give us information about people and things. With that descriptive information, we can compare and contrast certain situations.
- In the exercise you just completed, you developed statistics about a specific environment, this classroom. What kinds of statistics or information do you think would be important to know about if you were going to compare the lives of people in different countries (write students' responses on newsprint for later reference)? *[how much and what people eat, the population of a place, how much education people have, what the average income is, etc.]*.

3. Explain that there are many statistics that can be included in describing and comparing the lives of people in different countries, and that shortly the students will be given an opportunity to do their own research on statistics of different countries. Give each student

a copy of HANDOUT #23, and indicate that you are going to examine a few basic statistics that one commonly finds on countries. Go through the statistics, leading the students to an understanding about them through the following kinds of questions and points:

- What does km. mean? [*Kilometer*]. How many kilometers are in a mile? [*About 1.6*]
- What does density refer to? [*The amount of something in a given area*].
- Which of the countries listed has the lowest population density? [*Chad*].
- Based on the geography of Africa, why might this be? [*Chad is located in the region of the Sahara desert, which is a difficult environment for humans to live in*].
- What does per capita mean? [*Per person*].
- What is literacy? [*The ability to read and write*].
- What does GNP mean? [*Gross National Product. This is the total value of all goods and services produced in a nation. It is usually measured on an annual basis*].
- Which of the countries listed has the greatest growth rate? [*Chad*]. Why might that be so? [*Political strife, among other factors has made it very difficult for Angola and Somalia to grow economically in recent years*].
- What general areas do these statistics give us information about? [*Population or demographics, nutrition/health, education, and the economy*].
- What kinds of problems might one have in either gathering or interpreting these kinds of statistics? [*There is not always enough information available; sometimes the research behind the statistics is not accurate, i.e., taking a population census in a region during a heavy migration season; the meaning of terms is not always clear, i.e., how well does one have to read and write to be considered literate?; people establish false relationships between statistical data, i.e., concluding that ice cream sales cause drowning because in some place the number of drownings is greatest during the same months that the number of ice cream sales is the highest. In this case, the reason behind the drownings would more likely be that during the warm months, more people go swimming and more people buy ice cream*].

3. Individually or in pairs, have students gather 12-15 statistics that would help them understand more about the lives of people in three different developing countries. Encourage them to gather a few statistics from four or five different areas, such as health, education, the economy, etc. Let students use books, computer programs, or whatever other resources are available for their research. If need be, help them identify possible resources.

4. Once the students have their data, ask them to write up some preliminary comparisons and hypotheses about the lives of the people on whose countries they conducted research. Have them hand in a copy of their data as well as their comparisons and hypotheses.

5. DE-BRIEF

From the students' work, choose a couple of sets of statistics for the whole class to analyze. Direct the students by asking them questions that would help them compare the different countries and consider the meaning of, or reasons behind, the numbers they are interpreting.

6. Conclude the activity with these points:

- The research you conducted to find out about the lives of people in other countries is extremely important. Interpreting statistical data is one way to gather information and gain a better understanding about people, places and situations. Now when you come across statistics in your reading, you will know how to go about reading and analyzing them.

- In order to have a more complete picture of what the lives of people are like in different countries, one would have to gather more statistical as well as other descriptive information about them. This can be done through books, magazines, journals, newspapers, videos, films, computer programs, and people who are from or have studied about other countries.

FOLLOW-UP ACTIVITIES

- Have students do further research on one of the countries for which they gathered statistics; ask them to compare their new understanding about life in that country with their preliminary hypotheses about it.

- Ask students to use collage, poster, or another art form to express what they have learned about their countries through statistics.

- Have students write a poem, story, or letter, comparing two of the countries on which they have conducted research.

5.3. AGRICULTURE AND HUNGER IN ZIMBABWE

SUGGESTED GRADE LEVELS 10 - 12

PURPOSE

To understand the agricultural systems in Africa and how global events have contributed to the situation of hunger.

OBJECTIVES

Students will be able to:

- describe the two major agricultural systems of Zimbabwe.
- discuss the positive and negative impacts that each of these agricultural systems has had on the people of Zimbabwe.
- explain how global events have contributed to the development of these agricultural systems.

TIME REQUIRED 2 class periods

PLACEMENT WITHIN THE CURRICULUM

- as part of a study on world hunger
- as a lesson in a regional study of Africa
- as a means of internationalizing an agriculture class
- as a follow-up to a lesson or unit on colonization

STUDENT PREPARATION

- an understanding of the colonization of Africa
- familiarity with the concept of world trade

MATERIALS NEEDED

- HANDOUT #24 ("Subsistence" vs. "Commercial" Agricultural Production)
- HANDOUT #25 ("Zimbabwe Poised for Huge Land Reform")
- SLIDE SET #2
- SCRIPT TO SLIDE SET #2

- newsprint
- markers
- tape

PROCESS

1. Introduce the topic by asking students what they know about the situation of hunger in Africa. Explain that you are going to look at the question of hunger in Africa through an examination of the agricultural system, beginning with some slides about agricultural production in Africa.

2. Show SLIDE SET #2, following script. Encourage questions and discussion as you go through the slides.

3. DE-BRIEF

In a discussion with your students, draw from them what they understood and found interesting about the slides. The following types of questions may be helpful:

- What two types of agricultural systems exist in Africa? [*subsistence, commercial*].

- What does subsistence agricultural production refer to? [*Agricultural production done on a small scale, generally for home consumption and the sale of surplus goods at local markets*].

- What does commercial agricultural production involve? [*Large scale production using mechanization to work big plots of land. Commercial crops are used nationally or for international export. Storage facilities must also be large*].

- What did you notice about the technology being used in the agriculture slides? [*Subsistence farming involved hand tools, while commercial agricultural production involved the use of large facilities and better technology*].

4. Distribute HANDOUT #24 and summarize with your students the differences between subsistence and commercial agricultural production.

5. Distribute HANDOUT #25 for your students to read as homework. Explain that this article presents an actual case of agricultural systems in Africa - that of Zimbabwe.

6. The next class period, briefly review the colonial history of Zimbabwe with the students, and answer any questions they might have about the article.

7. Divide the class into small groups, and ask each group to analyze the Zimbabwe case according to the following questions about the article. As the students work, be available to help them, if needed.

- What are the two major agricultural systems in Zimbabwe? *[Subsistence and commercial].*
- How did each of these systems come about? *[Through various agrarian policies since the time of colonization and the drive to export crops].*
- Are there any problems with the agricultural systems in Zimbabwe? If so, what are they? *[Productive communal farmers do not have opportunities to engage in large-scale farming, not all commercial lands are being used efficiently, the communal areas are overpopulated, etc.].*
- What are the driving forces behind these problems? *[Again, the agrarian policies that have been established since the time of colonization, the global market, unequal access to resources, etc.].*

8. DE-BRIEF

As a whole class, go over the students' responses to the questions. Include the following points and questions in your discussion. Use newsprint to outline important points.

- As a consequence of colonialism and global influences, agriculture has become the backbone not only in terms of its role of providing food to the population but also as a source of foreign exchange for most African countries. It is a primary source of economic growth for all sub-Saharan African countries.
- How might this dual purpose of agriculture contribute to poverty and hunger in Africa? *[It has created competition between the necessity of food and money, large-scale farmers are exploiting small-scale farmers; large-scale farming takes up the most arable land, which is not necessarily being used most productively; it has influenced the division of labor in rural areas; drought and population pressures have damaged and created unmanageable stress on the agricultural systems; and intensive farming for exportation has led to the destruction of the environment].*

9. Conclude the discussion with the question, "So, why hunger in Africa?" *[One major reason for this is that Africa has been influenced by global forces, such as colonialism, capitalism, and trade, which have led it to develop a dual purpose agricultural system. As pointed out earlier in the discussion, this system has several problems which has contributed to a situation of hunger in Africa].*

FOLLOW-UP ACTIVITIES

- Examine the causes of hunger in other countries through case studies. Compare and contrast.
- Explore the question of world hunger further through participation in World Food Day activities or study of a World Food Day packet.
- Have students compare the agricultural system in Zimbabwe with that of the U.S.

5.4. TOUGH DECISIONS

(Lesson adapted from "Decisions for a 'Developing Nation,'" designed by Fred Cotterell, Paramus High School, Paramus, NJ. See Brown et al., 1991.)

SUGGESTED GRADE LEVELS 9 - 12

PURPOSE

To appreciate the difficulty of the decisions that developing country leaders must make in order to best meet the needs of their people.

OBJECTIVES

Students will be able to:

- create a development plan, from a list of possible development projects, for either Brazil or Senegal.
- describe the tensions involved in trying to satisfy the diverse development needs of a developing country with a limited budget.
- discuss the complexity of and relationship between development problems.

TIME REQUIRED 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- within a geography or social studies unit about developing countries
- as an activity in a world affairs or international relations class
- as an exercise in a study on comparative governments
- within a study on global resource utilization

STUDENT PREPARATION

- familiarity with and understanding of the development issues that the case study countries face
- previous work with and understanding of development indicators and statistics
- an understanding of the concept of sustainable development

MATERIALS NEEDED

- HANDOUT #26 (Tough Decisions)
- HANDOUT #27 (Senegal Country Profile)

- HANDOUT #28 (Statistics on Senegal)
- HANDOUT #29 (Brazil Country Profile)
- HANDOUT #30 (Statistics on Brazil)
- profiles and statistics on other developing countries, as fits your curriculum
- newsprint
- markers
- tape

PROCESS

1. Review with the students what they know/have learned about the countries to be studied in the cases, explaining that they are going to be able to use their understanding of these countries to make some important development decisions about them.
2. Divide the class into groups of 4-5. Explain that each group is made up of a Minister of Health, a Minister of Education, a Minister of Agriculture, and a Minister of Trade and Commerce of a developing country. If there are five people in a group, the fifth person will observe and record the interactions of the other group members during the exercise.
3. Give each student a copy of HANDOUT #26, and go over the written directions of the exercise with the groups; explain that each of the ministers is to defend and try to gain support for funding projects in his or her own area of expertise.
4. Distribute HANDOUT #s 27-30 and, or profiles and statistics on other developing countries you wish to include in this exercise; each group should work with just one country. Go over any statistics that may be unfamiliar or confusing to your students.
5. Give the groups ample time to work on their cases, and provide them with newsprint and markers for outlining their development plans and rationale behind their choices.
6. DE-BRIEF

Get feedback on the group dynamics of the exercise through these kinds of questions:

- Those of you who were observers, what kinds of interactions did you see during the exercise?
- Those of you who were ministers, how did you feel about the decisions that were made? (Discuss the difficulty of prioritizing development efforts when there are many diverse needs to be met).

- What are the major development issues that this country faces?
- What kinds of resources did this group choose to develop?
- Is this focus appropriate given the major development issues of the country?
- Is any income generated from this plan? How? How much?
- How will the plan fund itself in the future?
- Are any resources being destroyed in the implementation of this plan? Which ones? How? How could their destruction be prevented?
- Is this development plan sustainable (both financially and in terms of its impact on resources)? How or how not? If not, what would it take to make it sustainable?

7. Conclude the discussion with the following points:

- The issues facing developing countries are complex. One issue often aggravates another. Sometimes one issue or problem prevents a country from being able to properly address other pressing problems. For example, the lack of infrastructure in rural areas of many countries makes it difficult for them to have adequate health facilities.
- Funds for implementing development projects are often limited. So, when people representing different needs of the country try to decide together how to best invest money for development purposes, the discussion can get very heated.
- When thinking about implementing a development project, one must consider the impacts that it will have on human, technological and physical resources, and how it is going to be sustained in the future.
- Although the task is not easy, with careful research from different disciplines, i.e., economics, sociology, environmental sciences and anthropology, well-thought out decisions, that will help improve people's lives, can be made.

8. As a homework assignment, have each student write a three-page development plan for the country studied in his or her group.

FOLLOW-UP ACTIVITIES

- Have individuals or pairs of students do some research in order to be able to develop their own profile and table of statistics for a developing country. Then have them write development plans based on the information gathered through their own research.
- Have the students learn more about development assistance through journals or by writing to donor organizations for information. Compare and contrast the organizations and the kinds of projects they fund.
- Invite people from or with experience in the developing countries studied to talk about their perception of those countries' development issues and how they might best be addressed.

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WORLD WISE SCHOOLS - Teachers in elementary and secondary schools in the U.S. who are interested in teaching their students more about the realities of another country can do so through the Peace Corps World Wise Schools program. The program encourages an exchange of information - letters, photos, tapes, art projects, etc. - between the participating school classes and a Peace Corps volunteer, and provides special materials and suggested activities several times a year. All of the activities and materials foster increased cross-cultural awareness through a better understanding of the historical, environmental, and political contexts in which another culture operates. Contact: Shirley Puchalski, World Wise Schools, U.S. Peace Corps, 1990 K Street NW, Washington DC 20526; Telephone (toll-free) 1-800-424-8580.

CHAPTER 6
LITERATURE

6.1. CREATIVE STORY TELLING

SUGGESTED GRADE LEVELS 1 - 12

PURPOSE

To learn about the language and culture of a country through creative story-telling.

OBJECTIVES

Students will be able to:

- interpret a story read in a foreign language, based on their knowledge of the language and, or clues from the props used for the story.
- identify what they learned from the story about the culture/country in which it took place.

TIME REQUIRED 30 - 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as an activity in a foreign language class
- as a creative writing lesson
- as a hook-in to a geographical region study
- as an exercise in a social studies class
- as a way of internationalizing an art curriculum

STUDENT PREPARATION

- some familiarity with the foreign language of the story is useful, but not necessary

MATERIALS NEEDED

- a story from a foreign culture, preferably written in a language other than English
- paper characters, puppets, or other props that will help convey the meaning of the story
- a world map
- paper
- pens or pencils
- tape recorder (optional)
- art materials

PROCESS

1. Choose a story from a foreign culture. You may select an English language text and translate it into the language of its origin, or a folk tale or story written in another language.
2. Prepare paper characters, puppets and any other props you will need to assist you in telling the story.
3. Tell the story to your students in the foreign language, using the props you have created to help them understand.
4. Ask students to write or tell their own interpretations of the story. Let them work individually or in small groups.
5. Let students share their stories with the class.
6. Read the story in English.

7. DE-BRIEF

Using a map, engage the students in a discussion about geographical and cultural aspects of the story through the following types of questions (these will vary according to your story):

- In what language was the story read?
- In what places of the world is this language spoken?
- From where did this story originate?
- Who were the characters?
- What were they wearing?
- What does their dress tell you about the geography/climate of where they live?
- What kinds of new or different things did you see in the pictures? (Explain cultural relevance).
- What else do you know about this place? (List on newsprint).

8. Conclude the discussion by sharing with the students something about the culture/country in which the story took place.

FOLLOW-UP ACTIVITIES

- Work with your students on an art project to create one of the story characters.
- Study in more depth the culture/country depicted in the story.
- Have your students do research on a different country, and write stories that take place in that country.
- Invite a student or local citizen to help teach the class about the country of the story.
- If a special food was a part of the story, prepare it in class.

ALTERNATIVE PROCESS

- Have a student or local citizen from another country tell the story for you.
- Use the activity in an advanced language class to study meta-language: Have a small group of students get together to write and present a story.

6.2. "THE GREAT KAPOK TREE"

Resource Utilization in the Amazon Rain Forest

SUGGESTED GRADE LEVELS 4 - 7

PURPOSE

To become familiar with the Amazon Rain Forest ecosystem and the controversies over the utilization of its resources.

OBJECTIVES

Students will be able to:

- identify several animals that live in the Amazon Rain Forest.
- describe the vegetation of the Amazon Rain Forest.
- explain the role the Amazon Rain Forest plays in the global environment.
- discuss ways that people use the Amazon Rain Forest and how they affect its resources.

TIME REQUIRED 50 - 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a science lesson on ecosystems and/or the global environment
- as part of a study on Latin America
- as a hook-in to an art project
- as a language arts activity

STUDENT PREPARATION

- familiarity with basic concepts of geography
- previous introduction to Latin America

MATERIALS NEEDED

- overhead of MAP #6.003 - BRAZIL
- a world map
- a merged relief map of Latin America

- a copy of "The Great Kapok Tree" by Lynne Cherry (see References and Resources at end of chapter)
- a video, pictures or slides showing various geographic regions of Brazil (if possible)
- an overhead projector
- a slide projector or video machine (depending on visual aid used)
- newsprint
- markers
- tape

PROCESS

1. Introduce the topic as appropriate for your curriculum. Then, using the world and Latin America maps, and the overhead of MAP #6.003 (Brazil), orient students to the Amazon Rain Forest region through the following questions:

- What continent do we live in? [*North America*].
- Where is South America?
- What bodies of water border South America? [*The Atlantic Ocean, Pacific Ocean, and Caribbean Sea*].
- Where in South America is Brazil?
- What countries and bodies of water border Brazil? [*All South American countries except Ecuador and Chile; The Atlantic Ocean*].
- Where is the Equator located?
- Can you find the Amazon River?
- What do you know about the Amazon? [*It is the longest river in the world; it lies within the largest tropical rain forest of the world, etc.*].

2. Point out that the story you will be reading is about the Amazon Rain Forest. Explain to your students that about two-thirds of Brazil's land is found in the Amazon Rain Forest, but that the rest of Brazil is not tropical forest lands. Have students try to imagine what kinds of climatic regions the rest of Brazil has. List them on newsprint.

3. If a video, pictures or slides depicting the geography of Brazil are available, show it/them. If not, use a merged relief map to point out the diverse geographic regions of Brazil:

- Northeast (Sertao) - a hot, very dry area that has beautiful white-sanded beaches, but also problems of drought.
- West (Pantanal) and Minas Gerais - a region in which one finds a lot of marshes, wildlife, and minerals.
- Southeast (Rio and Sao Paulo) - the major industrial region
- South - an important agricultural area in which one finds European settlements, particularly German ones.

4. Introduce the setting of "The Great Kapok Tree" by explaining a little about the ecosystem of the Amazon Rain Forest and how it relates to the global environment. Include points such as the following:

- The Amazon Rain Forest has four basic levels of vegetation: the upper canopy, lower canopy, understory, and emergent trees.
- Viewed from above, the upper canopy forms an almost continuous blanket of green. The leaves of the upper canopy capture more than 90% of the sunlight and conducts the bulk of photosynthesis, or the food production of plants.
- The lower canopy includes the smaller trees, bushes and plants, and is used by many animals to get to more permanent haunts atop the tall trees or on the ground.
- The understory refers to the ground area of the rain forest; this part may receive only 1% of the forest's sunlight. Here, boa constrictors and other animals search for their prey among the lush vegetation and waterways.
- Emergent trees are those that stick out above the dense upper canopy. Open to the wind, the seeds of these trees spread easily assuring their reproduction.

5. Read "The Great Kapok Tree," asking your students to pay particular attention to the kinds of animals in the story, and what messages these animals are giving "o senhor," or man.

6. DE-BRIEF

Lead the students in a discussion about the story, including the following types of questions and points:

- What kinds of animals did you hear about in the story? [*Sloths, toucans, tree frogs, boa constrictors, etc.*].

- Who were the people involved in the story? *[The two men (the man who was cutting and his boss or foreman) and the indigenous boy].*

- What were the animals telling the man? *[Why the forest was important to them].*

- Why was the forest important to the animals? *[It provided food and shelter].*

- Do you think the Rain Forest was important to the man, or is important to humans? How/how not? *[Yes, because it provides wood, oxygen, beauty, and resources for medicines, etc.].*

- The Amazon Rain Forest is a gigantic ecological machine that is very important to all humans as well as animals). The Rain Forest is a special environmental system (ecosystem) that works on the basis of sun energy and water: ocean evaporation falls as rain, which returns to the sea or rises, after it is used by the vegetation, back to the atmosphere. On a larger scale, hot tropical air rises along the Equator and spreads toward the Poles, while cold polar air sinks and moves toward the Equator. The earth's rotation deflects this north-south movement, creating trade winds that meet along the Equator between South America and Africa. The northeast trade winds transport dust from deserts in Africa, which enrich the thin Amazon Rain Forest soil.

- Why do you think the man was cutting down the trees? *[For wood, to clear the land, etc.].*

- The cutting and burning of trees in the Amazon Rain Forest can cause serious problems to the forest itself, and to the whole globe. When it is healthy and working well, the forest is a good absorber of carbon dioxide (gas that is produced when humans and animals breathe out) and producer of oxygen (which we breathe in and need to live). Yet, in the dry season, the air often smells from fires set by people who are clearing the land. The cutting and burning of trees releases huge amounts of carbon dioxide, helping trap heat, which many scientists believe is warming the earth through the greenhouse effect.

7. Conclude the discussion with the following questions and points:

- This story points out some of the impacts that cutting down a rain forest has on the wildlife that lives in the rain forest, as well as on humans around the globe. However, the story leaves some important questions unanswered. For example, how do you think the man made a living after he decided not to cut down the trees? *[Maybe he got another job, maybe he had to move to another region of the country in order to find work, or maybe he couldn't find work].*

- By choosing not to clear the forest, the man chose to leave a home for the animals, protect one of the world's greatest oxygen supplies, not destroy a potential resource for important medicines, and preserve an area of great beauty. But, his decision also meant the possibility of other difficulties. For example, if he couldn't find other work, he might have had to move with his family, or his family might not have had enough food to eat, or they might not have had money to get health care when they needed it, etc. In short, the solutions are not easy, as there are advantages and disadvantages to each decision we make about the use of our natural resources. What would you have done if you were the man?

8. For homework, ask the students to write short essays on the question you left them with, "What would you have done if you were the man?"

FOLLOW-UP ACTIVITIES

- Have the whole class work on an art project re-creating the Amazon Rain Forest (through coloring, painting, use of construction paper, cloth, etc.).
- Have each student prepare a written report about one of the animals in the Rain Forest. Post the reports with pictures of the animals around the room, like a museum.
- Study further the importance of the Amazon Rain Forest ecosystem through videos, a trip to a science museum or zoo, or through a guest speaker.

ALTERNATIVE PROCESS

- Stop the story before the last page. To get a sense of how much the students were picking up just from the story, i.e., without the information from the discussion, have them write their own endings to the story. After they have finished and shared their writings, tell them the end of the story and continue the discussion.

6.3. "THE STORY OF THE TORTOISE"

Stories and Lesson for Life among the Igbo of Nigeria

SUGGESTED GRADE LEVELS 1 - 6

PURPOSE

To experience a traditional Igbo way of teaching.

OBJECTIVES

Students will be able to:

- locate Nigeria on a world map.
- identify one way that the Igbo people teach their children.
- explain the moral of "The Story of the Tortoise."

TIME REQUIRED 20 - 30 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a reading activity
- as background to a creative writing assignment
- as a social studies lesson
- as a way of teaching world geography

MATERIALS NEEDED

- HANDOUT #31
- a world map
- paper
- pencils or pens
- newsprint
- markers, crayons or paints

PROCESS

1. Introduce the story as appropriate for your curriculum.
2. On a world map, have students locate Africa. Point out to them that Africa is a

continent with many countries. Ask students to share the names of countries that they know of in Africa.

3. Have the students locate Nigeria. Point out that, within each African country, there are often many culture groups; that is, groups that share a particular language and set of beliefs and practices. For example, in Nigeria, one of the groups of people is the Igbo, who speak the Igbo language.

4. Explain that, in Africa, stories are told for entertainment, as well as to teach morals and life lessons. They are ways of teaching children the Do's and Don'ts of a society. Through stories, the teaching of rules for living is done in a rather indirect manner. A folk story usually ends with a moral or lesson that is derived from the context of the whole story. For example, in a story about a lazy person, the moral lesson is to avoid laziness, because it may cause you some problems. In the stories, symbols are used to represent certain ideas or patterns. These symbols could be particular animals or birds, an imaginary old woman, child, old man, boy, etc. The symbols help to make the moral or lesson clear.

5. Introduce and tell "The Story of the Tortoise" (HANDOUT #31), asking your students to pay attention to the lesson being taught.

6. DE-BRIEF

Ask your students for feedback about the story. Depending on grade level, either directly ask them for the moral of the story [*It is not good to be greedy*], or work up to it through questions about the different characters in the story, especially the tortoise. For readers, write student responses on newsprint.

7. Conclude the activity by discussing what other kinds of lessons or morals could be taught through stories.

FOLLOW-UP ACTIVITIES

- From the lesson/moral themes that the students developed, have individuals or small groups of students choose a theme, and create a story that would teach that moral. Stories could be presented orally, through pictures, drama or writing.

- Give your students time to read folktales and fables from other African countries and culture groups. Compare and contrast the lessons and cultures.

- Develop a mini-drama from "The Story of the Tortoise."

6.4. "THE DISILLUSIONED GAB BOYS" Education in Africa

SUGGESTED GRADE LEVELS 9 - 12

PURPOSE

To compare and contrast education in Africa with that of the U.S.

OBJECTIVES

Students will be able to:

- describe their own educational system.
- explain the role that colonization had on education in Africa.
- discuss the similarities and differences between education in Africa and education in the U.S.

TIME REQUIRED 50 - 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a geography unit on Africa
- as a social studies lesson
- as part of a history unit on colonization or education

STUDENT PREPARATION

- familiarity with the concept of colonization
- an introduction to the impacts of colonialism on Africa

MATERIALS NEEDED

- A copy of "The Disillusioned Gab Boys" (see References & Resources)
- newsprint
- markers
- tape

PROCESS

1. Introduce the topic by telling students they are going to study about something that

makes up a big part of their lives, whether they realize it or not - education. Initiate the discussion with the following questions to guide students in thinking about what purpose education serves. Encourage participation in the discussion, and note student responses on newsprint.

- Why are you going to school?
- It was once believed that the purpose of education was to prepare people for certain kinds of jobs. Is this true today? How/how not?
- What do you think awaits you after high school?
- Does school prepare you for life? How/how not?

2. Point out that education everywhere has certain purposes, and to accomplish different purposes, different educational systems are established. Through the following types of questions, have the students identify several aspects of their own educational system:

- What is the average number of years people in the U.S. go to school?
- Is education here mandatory? For how many years?
- Are schools easily accessible to everyone? How do you get to school?
- How is education funded in the U.S.?
- What kinds of courses are taught at your school?
- What kinds of extracurricular activities can you participate in at your school?
- Are there any particular exams you have to pass in order to move from one grade or educational level to another?
- What else would you add to this to describe the educational system in the U.S.?

3. Shift the focus to education in Africa through the following questions and points:

- In talking about education in Africa, one must really look at two systems of education - Traditional and Formal. Try to imagine Africa before it was colonized by Europeans. What do you imagine the educational system was like? *[No school buildings, apprenticeships, parents teaching their kids, etc.]*
- Traditional African Education was "education for life." The subjects taught were things that young people would need as they became adults in their society.

Vocational skills taught included farming, hunting, fishing, cooking, weaving, medicine, justice; intellectual learning centered around story-telling and learning about local history; recreational training included wrestling, dancing and drumming. The learning process was participatory; students learned by doing, and practical tests were given to assess new skills.

4. Distribute the story to the boys only, and tell students that, through this story, they will be able to capture a glimpse of the changes that colonization brought to education in Africa. When the students react to your not initially giving readings to the girls, explain that, in most sub-Saharan African countries, girls are much more limited in their opportunities to study than boys are (because of girls' economic contribution to the family by working at home and in the fields, as well as fears about relations between boys and girls); as a result, literacy rates among men and women differ greatly. Finish distributing the readings, give the students time to read the story silently, and then, in small groups, have them outline what the story reveals about the formal education system in Africa.

5. DE-BRIEF

Have the students report their findings from the story, and list them on newsprint *[No respect for the students; many had finished school, but had no work; there was a common entrance exam for secondary school; the entrance exam as well as schools cost money, which most parents did not have; the kids were whipped and bullied at school; the school curriculum did not teach what young people needed to know to make a living; memorization, not application was important, etc.]*.

As students present their findings, comment on them based on the following points about the formal educational system that was established in Africa with colonization:

- Today, formal education in Africa exists much as it did when the European colonists brought the system to Africa. During the colonial period, this formal education was used as a tool for spreading the Christian religion. As well, it was used to further the colonial interest in Africa; that is, it promoted inequality and competition (by charging for education and limiting the number of secondary schools), and trained people just enough to be able to work in service positions, not to excel.
- Through the formal educational system of the colonial period, there was also a conscious attempt to educate Africans away from their culture. The students were taught European customs, songs, and teaching was done in European languages (if you speak another language, make this point in that language - it really gives the students a sense of how it must feel to be taught in a language other than their native tongue).
- The purpose in getting a formal education in Africa during the colonial period

FOLLOW-UP ACTIVITIES

- Have groups of students do history reports in which they compare and contrast the traditional, colonial, and, or post-independence educational systems of different African countries.
- Set up an information exchange program with a Peace Corps volunteer or African school or community (See LITERATURE REFERENCES AND RESOURCES for possible programs).
- Have students imagine that they are studying for a year in an African country. Ask them to write a letter to a friend in the U.S., comparing the educational system in Africa with that of the U.S.

ALTERNATIVE PROCESS

- Assign the reading as homework to be completed prior to class.

6.5 "THE GENTLEMEN OF THE JUNGLE"

The Colonization of Africa

SUGGESTED GRADE LEVELS 7 - 12

PURPOSE

To gain a sense of the relationships established between the Europeans and Africans as a result of Europe's colonization of Africa.

OBJECTIVES

Students will be able to:

- describe the characters of the story and how they interact with each other.
- explain how the relationship between the characters of the story is a parody of the actual relationship between European settlers and Africans during the colonialism.
- discuss the impacts of European colonization on Africans.

TIME REQUIRED 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a geography unit on Africa
- as a way to present the theme of colonization in a history class
- as a hook-in to a study on comparative governments
- as a presentation in a drama class

STUDENT PREPARATION

- an introduction to Africa, i.e., images, physical geography, ancient kingdoms and empires, colonization.

MATERIALS NEEDED

- A copy of "The Gentlemen of the Jungle" (see References & Resources)
- paper
- pens or pencils

PROCESS

1. After having presented your students with introductory information about Africa, including the general theme of colonization, assign the reading of the story for homework the day before the class discussion about it. Explain that it is a tale told among the Kikuyu people of Kenya.

2. Choose students to read the roles of Mr. Elephant, Mr. Lion, The Commission, The Man, and Narrator in a class reading of "The Gentlemen of the Jungle."

3. DE-BRIEF

Through a discussion, guide your students towards the understanding of the general impacts of colonization in Africa and, more specifically, the relationships that developed between the European colonizers and Africans. The following kinds of questions and points may be helpful:

- What was the incident that caused the argument between the elephant and the man? [*The elephant's occupation of the man's hut*].
- What was the elephant's argument? [*That he had occupied his friend's, the man's, hut in order to prevent it from being lost in a hurricane*].
- What was the man's argument? [*That he had been trying to do his friend, the elephant, a favor, but the elephant then took advantage of him and displaced him from his home*].
- How was the Commission of Enquiry formed? [*The elephant, along with the other ministers, appointed the Commission*].
- Who supported the elephant? [*The entire Commission*]. How? [*They let him speak first, and listened to what he had to say*]. Why? [*They were friends, all animals, all representing the same interests, etc.*].
- Who supported the man? [*No one*]. How?/How not? [*They only let him speak after they were already convinced by the elephant's story, and even then, they did not listen to the man's side of the story*]. Why?/Why not? [*The man was different and believed to be inferior by the animals, etc.*].
- What kind of language is used in the story, and why? [*The language used is very formal British English, which reflects the British rule in some parts of Africa, as well as a high social status among the animals. One can also imagine a condescending tone of voice being used by the animals when they talk to the man*].

- What does this language reveal about the relationship between the man and "the gentlemen of the jungle?" *[The relationship is one of unequal social status].*

- Why do you think this kind of relationship existed? *[Perhaps the animals had more access to resources because they were more powerful. In order to continue having access to these resources, the animals needed to support and defend each other's interests, and make life difficult for the man. In this way, great social distance was maintained between the animals and the man, etc.].*

- Do you think the man was justified in the actions he took at the end of the story? Why/Why not? (Encourage debate on this question).

4. Conclude the discussion with the following questions and points about the impacts of colonialism on Africa:

- From what you remember about the colonization of sub-Saharan Africa, why were Europeans interested in this area: *[For its raw materials and overseas markets for Europe's manufactured goods (especially with the industrial expansion in the late 1800's), human labor, and to spread Christianity and European practices and values].*

- How did the colonization of sub-Saharan Africa by Europeans get started? *[The beginning of European colonization of sub-Saharan Africa was marked by the 1884-1885 Berlin Conference. Representatives of major European powers - Britain, France, Italy, Germany, Portugal, Belgium, and Spain - gathered to discuss the partitioning and colonization of Africa. There was no African representation at the conference].*

- The story we read and discussed is meant to reflect the relationship that was established between the European colonizers and the Kikuyu people of Kenya. As the story shows, with colonization Africans lost social and political power. Their educational and agricultural systems were also changed. Africans were even forced to change their names, languages, and religious and cultural practices.

- European dominance over Africans through colonization caused many bitter struggles over rights to land, resources, education, and political power. Although most of the African countries have become independent from their European colonizers, some of these deeply-rooted conflicts still exist.

5. Ask each student to write a short paragraph that explains what they understand by the man's words, "Peace is costly, but it's worth the expense," as it relates to this story and the colonization of sub-Saharan Africa by Europeans.

FOLLOW-UP ACTIVITIES

- Have students create a mini-drama based on the script of the story.
- Let students develop their own play based on the general theme of "The Gentlemen of the Jungle," but related to other conflicts that arose due to the impacts of European colonization of sub-Saharan Africa.
- Study the history and culture of the Kikuyu people in more depth.
- Trace the roots and history behind a few current events or issues in Africa.
- Have your students do a comparative study of the colonization of Africa with that of Latin America.

6.6. "BLIND MAN AND LAME MAN" Why does Hunger Exist?

SUGGESTED GRADE LEVELS 8 - 12

PURPOSE

To know why hunger exists throughout the world.

OBJECTIVES

Students will be able to:

- explain why the blind man and lame man in the folk tale experienced hunger.
- explain the role that access to resources plays in hunger.
- identify reasons that people lack access to food.
- discuss the important role that local, national and international policies play in maldistribution of income and hunger.

TIME REQUIRED 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a follow-up activity to "Tracing the Coffee Bean" (Lesson 3.2)
- as part of a study on developing countries
- as part of a hunger unit
- as a literature lesson

STUDENT PREPARATION

- an understanding of the elements involved in a food production, distribution and consumption system

MATERIALS NEEDED

- A copy of "Blind Man and Lame Man" (see References & Resources)
- newsprint
- markers
- tape

PROCESS

1. Have your students read the "Blind Man and Lame Man" folk tale.
2. In pairs or small groups, have them discuss and answer the following questions:
 - How did the blind man contribute to the capture and preparation of the monkey? *[He used his physical strength to allow the two to get near the monkey].*
 - How did the lame man contribute to the capture and preparation of the monkey? *[He saw the monkey, shot it, and cooked it].*
 - Could either man have captured the monkey and prepared the stew alone? *[Perhaps]. Why/Why not? [Because each one lacked certain resources, i.e., eyesight or mobility, it would have been more difficult, although not necessarily impossible for either one to capture and prepare the monkey himself].*
 - In your opinion, which of the two men was right in his argument of why he deserved to have more of the monkey stew than the other?
 - What factors, other than the famine in the area, led to the men's hunger? *[Each of the men lacked the ability to gain reasonable access to food that was locally available to others].*

3. DE-BRIEF

Go over the students' responses, and quickly have the students review/summarize the elements of a food production, distribution and consumption system, and how the system can break down (see lesson 3.2). Outline their points on newsprint.

Drawing from their description, highlight the importance that access to an available food supply plays in the question of hunger through the following questions and points:

- Historically, hunger has been attributed to food scarcity caused by drought, crop failure, or some human intervention.
- On a global level, a paradoxical situation has been created in which food surpluses exist where severe hunger also does. How can this be explained? *[The ability of a country to feed its citizens is not as much a function of food production as it is one of distribution of and access to food].*
- The significant role that poverty plays in access to food, and the question of world hunger is being increasingly recognized. Poor people lack access to the food supply available to others because they either lack the resources to grow or

hunt for their own food, or the income with which to buy it. In the case of the blind man and the lame man, each lacked important capacities which would have made accessing food easier, especially during this time of famine.

4. Give pairs of students just a couple of minutes to brainstorm ideas on why some people lack access to food.

5. DE-BRIEF

List out the students' responses on newsprint and discuss them along with the following points:

- In addition to personal incapacities, natural disasters and crop failure, many political, economic and socio-cultural policies also make access to food especially difficult for the poor. For example:

- National budgeting priorities have not focused on food production but on exportable cash crop production.

- Human development and technical resources, such as education and research, are maldistributed.

- As your model of the food production, distribution and consumption system shows, people use physical, technical and human resources in order to meet their daily nutritional needs. Access to and sustained use of these resources determines whether or not an individual will actually be able to fulfill this need. Accessibility is at many levels.

- How do you think one's access to resources, for example, land, is controlled at a local level? *[In developing countries, control over land at the local level may not lie with the family that uses land for production, but with a local person who has the right of allocation or distribution. With growing populations, land is scarce in many places, and it is divided among family members into small, almost useless plots].*

In developed countries, because of lending practices, ultimate control over land and other resources may lie with local businesses, mortgage companies or banks, leaving local inhabitants powerless to negotiate for the use of land. In places where land has been privatized, institutions and the wealthy have control of both the land and the financial means to obtain access to it.

- Who or what controls access to and use of resources at a national level? *[At the national level, resource allocation is often determined by government policies. The scarcity of valuable resources creates competition for their use in the*

following areas: development and military spending, industrial and agricultural sectors, food and export crops, large and small farms, and rural and urban hungry].

- And, what plays into access to and control of resources at an international level? [At this level, national governments, corporations, and multinationals have all tried to influence the prices on the agricultural commodities they produce. The result has been that developed countries have subsidies in order to produce food, the prices of certain primary commodities have fluctuated greatly, and developing countries have not been able to repay their debts. Consequently, they have not been able to finance future purchases. In short, international trade policies have made it impossible for developing countries to pay for food they must import to meet their people's nutritional needs].

6. Conclude the discussion by asking your class to collectively summarize the many factors involved in the question of why hunger exists.

FOLLOW-UP ACTIVITIES

- Participate in World Food Day activities.
- Study what different organizations are doing to address the problem of world hunger.
- Study the current situation of hunger in a particular country or region, examining the historical roots and causes.

6.7. REFERENCES AND RESOURCES

Cherry, Lynne. 1990. The Great Kapok Tree. San Diego: Harcourt, Brace and Jovanovich. Children's Book Press, 1461 Ninth Avenue, San Francisco, CA 94122. Tel: (510) 655-3395.

Diakiw, Jerry Y. 1990. "Children's Literature and Global Education: Understanding the Developing World." The Reading Teacher, 43 (4).

Duodu, Cameron. 1974. "The Disillusioned Gab Boys," in Zabala, Pam and Chris Rossell (eds.). African Writing. A Thematic Anthology. London: Collins. This article can also be found in Duodu, Cameron, The Gab Boys, Andre Deutch Ltd., publishers.

Kenyatta, Jomo. 1958. "The Gentlemen of the Jungle." In Peggy Rutherford (ed.) African Voices. New York: Vanguard Press. This article can also be found in Kenyatta, Jomo, Facing Mount Kenya, Secker & Warburg Ltd., publishers.

National Geographic Society. 1991. Directions in Geography: A Guide for Teachers. Washington, D.C.: Author.

WORLD WISE SCHOOLS - Teachers in elementary and secondary schools in the U.S. who are interested in teaching their students more about the realities of another country can do so through the Peace Corps World Wise Schools program. The program encourages an exchange of information - letters, photos, tapes, art projects, etc. - between the participating school classes and a Peace Corps volunteer, and provides special materials and suggested activities several times a year. All of the activities and materials foster increased cross-cultural awareness through a better understanding of the historical, environmental, and political contexts in which another culture operates. Contact: Shirley Puchalski, World Wise Schools, U.S. Peace Corps. 1990 K Street NW, Washington DC 20526; Telephone (toll-free) 1-800-424-8580.

Zabala, Pam and Chris Rossell. 1974. "Blind Man and Lame Man - a Folk Tale," in Zabala, Pam and Chris Rossell (eds.) African Writing: A Thematic Anthology. London and Glasgow: Collins. This article was extracted from Jablow, Alta. 1961. Yes and No: The Intimate Folklore of Africa, New York: Horizon Press.

CHAPTER 7

FOODS FROM AROUND THE WORLD

7.1. BRIGADEIROS (BRAZILIAN CANDY)

SUGGESTED GRADE LEVELS 5 - 12

PURPOSE

To learn about Brazilian birthday parties and how to make a candy typically served at them.

OBJECTIVES

Students will be able to:

- describe a typical Brazilian birthday party.
- sing "Happy Birthday" in Portuguese.
- prepare brigadeiros.

TIME REQUIRED 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a geography unit on Latin America
- as an activity in a foreign language class
- as a way of internationalizing a home economics curriculum
- as a lesson in a social studies class

STUDENT PREPARATION

- familiarity with the use of a kitchen
- maturity to be able to work carefully in groups to boil a sticky, sugary mixture

MATERIALS NEEDED (for each group)

- recipe for brigadeiros
- ingredients listed in Recipe
- a can opener
- a saucepan
- a wooden spoon
- stove or hot plate
- measuring cups and measuring spoons
- a shallow bowl or plate
- several pairs of teaspoon-size eating spoons

PROCESS

1. Introduce the activity as appropriate for your curriculum.
2. Ask your students to describe what birthday parties are like in the U.S. The following kinds of questions may be useful:
 - When you have a birthday party, who do you invite?
 - What kinds of things do you do at birthday parties in the U.S.?
 - What do you typically eat?
 - Are gifts exchanged? Who receives them?
3. Compare the students' descriptions with typical Brazilian birthday parties. Include the following points:
 - In Brazil, birthdays are important family events. One's birthday is always recognized, and when people have enough money, a party is given.
 - At Brazilian birthday parties, a lot of people are usually invited. This is because the party is not only for friends of the birthday person, but also for that person's entire family. Since extended families are still commonly found in Brazil, grandparents, aunts, uncles and cousins may all live together or near each other, and participate together in family celebrations.
 - There is always music and dancing at Brazilian birthday parties. Guests of all ages enjoy the rhythm of samba, forro, or other types of Brazilian music.
 - The food served at Brazilian birthday parties usually includes salty snacks such as crackers, olives and sandwiches, a large birthday cake, drinks, and brigadeiros - a chocolate candy, which you are going to make today.
 - Gifts are sometimes, but not always exchanged at birthday parties; the party is, in itself, a gift to everybody at the celebration. As well, by making, or having a local baker prepare a very large cake, the host is able to send some cake home with his or her guests for their friends and family to enjoy.
4. Have groups of students prepare the brigadeiros according to the recipe.
5. Enjoy the brigadeiros while singing "Happy Birthday" in Portuguese, the official Brazilian language:

(To be sung to the tune of "Happy Birthday")

PARA BENS PRA VOCÊ,
NESTA DATA QUERIDA!
MUITAS FELICIDADES,
MUITOS ANOS DE VIDA!

(Congratulations to you,
On this special day!)
(Much happiness,
Many years of life!)

FOLLOW-UP ACTIVITIES

- Study about birthday celebrations throughout Latin America or the world.
- Have students do research on other Brazilian holidays and how they are celebrated.
- Collect several Brazilian recipes and prepare a Brazilian meal.

RECIPE FOR BRIGADEIROS (BRAZILIAN CANDY)

(To make about 24 teaspoon-sized candies)

1 can sweetened condensed milk
1 cup milk
2 heaping tsp cocoa
2 jars chocolate sprinkles, or
shredded coconut, cocoa, colored sprinkles to roll the candy in

Place the sprinkles in a shallow bowl or plate. Set aside.

Cut a large piece of waxed paper and have it ready for later use.

Put the sweetened condensed milk, milk, and cocoa in a saucepan. Bring to a boil over medium-high heat, stirring constantly with a wooden spoon. Keep cooking and stirring the mixture until it thickens enough that it easily comes away from the sides and bottom of the saucepan, and starts to hold together in the middle of the pan (about the consistency of pudding).

Remove the pan from the heat, and continue stirring as the mixture cools. When you see that a teaspoonful of the mixture can hold its shape when placed on wax paper, start dropping it into the bowl or plate of sprinkles with two teaspoons. Roll the candy in the sprinkles to form balls and cover them. The candy may still be hot, so be careful. Place on waxed paper to finish cooling.

7.2. AREPAS (COLOMBIAN CORN CAKES)

SUGGESTED GRADE LEVELS K - 12

PURPOSE

To learn about and taste an important staple food from Colombia.

OBJECTIVES

Students will be able to:

- define staple foods
- explain how arepas are prepared and used as a staple food in various regions of Colombia.
- prepare arepas.

TIME REQUIRED 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a way of globalizing a home economics class
- as part of a geography unit on Colombia or Latin America
- as a lesson on nutrition in developing countries

MATERIALS NEEDED (per group)

- recipe for arepas
- ingredients listed in Recipe
- MAP #6.005 - COLOMBIA
- a large plate
- a can opener
- a large mixing bowl
- a meat grinder
- a cheese grater
- measuring cups
- a stove or hot plate and skillet, or electric griddle

PROCESS

1. Introduce the activity as appropriate for your class.
2. Introduce the concept of staple foods through the following questions and points:
 - What are the foods that you most commonly eat?
 - Are there foods that you eat on a daily basis? If so, what are they?
 - Would it seem strange to you not to eat a particular food on a daily basis?
 - In the U.S., a variety of foods is available to us, so we have a large variety of foods in our diets. For many people in the U.S., there is not just one food that makes up an important part of one's daily diet.
 - A food that does form a significant part of one's daily diet is called a staple food. Staple foods of different regions often include grains and legumes that are easily grown in those regions. For example, in many parts of Asia, rice grows abundantly and is the primary staple food. Other examples of staple foods include lentils, beans, barley, wheat, potatoes, and corn.
3. Introduce your students to arepas through the following points:
 - In Colombia, the staple foods that form the base of the people's diet include rice, beans or other legumes, tubers (root vegetables like potatoes and cassava), and corn. Although everybody eats these foods, they are especially important to those who do not have much money to spend on food, because, eaten together, they form a nutritional, inexpensive meal.
 - Arepas are a sort of corn cake made from either ground shelled corn or corn flour. They are prepared differently in different parts of the country, and are used slightly differently in the diet, depending on the region (Have students locate the following places on MAP #6.005 - COLOMBIA):
 - In Cundinamarca, arepas are made with just corn flour and water, and are eaten at every meal with beans.
 - In the rural areas of Santander, arepas are made with ground shelled corn, salt and water. These are served for breakfast with cheese, or with potato broth that has an egg cooked in it.
 - In Bogota, as with other large Colombian cities, arepas are made with corn flour, salt and water, and are sold on street corners with either

butter, cheese, or salami. Some vendors also sell arepas that are sweetened with sugar.

- Finally, along the coast, it is common to find arepas cooked with an egg in the middle.

4. In groups, let your students prepare some arepas with cheese, according to the recipe.

FOLLOW-UP ACTIVITIES

- Research the eating customs of other countries, and compare the staple foods eaten in each. Examine the geography, agricultural systems, and culture of each place to see how they might influence what foods are staple ones.

RECIPE FOR AREPAS (COLOMBIAN CORN CAKES)

(To make approximately 10 four-inch round arepas)

2 small cans hominy
1-1 1/2 cups corn flour
1-1 1/2 cups monterey jack cheese, grated
a small amount of water
a small amount of oil or margarine for cooking

Grind the hominy in a meat grinder onto a large plate. Place the ground hominy in a large mixing bowl. Add enough corn flour so that the mixture can be shaped into balls with your hands. Grate the cheese and mix it into the arepa dough. If needed, add a little water so that the dough can be easily formed into a ball. With your hands, divide the dough into about 1/4 cup balls, and flatten them to make 1/3" thick rounds.

Cook over medium heat in a pan greased with a small amount of oil or margarine until arepas start to brown. Turn, and brown on other side. Serve warm.

7.3. MAANDAZI (KENYAN DONUTS)

SUGGESTED GRADE LEVELS 5 - 12

PURPOSE

To learn about a snack food commonly eaten in Kenya.

OBJECTIVES

Students will be able to:

- compare their own eating customs with those of Kenyans.
- explain what maandazi is, and what place it has in the Kenyan diet.
- prepare maandazi.

TIME REQUIRED 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as a way of internationalizing a home economics curriculum
- as part of a geography unit on Africa
- as an activity in a social studies class
- as a pre-writing or pre-speech activity

STUDENT PREPARATION

- familiarity with the use of a kitchen
- maturity to be able to work carefully in groups with hot oil

MATERIALS NEEDED (per group)

- recipe for maandazi
- ingredients listed in recipe
- a sieve
- measuring cups
- measuring spoons
- a large mixing bowl
- a mixing spoon
- a kitchen towel

- a deep fryer or large, heavy saucepan
- a stove or hot plate
- a rolling pin
- a ruler and pastry wheel or sharp knife
- a slotted spoon
- paper towels

PROCESS

1. Introduce the activity as appropriate for your particular class.
2. Ask students to tell you about their eating customs through the following kinds of questions:
 - How many of you eat breakfast?
 - What do you eat?
 - At what time do you normally eat breakfast? Lunch? Snacks?
 - Do you think these eating customs are typical for the U.S.?
3. Compare these customs with typical eating customs in Kenya. Include the following points:
 - Maandazi are typically eaten during the morning tea break - 10:00 a.m.- similar to the coffee break in the U.S.
4. Have groups of students prepare the maandazi according to the recipe.

FOLLOW-UP ACTIVITIES

- Have students prepare a written or oral presentation that involves giving directions for something they know how to make.
- Prepare an African meal.
- Prepare other snack foods from around the world and sell them at an international food fair that your class or school sponsors.

RECIPE FOR MAANDAZI (Kenyan Donuts)

(To make approximately 16 donuts of about 3-by-3 inches)

2 1/2 cups of all-purpose flour
1 tsp baking powder
2 Tbsp sugar
1/4 tsp salt
1 egg, slightly beaten
3/4 cup water
vegetable oil for deep frying
cinnamon sugar or jam (optional)

Sift slightly more than 2 cups of the flour and the baking powder, sugar and salt together into a deep bowl. Make a well in the center and into it pour the egg and water. Stir. When the ingredients are well mixed, roll the dough out on to a surface dusted with the remaining flour, and knead with your hands until the dough is firm enough to be gathered into a compact but somewhat soft ball. If the dough is sticky, add up to 1/4 cup more flour, 1 tbsp at a time. Cover with a dampened kitchen towel and let the dough rest for approximately 30 minutes.

Pour oil into a deep fryer or large, heavy saucepan to a depth of 2 to 3 inches and heat the oil until it reaches a temperature of 350 degrees.

On a lightly floured surface, roll the dough out into a rough rectangle 1/2 inch thick. With a sharp knife, cut the dough into 3-inch squares. Gather the scraps of dough into a ball, roll them out again, and cut as many more squares as possible.

Fry as many maandazi as your pan can accommodate, turning them occasionally with a slotted spoon, for about 4 minutes, or until they are crisp and richly colored on all sides. As they brown, transfer them to the lined baking sheet to keep warm in the oven. Serve warm, with cinnamon sugar or jam, if desired.

7.4. NKHOWE (MALAWIAN MASHED CORN AND BEANS)

SUGGESTED GRADE LEVELS 4 - 12

PURPOSE

To compare grain processing techniques in Africa and the U.S. by learning about and preparing a staple Malawian food.

OBJECTIVES

Students will be able to:

- identify how grain is harvested, stored and processed in Africa and in the U.S.
- prepare nkhowe

TIME REQUIRED 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a geography unit on Africa
- as a way of internationalizing an agriculture curriculum
- as an international activity in a home economics class
- as a science lesson on nutrition

STUDENT PREPARATION

- maturity to be able to work safely in groups with a hot mixture

MATERIALS NEEDED

- Recipe for Nkhowe
- ingredients listed in recipe
- a can opener
- a large saucepan
- a potato masher
- measuring cups
- a stove or hot plate
- a world map
- a mortar and pestle/potato masher

PROCESS

1. Introduce activity as appropriate for your curriculum.
2. Through the following kinds of questions and points, guide your students in a discussion comparing grain processing in the U.S. and Africa:
 - What are some of the grains that grow in the U.S.? [*Wheat, corn, rice, barley, etc.*].
 - How are these grains harvested? Take corn, for example. [*With combines or machines that cut the corn and separate the ears from the rest of the plant*].
 - How, then, is the corn processed and stored? [*It may be taken by truck to markets for immediate sale and use, or to factories, where machines take the kernels off the cob, and the corn is either frozen or canned, or dried and then ground into flour by machines*].
 - In many parts of Africa, as in Malawi (locate on a world map), corn is an important staple crop or food; that is, something that is eaten everyday as a main food source in the people's diet.
 - How is corn harvested and processed in Africa? (See lesson 5.3 - AGRICULTURE AND HUNGER IN ZIMBABWE) [*The way a lot of corn is harvested, processed and stored in Africa is different from the methods used in the U.S. In addition to large farms which produce crops for exportation (to send to other countries), in Africa, many people have small farms which they use to grow food for their families and for local market sale, when there is surplus. Instead of using big machines to plant, fertilize and harvest the corn, all this work is done by hand, or perhaps with the help of ox-drawn implements. Once the corn is harvested, it may be dried in the sun and then pounded into flour with a mortar and pestle (hard work!). Then it is stored in small, clay grain stores close to the home. Or, the kernels from the fresh corn may be removed by hand, and the corn pounded for immediate use*].
3. If you have a mortar and pestle, let your students try to grind corn kernels or peanuts with it.
4. Explain that the nkhowe that the students are going to make is typically prepared with ground corn that is different from the sweet corn that we normally eat in the U.S. When ground, the corn used for nkhowe sticks together better than ground sweet corn does. A kind of corn available in the U.S. that can be used for nkhowe is hominy. Hominy is corn (not sweet corn) which has had the outer covering removed.
5. Let groups of students prepare the nkhowe.

FOLLOW-UP ACTIVITIES

- Learn about and prepare staple foods from other countries of Africa.
- Invite a university student or local resident who is either from Africa or has had experience in Africa to visit your class.
- Show a video about agriculture in Africa.
- Visit a local farm and learn about how crops in your area are harvested and processed.

RECIPE FOR NKHOWE (MALAWIAN MASHED CORN AND BEANS)

(To make 5-6 servings)

2 tins of hominy or pounded corn grain
2 cups cooked red or pinto beans
1/4 cup of water
A pinch of salt (optional)

Drain the hominy and boil it together with the cooked beans in the 1/4 cup of water until there is very little water. Mash the hominy and the beans. Add salt.

If you are using pounded corn grain, cook the corn grain until it is soft and add the cooked beans. Mash them together. Serve warm and eat with your hands.

7.5. CHICKEN JELOFF RICE (NIGERIAN RICE DISH)

SUGGESTED GRADE LEVEL 5 - 12

PURPOSE

To learn about a food typically eaten in Nigeria

OBJECTIVES

Students will be able to:

- locate Nigeria on a world map.
- describe the kinds of foods that are typically eaten in Nigeria.
- prepare chicken jelloff rice.

TIME REQUIRED 60 - 70 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a social studies unit on Africa
- as a way of globalizing the home economics curriculum
- as an activity in a world geography class

STUDENT PREPARATION

- familiarity with general cooking procedures
- ability to safely handle a sharp knife

MATERIALS NEEDED

- recipe for chicken jelloff rice
- ingredients listed in recipe
- a can opener
- a large skillet
- a large, cooking pan with lid
- measuring cups and measuring spoons
- a wooden cooking spoon
- a sharp knife
- a stove or hot plate

PROCESS

1. Introduce activity as appropriate for your curriculum.
2. Lead your students in a brief discussion about eating customs in Nigeria through the following questions and points:
 - Who can locate Nigeria on the world map?
 - How close is it to the Equator?
 - Given the proximity of Nigeria to the Equator, what kind of climate do you imagine Nigeria to have? [*Tropical, hot, humid, etc.*].
 - What kinds of crops would grow well in that climate? [*Oranges, mangoes, papaya, guava, melons, tomatoes, perhaps rice, etc.*].
 - Explain that Nigerians include these foods in their diets because they are easily accessible. Those that live in coastal areas also eat a lot of fish. Finally, some Nigerian food is spicy. The chicken jelloff rice that you are going to make today uses three important spices: curry, thyme and cayenne pepper. You can make the rice with just a little bit of these spices so it has a mild flavor, or you can add more of these condiments to make a zesty dish.
3. Divide your students into groups, and assist them in preparing chicken jelloff rice, according to the recipe.

FOLLOW-UP ACTIVITIES

- Show a film about cultural aspects of Nigeria.
- Learn about and prepare African dishes from other countries. Host an African dinner.
- Have students do some research to find out how many countries rely on rice as an important staple food.
- Check out some international cooking books, and see how many different and rice dishes you can find. Discuss why that might be so.

RECIPE FOR CHICKEN JELOFF RICE (NIGERIAN RICE DISH)

(To make 6-8 servings)

2 1/2 cups of rice
1 chicken (raw)
1 whole large onion finely chopped
small amount of vegetable oil for frying
1 15-oz can of tomato sauce
3 chicken-flavored bouillon cubes
salt to taste
1/4 tsp cayenne pepper (or to taste)
1/2 tsp curry powder (or to taste)
1 tbsp thyme
6 - 8 cups water

Boil the water, chicken, half the onion, some salt, bouillon cubes and 1/2 of the thyme for about 20 minutes. De-bone the chicken and reserve the liquid.

Fry the remaining half onion, salt and spices in the oil. Add the tomato sauce and simmer for about 10 minutes.

Add the chicken to the tomato mixture. Add 4 cups of the broth from the boiled chicken. Bring to a boil and add the rice.

Cover and cook over low heat until rice is tender.

7.6. HANG GEEN BENG (CHINESE ALMOND COOKIES)

SUGGESTED GRADE LEVELS 2 - 12

PURPOSE

To be introduced to Chinese eating customs.

OBJECTIVES

Students will be able to:

- explain the importance that pork plays in the Chinese diet.
- prepare hang geen beng.

TIME REQUIRED 2 1/2 hours, or two 45-minute class periods that fall on different days.

PLACEMENT WITHIN THE CURRICULUM

- as a way of globalizing the home economics curriculum
- as a social studies activity
- as part of a geography unit on China or Asia
- as a hook-in to an English writing assignment

STUDENT PREPARATION

- familiarity with baking practices

MATERIALS NEEDED

- recipe for hang geen beng
- ingredients listed in recipe
- a mixing bowl and two small bowls
- a sifter
- measuring cups and measuring spoons
- a pastry blender
- an egg beater or wire whisk
- cooking spoons
- baking sheets
- a cup
- a pastry brush
- a spatula or pancake turner
- a wire rack

PROCESS

1. Introduce the activity as appropriate for your curriculum
2. Provide your students with some background to eating practices in China through the following questions and points:
 - What kinds of animals are commonly raised in the United States for food? [cows and goats for milk products, cattle, pigs, chicken and fish for meat, chicken for eggs, etc.].
 - In China, very few cattle are raised, so dairy products, such as milk, cheese, and butter are scarce.
 - In China, many people raise pigs. In fact, when people say "meat" in China, they mean pork.
 - In Chinese baking, lard or pork fat is used instead of butter.
 - The cookies you are going to make call for lard. You can use vegetable shortening when you make them, but they will taste a little different.
3. Prepare the cookies according to the recipe.

FOLLOW-UP ACTIVITIES

- Prepare steamed rice and learn how to eat it with chopsticks.
- Learn about and celebrate the Chinese New Year.
- Study about the different agricultural practices in different parts of China, and how those affect local diets.

**RECIPE FOR HANG GEEN BENG
(CHINESE ALMOND COOKIES)**

(To make about 4 dozen cookies)

2 1/2 cups flour
1/tsp salt
1 tsp baking powder
1 cup sugar
1 cup lard or vegetable shortening
1 egg
1 Tbsp almond extract
1 Tbsp cold water
4 dozen whole blanched almonds
1 egg yolk
1 Tbsp water

Sift flour, salt, baking powder and sugar into a bowl. Cut in the lard or vegetable shortening with a pastry blender, or rub the mixture between your fingers until it is crumbly.

In a small bowl, beat the egg lightly with an egg beater or wire whisk. Add the almond extract. Add this egg mixture to the flour mixture and toss gently. Add the Tbsp or cold water and mix quickly with your hands to form a firm dough. Shape the dough into a ball and chill in refrigerator for 1 hour.

Preheat oven to 350. Grease baking sheets.

Remove dough from the refrigerator and shape it into 1 1/2-inch balls by rolling pieces of dough between the palms of your hands. Place the balls on baking sheets and flatten them gently with your hands. Press an almond into the center of each cookie.

Separate an egg. Put the white in a cup and save for another use. Put the yolk in a small bowl and mix it with 1 Tbsp of water. Brush some of this mixture over each cookie, using a pastry brush.

Bake cookies for about 12 minutes or until lightly browned. Remove from oven and baking sheets. Cool on a wire rack.

7.7. THAI CURRIED CHICKEN FRIED RICE

SUGGESTED GRADE LEVELS 6 - 12

PURPOSE

To understand how refrigeration influences eating customs by learning about and preparing a Thai dish.

OBJECTIVES

Students will be able to:

- explain the terms, wok, sticky rice, and curry.
- discuss the role that refrigeration plays in food storage and preparation.
- make Thai Curried Chicken Fried Rice.

TIME REQUIRED 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as part of a geography unit on Thailand or Asia
- as a way of internationalizing a home economics class
- as a social studies activity

STUDENT PREPARATION

- familiarity with basic cooking practices
- ability to safely use a sharp knife

MATERIALS NEEDED

- recipe for Thai curried chicken fried rice
- ingredients listed in recipe
- measuring cups and measuring spoons
- a sharp knife
- frying pan or wok
- a surface heat source
- a cooking spoon
- a world map

PROCESS

1. Introduce the activity as appropriate for your class.
2. Discuss with your students the role that refrigeration plays in food storage and preparation through the following kinds of questions and points:
 - How many of you help with the grocery shopping in your family?
 - How often does your family buy groceries?
 - What do you do if the food you buy is too much for you to eat all at one time? *[Store it in the refrigerator, freezer, on shelves, etc.]*.
 - When people in your family cook, do they prepare just enough food for one meal, or do they prepare enough for two or more meals?
 - If you prepare large amounts of food, what do you do with the leftovers? *[Freeze them, put them in the refrigerator, eat them the next day, etc.]*.
 - What would you do if you did not have refrigeration?
 - In many places of the world, people have minimal or no refrigeration. Consequently, they go shopping for food every day, buying only what they will use for that day's meals. In cooking foods that spoil easily without refrigeration, they prepare only that which will be eaten in one meal or one day, and learn to be creative in making leftovers into tasty, nutritional meals.
3. Explain to your students that they are going to prepare a Thai dish that can be made using leftover rice. Have students locate Thailand on a world map. Brief them on the special ingredients and utensils used in preparing the rice recipe:
 - Rice is an important staple food for Thai people as well as people in many other countries of the world. There are also many varieties of rice. In Thailand, although this recipe does not call for it, a commonly eaten rice is called sticky rice. This kind of rice holds together very well; Thais eat it by forming the rice into little balls and then dipping them in spicy meat or vegetable sauces.
 - Fish sauce is used in the preparation of Thai food in some parts of the country. Can you guess why? *[Part of Thailand is bordered by the Indian Ocean and the South China Sea, so fish and fish products are easily available and commonly used in cooking]*.

- Curry is a spice used in many parts of Asia and Africa. There are many different kinds of curry, ranging from yellow to red in color and mild to hot in spiciness.

- A wok is a large cooking pan used in China and other parts of Asia. One of its primary features is that, while some food is cooking in the middle of the wok, already cooked food can be pushed up and kept warm around the outer edges of the wok.

4. Prepare the Thai Curried Chicken Fried Rice as directed in the recipe.

FOLLOW-UP ACTIVITIES

- Take your students to a Asian or international store to learn about other Thai and Asian products and their uses; try out different kinds of curry in your rice dish.

- Have your students conduct research and prepare displays depicting other aspects of Thai culture. For example, medicinal practices, dress, music, dance, etc.

RECIPE FOR THAI CURRIED CHICKEN FRIED RICE

(To feed 4 people)

2 Tbsp oil
2 garlic cloves
2 tsp curry powder
1 boneless chicken breast half
2 1/2 cups cooked rice
1 Tbsp soy sauce
1 Tbsp fish sauce
1/4 tsp sugar

Cut the chicken breast into thin slices and set aside.

Heat the oil in a frying pan or wok.

As the oil is heating, chop the garlic finely. Brown it in the hot oil.

Stir in the curry powder and chicken, and cook until the chicken turns white.

Add the remaining ingredients and cook until the rice is heated.

CHAPTER 8
GLOBAL ART

8.1. YARN COLLAGES (LATIN AMERICA)

SUGGESTED GRADE LEVELS K - 12

PURPOSE

To learn about a typical art form practiced in Latin America.

OBJECTIVES

Students will be able to:

- describe the different ways that yarn collages are made.
- make a yarn collage.

TIME REQUIRED 20 minutes to a few hours, depending on design and technique

PLACEMENT WITHIN THE CURRICULUM

- as a way of globalizing the art curriculum
- as an activity in a geography or social studies unit on Latin America

MATERIALS NEEDED

- cardboard, poster board or burlap
- pencils
- variety of colored yarn
- scissors
- white liquid glue

PROCESS

1. Introduce activity as appropriate for your curriculum.
2. Show your students some examples of yarn collages, and provide them with the following background information about the art form:
 - Yarn collages, made with brightly colored pieces of yarn, are found throughout Latin America.

- Sometimes only the main figures will be filled in with colored yarn, leaving the design framed against a poster board, paper or burlap background. In other instances, artists fill in the background with a single color so that the whole picture is colored in.

- In Mexico, artists produce yarn collages on beeswax plates. They melt the beeswax, pour it into a frame, and sketch their design in the semi-soft wax. Then they fill in the sketched lines with brightly colored yarn.

3. Assist your students in making yarn collages using whichever of the following techniques is most appropriate for them:

Very Young Children

- Provide children with paper or poster board with an animal, flower, or other simple figure outlined on it.

- Also give your students 1 to 2-inch pieces of brightly colored yarn.

- Let children glue the yarn pieces as they wish to fill in the outlined figure.

Other Students

- Provide your students with all the materials they need to make a yarn collage.

- Either let them outline a design with pencils, or spread a handful of yarn pieces on a table and let the shapes and colors suggest design arrangements for their collages. In the latter case, encourage your students to experiment with designs by placing yarn in desired patterns on poster board or burlap before gluing.

- Have them glue their completed design in place and embellish them with fluffed-up bits of yarn.

FOLLOW-UP ACTIVITIES

- Experiment with the beeswax technique of making yarn collages.

- Learn about and make other types of Latin American art.

- Visit a Latin American art exhibit.

8.2. CARNIVAL MASKS AND HATS (LATIN AMERICA)

SUGGESTED GRADE LEVELS 2 - 12

PURPOSE

To learn about the significance of carnival and how it is celebrated in Latin America.

OBJECTIVES

Students will be able to:

- explain the historical and current day meaning of carnival.
- describe how carnival is celebrated in Latin America.
- make a carnival hat or mask.

TIME REQUIRED 50 - 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as an activity in a social studies or geography unit on Latin America
- as part of a world history class
- as an art project
- as an activity in a foreign language class

MATERIALS NEEDED

- tag board
- construction paper
- pencils
- glue
- scissors
- sequins
- glitter
- aluminum foil
- yarn
- marking pens
- any other colored or shiny materials for decorating masks and hats
- samba, salsa, merengue, cumbia or other tropical Latin American music (if available)
- pictures, slides or a video showing carnival scenes, if possible
- a world map

PROCESS

1. Introduce the art activity through a discussion that includes the following types of questions and points (As you mention different places around the world, have your students locate them on a world map):

- How many of you have ever heard of carnival? What do you know about it?

- The origin of carnival is uncertain, although it is thought to have been a pre-Christian agricultural rite related to the theme of death and new life in nature. Such an ancient spring festival was recorded in ancient Babylonia, Egypt, Greece, and Rome.

- In Rome, the pagan celebration, Roman Saturnalia, was held in honor of Saturn, who, among other things, was considered the god of sowing. His wife, Ops, was also honored as the goddess of the harvest. During this week-long celebration, people temporarily forgot social rank, exchanged gifts, feasted and drank.

- This and other similar agricultural festivities continued into the early medieval period. Although the Christian church in Rome permitted the festivities to continue, it gave them new, Christian meanings. In the traditional Christian calendar, carnival is a period of feasting and merrymaking just before Lent begins.

- Carnival spread throughout Europe and then to Latin America when it was colonized by the Spanish and Portuguese. In the U.S., the French, Mardi Gras (Fat Tuesday) festival, a one-day carnival, is celebrated, especially in New Orleans.

- Rio de Janeiro, Brazil, is home of perhaps the most famous carnival celebration. Tourists come from all over the world to see the costumes, floats, and intricate choreography as dance schools move to the samba beat in an all-night competitive parade. Participants in the samba schools work all year preparing their floats, costumes, music and dance for the competition. Many poor people from the nearby favelas (slums) spend all their savings on the carnival celebration.

- Apart from the famous Rio parade, throughout Latin America, people celebrate carnival by dressing up and dancing at clubs or at neighborhood street celebrations.

2. If possible, show pictures, slides or a video of carnival scenes from Latin America.

3. Assist your students in making their own carnival masks or hats according to the following directions (if you have tropical music available to you, play it as they work):

- Draw a mask or hat pattern and cut it out of tag board.
- Decorate it with yarn, sequins, glitter, foil, and/or any other materials that you wish to make a colorful, "brilhante" (bright, shiny) costume piece. The more glittery it is, the better!
- Punch two holes near the outer edges of mask or hat, and attach string, yarn, or a rubber band so that it can be tied on to your head.

FOLLOW-UP ACTIVITIES

- Study about carnival in other parts of the world. Hold an international carnival celebration.
- Have students research and make presentation boards about different Latin American holidays and celebrations.
- For a bigger art or home economics project, have students design full carnival costumes and display them.
- Find someone to teach you and your students a few steps of one of the tropical dances typically danced during carnival.

8.3. PATTERNED PRINTS (GLOBAL)

SUGGESTED GRADE LEVELS K - 12

PURPOSE

To be perceptive of patterns and designs and their uses.

OBJECTIVES

Students will be able to:

- explain what patterned prints are and how they are used.
- make patterned prints.

TIME REQUIRED 50 - 60 minutes

PLACEMENT WITHIN THE CURRICULUM

- as an art project
- as part of a geography or social studies unit
- as a home economics activity

MATERIALS NEEDED

- 100% cotton cloth, handkerchiefs or T-shirts
- color-fast fabric paints
- small spray bottles or sponges
- patterned print stencils
- plastic lids
- a razor or exacto knife
- large pieces of paper to absorb paints

PROCESS

1. Introduce the activity as appropriate for your curriculum.
2. Provide your students with the following information about patterned prints:

- Making patterned prints is an art form that is practiced in many parts of the world. Prints are made by stamping cloth or other materials with ink-covered symbols carved from pieces of calabash gourds, potatoes, or leather.

- Patterned prints serve not only to decorate cloth, musical instruments, houses, jewelry and other items, but also to communicate through a language of symbols. Often, these symbols remind people of specific proverbs and ideas which have special meanings in their culture, i.e., peace, sharing, courage.

3. Show students patterned prints that you have made or own, examples from books, or the sketches provided at the end of this lesson. Make the patterned prints according to the following directions:

- Cut out stencils and trace them onto plastic lids. With a razor or exacto knife, cut out plastic stencils (Do this ahead of time if your students are too young to handle sharp tools).

- Place the cloth or T-shirt on top of a large piece of paper that will absorb any extra color. Also place a piece of absorbent paper under layer of cloth you wish to print.

- Put the color-fast fabric paints in either plastic dishes or small spray bottles.

- Place the stencils of your choice on the t-shirt, and, taking either a sponge (dipping the smaller end of the sponge in the paint) or a small spray bottle, dab or spray the open spaces on the cloth until you are satisfied with the coloring. Remove pattern carefully. Repeat in designs desired. Hang to dry.

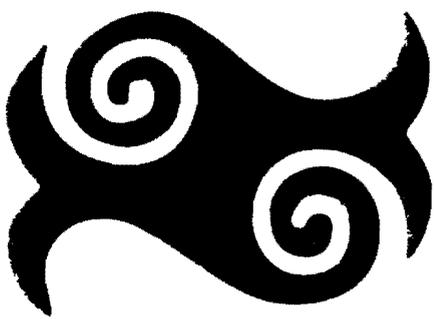
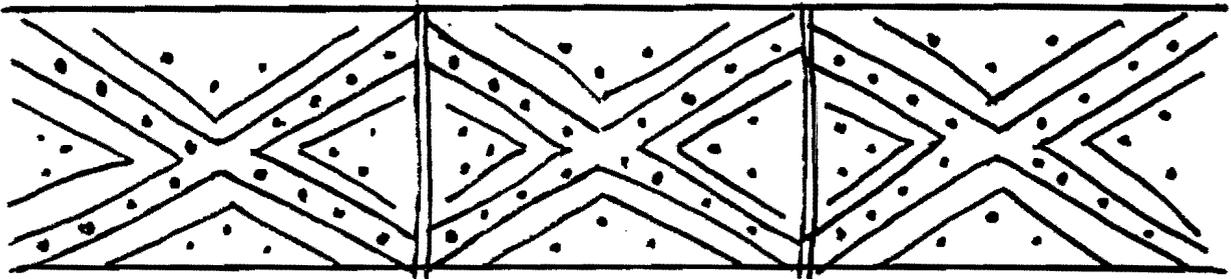
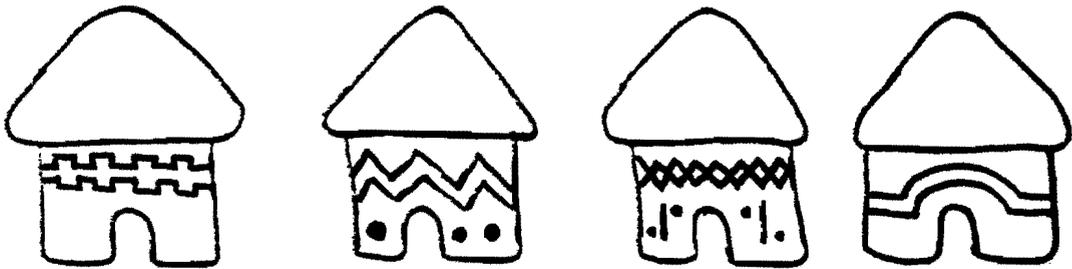
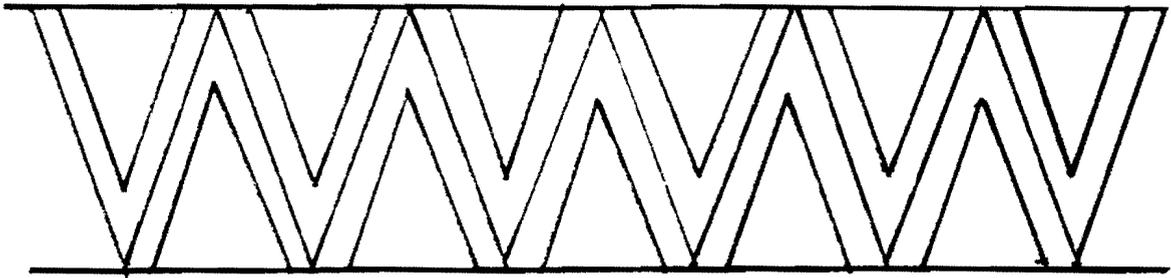
- Once the prints are dry, rinse them in cool, salted water to set the dyes.

FOLLOW-UP ACTIVITIES

- Have your students create their own symbols and make prints using them.
- Have your students do research on and experiment with some of the other forms of cloth printing from around the world.

ALTERNATIVE PROCESS

- Use potatoes for making the stencils.



8.4. DRAGON STREAMERS FOR CHUN JIE (CHINESE SPRING FESTIVAL)

SUGGESTED GRADE LEVELS 1 - 9

To learn how the Chinese New Year is celebrated

OBJECTIVES

Students will be able to:

- describe two different calendar systems.
- explain the significance of dragons in the Chinese culture.
- describe typical Chun Jie festivities.
- make dragon streamers.

TIME REQUIRED 40 - 50 minutes

PLACEMENT WITHIN THE CURRICULUM

- as an art project
- as part of a social studies unit on holidays around the world
- as an activity in a geography class
- as a follow-up activity to a Chinese folk tale or story about Chun Jie
- as a lead-in to a physical education activity (see follow-up activities)

STUDENT PREPARATION

- an introduction to the geography and culture of China

MATERIALS NEEDED

- tag board or stiff paper
- scissors
- glue
- markers or brightly colored paints
- a stapler
- crepe paper streamers or ribbons
- a world map or map of Asia

PROCESS

1. Introduce the activity by telling your students they are going to learn about an important holiday of China. Have students locate China on a map of the world or Asia.

2. With your students, discuss the Chun Jie festivity through the following questions and points:

- On what date do we celebrate the New Year? [*January 1*].

- The way we keep track of days and years is based on the Gregorian calendar. This calendar is a solar calendar that is based on the time it takes the earth to make one complete revolution around the sun - 365 days, 5 hours, 48 minutes, and about 45 seconds. Because these extra minutes eventually add up to another day, an extra day is added to February every four years (creating Leap Year), and whenever a year ending in 00 can be evenly divided by 400 (Milord, 1992). So, for us, the first day of the new year is January 1.

- The Chinese calendar is based on the cycle of the moon, and also has 12 months. The Chinese New Year, however, does not fall on January 1, but in February.

- What kinds of things do we do in the U.S. to celebrate the new year? [*stay up late to welcome in the new year, have parties, make resolutions, etc.*].

- In China, the beginning of the new year is a very important time for families, especially children. Chun Jie, or Spring Festival takes place at the beginning of the Chinese new year. Days before the celebration, children help to clean and paint their homes. On New Year's Eve, the whole extended family (including aunts, uncles, grandparents, cousins, etc.) shares a meal while seated at a round table. Each food eaten at this meal is symbolic of a particular wish for the new year, such as good health, prosperity or fertility. On the next day, everybody dresses up in their best clothes, and children are given money and treats. The festivities, which include fireworks and parades, continue for two weeks.

- How many of you have ever been to a parade?

- What was the occasion for the parade?

- What kinds of things did you see at the parade?

- In China, dragons are very important. It is believed that there are many different kinds of dragons, each with the job of protecting a particular thing. For example, one dragon protects the rivers while another one is thought to guard the jewels and minerals found underground. Because of the importance of dragons to Chinese people, during Chun Jie, dragons are found among the parade figures.

3. Make dragon streamers according to the following directions:

Draw a dragon's head on a piece of tag board or stiff piece of paper, and cut it out.

Decorate the dragon's head with markers, crayons, brightly colored paints, or anything else you have available to make a vivid costume. Attach crepe paper streamers or ribbons to the back of the head.

Glue or staple a strip of tag board onto the back side of the dragon mask as a handhold.

Run with the dragon's head so that the streamers move behind you imitating the movement of a dragon's body.

FOLLOW-UP ACTIVITIES

- Organize a classroom or school parade, and dance through the school grounds with your costumes.

- Create your own symbolism for different foods, and make up New Year's wishes to accompany each one.

- Play "Catch the Dragon's Tail" (Milord, 1992):

Choose someone to be the head of the dragon. Line up the rest of the students behind that person. Each person should put his/her hands on the shoulders or waist of the person in front of him/her.

When you give the signal, the person at the head tries to catch the person at the tail, without letting the dragon body break. If it does break, the head person goes to the tail, and the next person in line becomes the head.

- Learn how to prepare some of the special foods eaten during Chun Jie.

8.5. TIE-DYE T-SHIRTS (GLOBAL)

SUGGESTED GRADE LEVELS 5 - 12

PURPOSE

To experiment with an ancient art form that is practiced in many parts of the world

OBJECTIVES

Students will be able to:

- identify several geographic regions in which fabric dyeing is customary.
- describe different fabric dyeing methods.
- tie-dye a T-shirt.

TIME REQUIRED 1 - 2 50-minute class periods

PLACEMENT WITHIN THE CURRICULUM

- as a world history activity
- as an art project
- as an activity in a geography class

STUDENT PREPARATION

- ability to work responsibly with dyes that will permanently stain fabrics and other surfaces.

MATERIALS NEEDED

- 100% Cotton T-shirts
- Procion™ Dyes
- urea
- soda ash
- surgical gloves (recommended but not necessary)
- hot water
- eye droppers
- newspaper (to absorb dyes)
- garbage sacks (to prevent dyes from staining floor or tables)
- plastic bags (gallon size)

- masking tape
- a large bucket (5 gallon size is good)
- containers for dyes (small plastic soda pop bottles work great)
- utensils for making patterns on fabric (may include: marbles, dice, rubber bands, thread, fishing line, sticks, yarn, etc. Be creative!)

PROCESS

1. Introduce the activity as appropriate for your curriculum.
2. Discuss the history of tie-dye with your students through the following points and questions:
 - How many of you have ever done any fabric dyeing? If so, what kind?
 - Fabric dyeing has been practiced in many parts of the world for centuries. Some of the earliest accounts of fabric dyeing have been recorded in China and Southeast Asia.
 - What do people use to dye fabrics? *[Nowadays, some people use store-bought and/or chemical dyes. But, many years ago, and still today in much of the world, people use natural dyes from wood, berries, leaves and other objects found in their natural surroundings. When the Portuguese inhabited what is now Brazil, they named it so after the important pau-brasil dye wood found in the region].*
 - One interesting type of fabric dyeing that is practiced in Indonesia is called batik. In dyeing fabric by this method, one uses melted wax on some areas of the fabric to prevent them from taking the dye. The wax may either be painted on with a large brush, or dripped onto the fabric with a fine tool. As the fabric is put into a bucket or vat with dye, it crinkles, and where the wax cracks, small amounts of dye are absorbed. Later, the wax is melted off.
3. Go over the tie-dyeing directions with your students, emphasizing the need to be careful with the dyes, as they will stain clothes and surface areas. Then, dye the T-shirts according to the following instructions:
 - Prepare the dyes by mixing 2 tbsp. urea and 2 tsp. dyes for each 1 cup of hot water.
 - Prepare the soda bath by mixing 1/2 cup of soda ash into each gallon of hot water in a large bucket. (The soda bath is slightly caustic. That is why we suggest using plastic gloves. If you choose not to use gloves, make sure to moisturize your hands with some type of lotion after you are finished dyeing).

- Prepare the work surface by taping large garbage sacks to the floor or tables to prevent spills from staining working surface. Cover garbage sacks with newspaper to absorb excess dye.

- Prepare the shirts for dyeing by soaking them in the water-soda ash mixture for at least 10 minutes. Wring out the T-shirts thoroughly.

- Experiment with the following ways of making patterns on the T-shirts:

Spiral: Place T-shirt flat on surface. Grab center of shirt and twist. Affix in place with skewers and rubber bands.

Marble Tie: Tie marbles into fabric with rubber bands. T-shirt may be folded first to give different effects. As well, other shaped objects may also be used to change the shape of the pattern. Be experimental.

Bundling: Wad the T-shirt into a ball and wrap tightly with heavy twine or rubber bands.

Crinkling: Lay T-shirt flat on the table. Push its edges together so that the T-shirt crinkles. Affix in place with skewers and rubber bands.

- Dye the T-shirts by using eyedroppers to put dyes on fabric. Use enough dye so that when the shirt is turned over, you can just see the dye coming through to the opposite side. Have fun experimenting with different techniques. For example, put streaks and blotches on the fabric, mix colors, use more dye in some places and less in others. (There's no such thing as a bad tie-dye!)

- Put each shirt in a plastic bag and let it sit for at least 4 hours (6-24 hours is optimal).

- Clean up your work area, throw out the used newspaper, rinse the eyedroppers, and clean up all other materials used in the process.

- Rinse dyed shirts in porcelain or metal sink for 15 to 25 min. Wash alone the first time or with other tie-dyed material before wearing.

FOLLOW-UP ACTIVITIES

- Have your students do a comparative study of dyeing techniques around the world.

- Try doing some batik or another method of fabric dyeing.

- Have students make their own natural dyes and experiment with dyeing different types of fabrics.

8.6. REFERENCES AND RESOURCES

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Milord, Susan. 1992. Hands Around the World: 365 Creative Ways to Build Cultural Awareness & Global Respect. Charlotte, VT: Williamson Publishing.

APPENDIX A

HANDOUTS

HANDOUT #1

NEWS HEADLINES (To accompany lesson 1.4)

Oil Shortages Threaten Agricultural Exports

Geologists have just confirmed that the oil deposits in Central Saudi Arabia are drying up. Because of the impending shortfall, all OPEC countries have agreed to increase their prices by 30 percent. The Wheat Commission and the Pea and Lentil Commission are getting together to discuss what effects the rising oil prices will have on wheat and lentil production. Of utmost concern is the cost of running farm machinery and petroleum-based pesticides and fertilizers.

Cool Weather in South America Freezes Loan Repayments to U.S. Banks

Record low temperatures in Colombia and Brazil have severely damaged this year's coffee crop. Because of the frost, yields are expected to be only twenty percent of what was projected. Mr. Arturo Lopez, spokesperson of FEDECAFE, Colombia's national coffee grower's federation, said this will be the worst year for coffee since the "Roya" plague of 1972. Since both Brazil and Colombia depend on coffee to earn hard currency, it is expected that both of these countries will have to renegotiate the repayment of their loans to U.S. banks.

NAFTA: The President's Final Word Alerts Local Economies

In his final days of the U.S. presidency, President Bush met with Mexican president Carlos Salinas de Gortari and the Canadian Premier to sign the North American Free Trade Agreement. The White House issued a statement saying that this agreement will ease the flow of goods between all three countries. Demonstrators outside the White House, however, said that too many American jobs would go to Mexico. Growers in the Yakima Valley are concerned about potential competition from Mexican produce. A clothing company originally considering moving to Moscow, Idaho, because of labor availability is now reconsidering this move.

HANDOUT #1, continued
(To accompany lesson 1.4)

**Political Unrest in Somalia Challenges Efforts
of Farmers in Pacific Northwest**

Three hundred people died of starvation today in Somalia while awaiting the shipment of food from the western world. Although several cargo ships in the port of Mogadishu are waiting to be off-loaded, workers are afraid to come to the docks for fear rival factions will harm them. Awaiting in the strongholds of these ships are tons of food from the Pacific Northwest, including wheat, dried lentils and corn. Ports in the Pacific Northwest have been particularly efficient in transporting the food to where it is needed. Farmers in the Northwest have also been very cooperative in bringing their harvests to the ports. Without security being restored in Somalia, no more food will be received in the ports.

These Shoes are Made for Walking

Yesterday, a major confrontation took place between the female factory workers and the management of the Sao Paulo Shoe Factory, an exporter of 60% of the USA's footwear imports. Women, who comprise 87% of the laborers, said they would no longer put up with their intolerable working conditions, low salaries, and lack of facilities for child care. Maria Aparecida Bezerra, the organizer of the strike, said the women wanted proper lighting throughout the factory, an hourly wage of \$2.00, and a company-sponsored child care center in close proximity to the factory. Ms. Bezerra said that the factory owners had made many false promises to women so that they would accept employment. But after the women had signed their work contracts, conditions worsened.

HANDOUT #2

PSST...MUTINDI MAITHA IS IN AFRICA!

(To accompany lesson 1.5)

O.K. detectives, our top sleuths tell us that Mutindi Maitha is in search of a valuable treasure somewhere within the continent of Africa. Mutindi has been seen in various locations, but nobody has been able to catch her...nor figure out just what treasure Mutindi is after. It's up to you to trace Mutindi's path from the clues given below, and FIND HER...AND THE TREASURE! Good Luck!

1. Word has gotten out that, after cuddling koalas in Australia, Mutindi Maitha, interested in a secret treasure that was thought to be found somewhere in Africa, left Australia, heading due west. Her plane ran out of fuel just short of mainland Africa, and Mutindi was forced to land on an African island just east of Mozambique. Where did she land?
2. Anxious to find her treasure, Mutindi went straight to the place famous for its mines. In talking with local officials there, Mutindi learned that these famous mines were the source of most of the world's gold...a wonderful resource, but not what Mutindi was after. What country did she go to?
3. Disappointed with not finding her treasure on the first try, Mutindi decided to get a new perspective on her situation. She headed north, and was next seen on Africa's highest mountain. What mountain was she on, and in what country was Mutindi seen?
4. To plan out her search strategy, Mutindi thought it best to contemplate by relaxing on the shores of Africa's largest lake. Where did she go?
5. With her map in hand, and travel plans worked out in her head, Mutindi hopped over to the country that borders Africa's largest lake to the North. She was then seen catching a boat on the river well known in Hollywood for its "jewel." On what river was her boat?
6. It must have been a long boat trip, because Mutindi was spotted next one week later in a capital city where the "Blue" and the "White" meet. In what city and country was Mutindi?
7. Discovering that the "jewel" found in that region was not the treasure she was after, Mutindi took a plane to Zaire, as she had heard that, in this country, one of the world's most precious resources could be found. (Could this be the home of her treasure?) What mineral resource was Mutindi to find in Zaire?
8. Thrilled by the beauty of the resource she found in Zaire, but disappointed that it was not her treasure, Mutindi caught a bus to Zaire's southern neighbor where she followed one of Africa's principal rivers to a region also well-known for one of its natural resources. Not knowing what the resource was, Mutindi stayed on the river until she caught word that, if she didn't go ashore, she would take a great "fall." Where was Mutindi?

HANDOUT #2, continued

(To accompany lesson 1.5)

9. After hanging out to find out more about this region, and what treasure might be found in its natural resources, Mutindi learned that she had been in it... Yes, the resource was water, and it was important for Africa because it provided an important energy source for the Southern countries of Africa. What do you call this type of power?

10. Well, what was good for Africa, in this case, was not so good for Mutindi Maitha...she was still without her treasure. Mutindi was not going to give up, though, so she asked to be taken to a region that would put her closest to Arab Africa...as she knew that this part of Africa was well-known for some of its resources (although Mutindi did not know what they were...poor Mutindi, she should have studied her geography!). There she found herself, right in the middle of a desert! Where was Mutindi?

11. Asking to be directed to the nearest body of water, Mutindi was taken to a lake near the capital city of N'djamena. What lake was she taken to, and what countries bordered her there?

12. Mutindi's last hope was to check out a West African country, also famous for one of its natural resources. She headed south to Cameroon, and there started upstream on the Benue, the river which would take her to her treasure (so she thought). Traveling just long enough to cross a national border, Mutindi got off the boat to ask about valuable resources in that country. What did she learn?

13. Exhausted from her travels, Mutindi decided to abandon her search for her treasure in Africa. Her next plan was to make her way to the rain forests of Latin America, in search of the delight she had been craving these weeks of her journey throughout Africa. She caught another boat on the Benue, which met up with a major river in West Africa. Then she took this to the capital city of Niger. What was the major river, and what was the capital city?

14. From there, Mutindi caught the next flight to Accra, where, low and behold, in the airport, she found the treasure she had been dreaming about for so long... Well, she found the main ingredient in that treasure, anyway. What country was she in, what was the treasure Mutindi was after, and what major ingredient of that treasure did she find in Accra?

15. The problem Mutindi encountered was that, although the raw materials for the delectable delight she wanted are found in this West Africa region, the actual product that Paula was looking for is not produced there. Boy, did Mutindi ever go wrong this time! Now, she was going to have to travel to a place where she could get the yummy treasure she had searched for so diligently. If you can name the ocean you need to cross to find Mutindi's treasure in Pennsylvania, before Mutindi figures it out, you will beat her to the treasure, and it will be yours! What ocean must you cross?

WELL DONE! NOW THAT YOU HAVE SUCCESSFULLY COMPLETED YOUR SEARCH SEE YOUR TEACHER FOR YOUR TREASURE.

ANSWER SHEET: "PSST...MUTINDI MAITHA IS IN AFRICA!"
(To accompany lesson 1.5)

1. Madagascar
2. South Africa
3. Mt. Kilimanjaro; Tanzania
4. Lake Victoria
5. The Nile
6. Khartoum; Sudan
7. Diamonds
8. Victoria Falls or Zambezi River
9. Hydroelectric power
10. Sahara
11. Lake Chad; Niger, Chad, Cameroon, Nigeria
12. That there was oil in Nigeria
13. The Niger; Niamey
14. Ghana; chocolate; cocoa
15. The Atlantic Ocean

HANDOUT # 3

MANGOLE MALEBOLE IS IN BOTSWANA! WHERE IS SHE AND WHERE IS THE TREASURE?

(To accompany lesson 1.5)

Challenge: To all gumshoes, our top sleuths tell us that Mangole Malebole is in search of a key to the mysteries of Botswana, and that it is hidden somewhere in the country. Sly as she is, Mangole has been seen in various locations, but nobody has been able to catch her, nor to figure out just what treasure she is seeking. It's up to you to trace Mangole's path from the clues given below, and find her and the treasure.

1. You enter Botswana at this crossroads near the town where so many people come from Zimbabwe to shop for goods.
2. You go to the OK Market and are directed to a Bessie Head novel in which is written another clue: Go to the place where you can find many animals of the antelope species that has the body of a big cow with zebra-like stripes on its legs.
3. At the park, you initiate a conversation with a game park ranger, who tells you that the next clue can be found in the place that experiences the hottest temperatures in Botswana.
4. In this place, you are given a message by an old woman whose husband has migrated to earn the family's living in the dike similar to that found in Kimberly, South Africa.
5. You meet the old lady's husband, and he gives you another clue: Go to the point where the big river empties into a pan to form many little rivers, a swamp, and a huge delta where many animals can be found.
6. At the very juncture of the waters splitting, you go to a certain mopane tree that looks peculiar to you because you seen an envelope setting on a low branch. You open the envelope and a lemon falls out. Where do you go now? After deciphering the clue, you head south until you are about in the middle of the country, and then head due east to a place where you think you might find more lemons.
7. When you arrive, you are struck by the fragrance of citrus groves. You encounter a farm worker and ask where you can find the lemon trees. She directs you farther east. At the entrance to the groves, you seen an irrigation pump. On the top of the pump is another envelope with another clue. This time, you are directed to the home of the Basarwa - located on the border of the country that became independent just a few years ago.

HANDOUT #3, continued
(To accompany lesson 1.5)

8. At this relatively remote location, you encounter a Basarwa band that survives by hunting wild animals and gathering wild leaves, berries and tubers. You find it extremely warm here. Because the elder of the band knows why you are here, he takes you to the border of the largest game reserve in Botswana, where you get your next clue.
9. At the reserve border, you are given another clue by a young man who tells you to go to the place where the idea of the Brigades first originated.
10. You meet a Brigade member who tells you to go to the place that receives the highest average annual rainfall in the country, and there you might find your next clue.
11. You are now directed to go to the southernmost point in Botswana of the single line railway. Here you are to meet someone on an old, now unused dining car that sits in the rail yards.
12. The man you meet is very old and does not speak very much English. He will be happy to provide you with the next and final clue if you promise to bring him part of the treasure. You do, and he writes down the last clue. You look at it, and realize it is in code. You must crack the code and locate the treasure: E N O R O B A G is the place.
13. When you reach this city, you are met by a someone who came from the abattoir at Lobatse. If you can define the word - abattoir - you will be given the treasure!

**ANSWER SHEET:
PSST! MANGOLE MALEBOLE IS IN BOTSWANA!
(To accompany lesson 1.5)**

1. Francistown
2. Gemsbock National Park
3. Tsabong
4. Jwaneng
5. Okavongo
6. Selebi-Phikwe
7. Ghanzi on Namibia border
8. Central Kalahari Game Reserve
9. Serowe
10. Kasane
11. Ramatlabama
12. Gaborone
13. A slaughterhouse and meat processing plant

The "treasure" to be provided to students is a hamburger. After minerals, Botswana's main export crop is beef, which is sent to Europe.

HANDOUT #4

PSST! PAULA PERDIDA IS LOST IN LATIN AMERICA!

(To accompany lesson 1.5)

Challenge: O.K. detectives, the recently reported missing Miami resident, Paula Perdida, is thought to be somewhere in Latin America. Her exact whereabouts are not known, but somebody that fits her description has been seen in several locations over the past few weeks. Knowing her free spirit and love for adventure, Paula's family members fear that it may be months, perhaps even years before they hear from or see Paula again. In order to track down their daughter, Paula's parents have offered to throw a special party for whoever finds her. Your task, sleuths, is to locate Paula as quickly as you can. Use the following pieces of data to help track her down. Good luck!

1. The first evidence that Paula was in Latin America came from a woman who was selling fabulously colored woven cloth in the capital city of a Central American country. Paula not only bought cloth from this woman, but asked where she could get information about the history of the Mayan people of this region. In what city and country did this woman see Paula?
2. Two weeks ago, Paula was apparently seen visiting some ancient ruins in a peninsular area of Mexico. In what region of Mexico was Paula seen, and what ruins was she visiting?
3. From Mexico, Paula must have travelled south, because she was seen next in the country whose canal connects Central and South America. At what canal and in what country was Paula seen?
4. Seemingly very interested in the history of ancient Latin American peoples, Paula next visited a museum full of pre-Columbian gold artifacts. The museum is located in a country which is bordered to the north by the Caribbean Sea and to the west by the Pacific Ocean. In what country is the museum?
5. Paula was next spotted amongst a group of tourists who were visiting ancient ruins of the great Inca civilization in a nearby country. In what country was Paula and this tour group?
6. In her travels, Paula visited one more area which is well-known for its ancient civilizations. These are known in Quechuan as "Sac Sihuman" or the serpent. The head of the serpent is a city located near the Ucayali River in the southern region of Peru. What is the name of this city?
7. Heading to the eastern border of Peru, Paula must have decided to take in the scenery. Word has it that she was seen picnicking at Latin America's highest lake, which is nestled among the Andes Mountains between Peru and Bolivia. What lake was Paula visiting?

HANDOUT #4, continued

(To accompany lesson 1.5)

8. Perhaps Paula found the high mountain air too thin for her liking because she was spotted shortly after that on some Pacific islands off of Ecuador that are world renown for their diverse marine and reptilian wildlife. What islands did Paula visit?

9. Next, Paula was seen the northern region of a country which has a tremendous fishing industry and is the world's second largest producer of a mineral used in making coins. What country was she seen in and what mineral is produced there?

10. Missing the fascinating wildlife that she saw off the coast of Ecuador, Paula headed to the world's largest rain forest in hopes of finding more interesting creatures. There, she even had a chance to fish on the world's longest river. What rain forest did Paula go to, and on what river did she fish?

11. Wanting to see yet one more South American region that is known for its great plant and animal diversity, especially its birds, Paula headed south to a marshy area of Brazil. What region was she in?

12. As is common in February, Paula found this region flooded due to heavy rains. She was last seen at an airport trying to get a flight to the Brazilian city famous for its carnival parade and celebration. If you are quick, you can beat Paula to this city, find her at the airport, and receive your reward. In what city are you going to find Paula?

Well done! Now that you have found Paula, check with your teacher about the party that will be thrown in your honor.

ANSWER SHEET: PAULA PERDIDA IS IN LATIN AMERICA!
(To accompany lesson 1.5)

1. Guatemala City, Guatemala
2. Yucatan Peninsula, Aztec
3. Panama Canal, Panama
4. Colombia
5. Ecuador
6. Cuzco
7. Lake Titicaca
8. Galapagos Islands
9. Chile, copper
10. Amazon Rain Forest, Amazon River
11. Pantanal
12. Rio de Janeiro

The reward is to make carnival masks and hats, learn about and celebrate your own classroom carnival. See lesson 8.2 for details.

HANDOUT #5

CASE STUDY - ZAIRE COLONIZES KITTTITAS

(To accompany lesson 2.2)

Zaire is a politically and economically powerful industrialized country in sub-Saharan Africa. In its early exploration of the world, looking for raw materials for its industries and seeking global markets, Zaire comes across Kittitas, an agriculturally rich area. Kittitas grows hay and has a thriving beef production industry, which are the bases of the livelihood of its population. The people in Kittitas are mostly atheists. Not surprisingly, a lot of missionaries arrive from Zaire, a Christian country, to convert the people of Kittitas to Christianity. Along with missionaries are industrialists who come to Kittitas to explore possibilities of setting up commercial activities. As these industrialists establish their businesses, they realize that there is need for administrative control of Kittitas to ensure that their businesses are successful. So they urge their government to establish Zairian administrative structures in Kittitas. Zaire does so. The new administrative system makes all local leaders in Kittitas subordinate to the colonial administration. In fact, Zaire's own language, Luba, is to be taught in all schools and used as the official language. Thus, Zaire has economic and political control over Kittitas.

During the term of Zaire's colonization of Kittitas, the demand for tea in Europe and other countries in Africa grows tremendously. Zaire does not have an appropriate climate for growing tea; Kittitas does. So, Zaire decides to establish tea plantations in Kittitas. This involves introducing a strange crop to the area and moving people away from their residences and fertile areas to make room for huge tea plantations. The colonialists in Kittitas embark on moving the people from the valley to surrounding hilly areas where the climate and terrain are not suitable for hay growing and cattle production. Having very little power to negotiate and change the decisions of the colonial office, the people are settled in their new areas. Since they cannot continue to produce hay and cattle for their export markets in Asia and Latin America, they end up as laborers on the tea plantations. Their wages are determined by the Zairian industrialists. As the industrialists' concern is to maximize profit, they pay only minimal wages for labor.

HANDOUT #6

SHIPWRECK

(To accompany lesson 2.3)

In the midst of a harrowing night of stormy weather, crushing winds cause the cruise ship upon which you and your classmates were sailing, to capsize. At dawn, you find yourself washed ashore a deserted island. The island is thickly blanketed with tropical vegetation, and at the center of the island there is a mountain peak that looks like an extinct volcano. As you admire the sandy beaches, you hear the sounds of tropical birds and animals coming from the forest. You rest for a while on the beach as the rising sun warms your back.

After you overcome your initial shock about what happened, you realize that you may be on this island for some time. You must decide, along with the others, how you are going to provide for your needs of food, clothing, shelter. You also want to design a plan to be rescued.

The specific issues you must resolve are the following:

1. How you are going to organize yourselves for survival - to find food, water and build shelter? On newsprint, write down how you organized yourselves and how you decided to organize yourselves.
2. What rules will you initiate to ensure that everybody gets what they need? Write down your rules on newsprint.
3. What strategy will you devise for being rescued? Outline your strategy on newsprint.

HANDOUT #7

AMERICAN MANUFACTURER/COMMERCE DEPARTMENT BRIEFING

(To accompany lesson 3.3)

You are from the Northwest in the United States. You are a manufacturer of agricultural machinery that is needed in developing countries. You are interested in establishing a trading relationship with developing countries because your own country has been saturated with the type of machinery you manufacture and you want to expand your market. Accompanying you is a senior member of the Commerce Department who has been authorized to work with you on establishing a trading relationship.

The people in your country eat well. They have a great deal of variety in their foods because your country has established export plantations in several developing countries. Because the people in your country have become used to "exotic" foods, you have been asked to identify a source for guavas. You know these are grown in abundance in particular areas of Mozambique, a country in Southern Africa. It is your thought that you could negotiate a trading relationship on the basis of guavas and your machinery.

You have certain specific guidelines from the leaders of your home country. You must sell your machinery for the highest price possible in order to generate revenue both for the state and your company. In return, you must purchase food commodities - in this case guavas - at the lowest price possible in order that your country can keep food prices low - even if the food is imported. You are authorized to make any type of "deal" you can that will satisfy these two needs. You are allowed to be innovative in your negotiations.

In your negotiations, you must consider how to overcome the problem of hard and soft currencies. As an American company, you must obtain hard currencies for your machinery, but you know this will be a problem to the Mozambicans. You must find a way out of this dilemma. Also, since your machinery is bulky and weighs a lot, you must find a way to factor into the negotiation the cost of shipping and handling.

You have learned that the people in Mozambique feel they have something to offer the developed world, not only primary agricultural commodities, but also some manufactured items. The leaders have all been highly educated in your country and are familiar with your country's needs. However, as leaders, they must put their own country's needs first.

Your job is to negotiate a contract that fits the guidelines you have been given.

HANDOUT #8

MOZAMBICAN MINISTRIES OF AGRICULTURE AND TRADE BRIEFING

(To accompany lesson 3.3)

You are senior members of the Ministry of Trade and Ministry of Agriculture in the country of Mozambique in Southern Africa. Your country is interested in establishing trading relationships with manufacturers in the U.S., Europe and Japan. You are deeply concerned, however, about making the terms of trade favorable for your country. That is, you don't want relationships that will benefit the other side; you want to ensure that your country and your producers benefit equally from any relationships that are established. For this reason, you want to trade in a range of commodities: primary agricultural, mining commodities and manufacturing.

Your country is relatively poor. Its GNP per capita is only \$80, and personal incomes range from \$120 to \$10,000 per year, with an average per capita income of only \$273. Your people are primarily farmers, growing a number of locally-consumed and export crops. Your country has "agricultural growth zones" where certain crops grow very well. During colonial days, however, the Portuguese did not construct roads to these zones because the crops in many of these zones were mostly fruits and vegetables. Despite attempts to become food self-sufficient, current agricultural practices, soils and rain patterns require that you import a portion of your foodstuffs, especially wheat and rice. You must use foreign or hard currency to make these purchases internationally, often placing your country in debt.

Farmers in your country are experiencing a record production year. The rains were good, labor to help on farms was available, and the civil war ended with a peace treaty. Even small, family farms experienced a record harvest in grains, all of which have provided your citizens with an adequate food supply in most commodities. The blend of old and new technologies farmers are using, in addition to the favorable weather conditions, has indicated to both your ministries that when agricultural practices are implemented efficiently, good results can ensue.

Since you know the potential of agricultural production in your country, the leaders have decided that diversification of the economy is timely. To support industrialization, you require a range of machinery, including those for farm mechanization. You have recently learned that a U.S. manufacturer would like to meet with you and discuss an arrangement to import their machinery and, in return, discuss the possibility of exporting guavas. You believe this to be a good idea, since guavas will be harvested in record numbers, but you are concerned about getting them to the airport quickly since the roads to the guava groves are very poor.

Your job is to negotiate the highest price for the guavas, and pay the lowest price for the machinery. You have broad latitude to be very innovative in the way you negotiate. You can make any type of barter, hard currency, exchange agreement you think will benefit you and your country, especially if it will provide support to construct the road to the guava groves.

HANDOUT #9

HUNTERS AND GATHERERS

(To accompany lesson 4.3)

People who survive on the basis of hunting animals for meat or gathering vegetables, roots and berries must have special skills. Men who hunt must know about weapons and poisons to use to kill animals, as well as how to track them and kill them. Women who gather vegetables, roots, tubers and berries must have skills in identifying where to dig, what berries are not poison, and how to prepare the food they find.

Hunters and Gatherers live in very small bands (no more than 25 people) because only so many people can be fed from the resources in the surrounding area. Bands also move frequently, since food resources may be used up for the season.

In general, people who practice this type of economy are found where it is very warm and the temperature does not change much throughout the year. They must also live where food resources and water are available. Since they walk wherever they go, they do not generally have many possessions as these must be carried wherever they go.

HANDOUT #10

PASTORALIST HERDERS

(To accompany lesson 4.3)

People whose economy is based in having herds require relatively large expanses of land on which their animals can graze. They must also be near water both for themselves and their animals. Some pastoralists are nomadic - they move from place to place constantly in search of good grazing lands for their animals. Other pastoralists travel in seasonal rounds, that is, they leave some of the family in one place to live permanently, while the rest of the family moves with the herds to better grazing places for the season. At the change of seasons, the family is joined together in one place.

Pastoral societies can grow quite large, numbering in the hundreds, providing the pasture and water resources can provide for that many people.

Men and boys generally move with the herds, while women and small children stay together in a more permanent location - if they are "transhumant" pastoralists (i.e., move in seasonal rounds). Because there is a lot of movement among pastoral societies, "government" is what is called "acephalous" - or headless. Decisions are made by the heads of families, and all agree as to what is best for the entire group.

Pastoralists like to live not too far from agriculturalist farmers because they like to trade the milk their animals produce for the grain crops that farmers produce. A problem occurs, however, when pastoralists are not careful where they move their animals; sometimes farmers become upset because pastoralists' herds are moved right over their fields.

HANDOUT #11

AGRICULTURALIST FARMERS

(To accompany lesson 4.3)

Farmers live in certain areas permanently. They need good soils, water, seasonal rains, sources for seeds and fertilizers, and markets to sell some of their crops. Farmers also need adequate land on which to grow crops to feed their families and sell some of their crop to earn cash. Farmers also need a good supply of labor to help at peak agricultural times, like planting, weeding and harvest.

Most of all, farmers need a way to peacefully grow their crops. They need the support of their neighbors and the political system in order to provide a reliable food supply. For this reason, social organization among agriculturalist farmers is more hierarchical, since to avoid fighting over land, someone must have the authority to say who will get what parcels of land. The authority is often a "headman" or "chief," and sometimes is a king.

Farmers like to live not too far from roadways and markets in order that they can move their crops easily and sell them at markets. Farmers generally accumulate more assets since they remain in one place year after year. They must, however, have adequate water resources for their crops and their families.

Because farmers are sedentary, they also want education for their children, health care for their families, and access to other resources such as wood for house building, or markets to buy manufactured goods. Along with these, farmers also want electricity and access to information to become better farmers. Since most farmers keep animals to help with plowing and to eat, They also want help in keeping their animals healthy.

HANDOUT #12

INDUSTRIALISTS/WORKERS

(To accompany lesson 4.3)

Workers need factories and offices in which to work. Factories must be located near major sources of water, and be right next to major transportation arteries. They must also be close to the areas where raw materials are either grown or imported in order not to increase the price of the items produced by the cost of transportation.

Industrialists/workers also need housing that can accommodate themselves and their families. They need to be assured of water and food availability, as well as of obtaining the goods they need to live. Because many industrialist/workers are needed in one factory or office, housing is generally not adequate to grow an adequate food supply, so incomes must be liveable.

Transportation for workers is also required since not all can live close to their place of work. If roads and buses or cars are available, then they must also be cheap enough for workers to ride whatever means of transport.

Work opportunities must also be available for the rest of the family. If a spouse wishes to obtain work, then other factories or offices must be accessible. For children, schools must also be accessible and affordable for families. For the whole family, health care must be accessible and affordable.

HANDOUT #13

DILEMMAS ON WATER USE

(To accompany lesson 4.4)

In Zimbabwe and other Southern African countries, drought has dried up watering holes used by humans and animals alike. Irrigated crops have died in their early stages leaving no harvest. Women must walk over 30 miles to and from a source for water, but it is brackish and not very healthy for family consumption. A non-governmental organization has just dug wells and installed pumps in the region, and the community was told the aquifer was somewhat limited and that water should only be used for human consumption. But the animals are dying.

In Senegal and Gambia, industrialization in major cities along the Senegambia River has increased the demand for electricity. Development of cotton as a cash crop on the river valley highlands has generated a need for water for irrigation. These two needs led the government to request assistance to build several dams along the river. The social impact assessment indicated riverain rice production would cease due to flooding, thus decreasing women's ability to feed their families and generate some income. The environmental impact statement indicated a change in the river ecology owing to the blocked flow of fresh and saline water (from the Atlantic Ocean) and the predicted demise of certain species of fish.

Many of the household responsibilities of rural women in Pakistan are activities that require them to spend a large part of their time collecting water: cooking, washing clothes, house cleaning, caring for children, and tending livestock. Due to lack of facilities, as well as technical and social constraints, women's access to water is less than that of men's. For example, purdah restricts a woman's mobility within the village and denies her access to water sources located in public places where men might be present. Mosques, which are popular sites for water taps and standpipes, are usually unavailable to women. As well, women may not have access to the animals needed for animal-drawn facilities. Due to these constraints, the work of rural Pakistani women is burdensome, these women use minimal amounts of water for personal hygiene, and their families' health is put at risk.

HANDOUT #14

DILEMMAS ON LAND USE

(To accompany lesson 4.4)

(Poats, Susan and Hilary Sims, 1989)

A husband and wife with five children in rural Malawi must decide how to use their three acres of land. They normally grow corn, beans, and peanuts along with some rainfed vegetables for food, as well as tobacco as a cash crop. The marketing board has increased the tobacco purchase prices for the next marketing season by 35%. The husband sees this as an opportunity to grow more tobacco to make money, and wants to plant two acres of tobacco. The wife, worried about food shortage which the family has been experiencing for the last three years, wants to put more land to food crops. Agricultural extension agents trust the man as a credit worthy individual in the village, and have always granted him credit for the growing of tobacco. In fact, such farmers are seen as important to the country because its economic growth depends on agriculture. Agricultural products constitute over 90% of domestic exports and tobacco alone contributes over 65%. Yet the "curing" of tobacco demands a lot of firewood, which has led to a lot of trees being cut for firewood during the tobacco curing season.

In Guatemala, coffee is a commercial crop and earns a lot of money for the country. The development of large coffee plantations has displaced smallholder farmers from fertile lands, and forced them to move to marginal lands. Being stripped of fertile lands, most young men have had to move to urban areas or to coffee plantations seeking employment. They have left behind women, particularly middle-aged and elderly ones, who struggle to survive on the marginal lands. They use these marginal lands both for the cultivation of food crops and for raising livestock. Plantation owners, who use only 70% of their leasehold lands are unwilling to part with the remaining 30% unused portion of their property.

In India, like many other areas in developing countries, women are responsible for taking care of nutritional needs of the family. To do so, they grow the crops that are used for feeding the family. This includes cultivation of local varieties of rice and horticultural crops. It takes hours to water and tend these gardens. Men have been more focused on the growing of hybrid rice varieties for cash. These demand use of fertilizer and pesticides. Ammonia-based fertilizer has been found to be the most suitable for rice and yet it is known for increasing soil acidity especially in dryland rice. As well, along with improving the vegetative growth of rice, fertilizers make weeds grow profusely. This demands a lot more weeding and men have involved women in this at peak rice husbandry times when a lot of labor is needed, consequently cutting into women's time for other household responsibilities and income generating activities.

HANDOUT #15

DILEMMAS ON FOREST USE

(To accompany lesson 4.4)

(Collins, 1990)

In efforts to achieve economic growth, the government of Ecuador has supported the increase of agricultural production. The expansion of the cattle industry, in particular, has been encouraged, as beef brings in good export money. To support the industry, the government has provided incentives to ranchers who will use the Amazon lands for grazing their herds. The growing cattle ranching industry in Ecuador has led to the clearing of much forest land, and the destruction of forest resources vital to the livelihood of many indigenous Amazonian peoples. Women, who could once gather the fruit, palm hearts, pulp, starch, and sap from the buriti tree to provide for the needs of their families, now must desperately seek out alternative food sources for household consumption.

The predominantly rural population of Madagascar numbers 11.2 million, more than twice what it was in 1960. It is estimated that Madagascar's population will reach 28 million by the year 2025. This growing population has meant that more of Madagascar's forests are cleared for the cultivation of rice, cassava, maize and other staple food crops. With continued clearing of forests, wood, the primary source of fuel for the rural population is increasingly difficult to find. Women, who are responsible for gathering firewood and preparing food for the family, spend an equivalent of one and a half days each week gathering fuel wood for cooking.

In India, up to 580 square miles of forested land is converted to other uses every year. More than 19,300 square miles have been occupied by settlers or shifting cultivators, and the remaining forests are often degraded by logging, fuelwood collection and clearance for grazing land. Indian women, who are responsible for gathering medicinal plants used in treating common ailments, have been negatively impacted by their country's rapid deforestation. Due to the scarcity and extinction of these valuable medicinal resources, caused by the deforestation, women must travel long distances to gather the herbs, leaves and plants they need to care for the health of their family members.

HANDOUT #16

CIRCLE OF POISONS FACT SHEET

(To accompany lesson 4.5)

#1

Velsicol is one of many chemical companies that produce pesticides for export. The Memphis plant of the Velsicol company is the sole U.S. producer of chlordane and heptachlor - both banned in the U.S., but produced for export. Around the plant there are 75 miles of contaminated riverways, 34 of them on the Mississippi. Commercial fishing has been banned due to the elevated levels of chlordane in the water. There are three super-fund sites in the area that tax dollars must clean up. Consistently high levels of chlordane and heptachlor have also been monitored in the air. The persistent, bioaccumulative nature of these organo-chlorine chemicals means that it will take many years for the pesticide to disappear from humans, wildlife, and the general environment even after the production stops. Meanwhile, the production continues from this Tennessee plant.

In Memphis, Velsicol is permitted to dump toxic waste from its manufacturing operations into the Memphis sewer system. Through its sewer tie-in, in 1987, Velsicol sent approximately 17,150 pounds of its pre-treated wastes, not to mention 455,000 pounds of sodium sulfate, to the North Wastewater Treatment Plant. Like other publicly owned wastewater systems, Memphis' plant is designed to treat sewage, not toxic chemicals.

Velsicol studies deny that its chemical production has any health effects on its workers, but the National Academy of Sciences and other independent researchers have found contradictory results with higher than normal rates of cancer and liver damage among Velsicol factory workers.

(Greenpeace Report, 1989)

#2

According to a National Agricultural Chemicals Association (NACA) survey, one billion pounds of pesticides are produced annually in the U.S.; 34% of these are exported. Of the pesticides exported from the U.S. in 1990 that are identified on U.S. Customs records, 42% are banned, unregistered, or restricted use products.

The extent of the exportation of these pesticides is difficult to determine because exporting companies are not required to document their shipment of unregistered chemicals. Recently, due to pressure, exporting companies agreed to reveal the identity of these chemicals. However, there was a discrepancy between the companies' twenty-six reported chemicals and the Environmental Protection Agency's (EPA's) forty-four.

(FASE, 1991; Multinational Monitor, 1985)

HANDOUT #16, continued

(To accompany lesson 4.5)

#3

Pesticide regulations and the enforcement of them is often very difficult in developing countries. Instead of large environmental protection agencies, like the EPA, each country may have just a few workers who are responsible for regulating the use of all chemicals. Due to inadequate monitoring, there is great misuse.

Even within the EPA, there are problems with the regulation of pesticide exports. FIFRA is the legal act of the EPA which calls for the regulation of pesticide use. Part of this act requires exporting companies to notify importing country governments and foreign purchasers of pesticides and chemicals that are not registered. This notification process is intended to provide useful information on which importing country regulators can base their decisions about control of use. However, health and environmental information is not included in these notices, and the active chemical ingredient is not even required information. Furthermore, many times these EPA notices do not go out, and if they do, they often arrive long after the product has been used.

#4

Once overseas, pesticides are applied by field workers, many of whom are not properly trained in the use and potential risks of specific pesticides. In tropical climates, protective clothing is rarely used because of the heat, not to mention the expense. Many of the pesticide labels instruct to destroy pesticide-soiled clothing, but this is not a realistic expectation of farm workers who may have only one set of work clothes.

Education to the farm worker can be helpful, but s/he can only access this information if there is job security and negotiating power. For example, if an agricultural extension agent tells workers not to re-enter a field for 24 hours, but their employer tells them to work the field that day, which instructions do you suppose the workers will follow? As well, workers may know to wash themselves with soap, but if there is neither soap nor water easily accessible, they will go without washing.

As a result of these practices, the great majority of pesticide poisonings occur in developing countries. These poisonings can result in short-term effects such as dizziness and nausea, or long-term problems such as sterility, cancer, birth defects, and even death. While about 80% of agrochemical use occurs in developed countries, people in the Third World suffer most of the world's pesticide-related deaths.

HANDOUT #16, continued

(To accompany lesson 4.5)

#5

Women and children in developing countries are at particular risk for pesticide poisoning. Many of them live in poorly protected labor camps where they often receive aerial drifts from crop dusters. Often temporary labor housing does not even have walls. The rivers used for drinking water, bathing and washing, are contaminated from pesticide run-off. Given children's low body weights and tendency to consume more fruits and vegetables than adults, they are particularly affected by tainted foods.

Due to the lack of pesticide-use regulations, many of the fresh foods sold in the domestic markets are heavily contaminated. There is usually a very short period between harvest time and the consumption time of many agricultural commodities sold in the local markets. Many pesticide residues break down given adequate time, but consuming agricultural products soon after they have been treated chemically means consuming highly contaminated vegetables and fruits. In addition, a common occurrence in the Third World is the selling and distribution of foods to the local markets after they have been rejected by the export controllers because of high residue levels. As a result, heptachlor has been found in mothers' breast milk at levels 150 times higher than the international standard.

A final issue that affects many rural Third World residents, but especially women and children, is the pesticide container disposal practices. Plastic and metal products are often of premium value. When the rains come, any plastic will suffice as a raincoat, even if it was from a pesticide container. The most common form of poisoning is through skin contact. Metal and plastic containers are also re-used for many purposes, including bathing children.

#6

Carelessness with the packaging and labeling of pesticides in developing countries can lead to serious health consequences. Often, farmers take their own containers to the agriculture store to obtain small amounts of pesticides. From this practice, two immediate problems can arise. First, when the pesticide leaves the store, it most like will not have any sort of label or information with it. Even if there is an awareness that pesticides are potentially dangerous, no warnings about the dangers of a specific pesticide are provided with its purchase.

Second, it is likely that the container used for pesticide storage looks identical to the container that is filled with consumables bought at the market on the same day. The pesticide and food are taken home in the same basket, and may even be stored on the same shelf at home. In April of 1990, over 100 peasants died in India after consuming food that was prepared with a powerful insecticide, lindane, instead of flour. The two products had been stored near each other at the cook's home.

(The Times, 1990)

HANDOUT #16, continued

(To accompany lesson 4.5)

#7

The abusive use of pesticide labeling and advertising has caused grave health problems for people of developing countries. Contrary to the U.S. experience in which children learn that a skull and cross bones signals the danger of poisons, this symbolization has other meanings for other cultures. Sometimes products marked in this way are considered magic or miracle-working.

Even if the pesticide user is literate and can read labels, pesticide labels are usually not written in one's local language. Also, brand names are often used instead of generic names, making it difficult for even extension workers to know which chemicals they are dealing with. As well, there is ample evidence showing how chemical companies mislabel and advertise, providing false information, misleading safety comparisons, trouble-free production and unrealistic yield predictions.

Chemical companies extensively use the powerful media of Third World countries to promote the use of their products. However, there are very seldom any programs or media campaigns to educate people about pesticide hazards.

#8

Misuse and uninformed use of pesticides leads to severe problems. If not properly managed, target insects become resistant. Worldwide, some 450 crop pests and human pathogens have developed resistance to pesticides as a result of pesticide overuse. This resistance leads to heavier and more frequent applications, which may eventually result in the destruction of many predatory insects and the outbreak of secondary pests. For example, in South and Southeast Asia, the brown plant hopper was a minor nuisance fifteen years ago, but it has now become an epidemic problem due to the natural predators being killed off.

In Central America, cotton farmers used to control the three major pests by natural methods and low levels of pesticides such as infusions of tobacco leaves. In the 1950's, applications of newer insecticides, eight times a season, began. Although some pests were eliminated, with time, even more appeared, and pesticide applications continually increased. In short, pesticide misuse creates an expensive and unbalanced farming system.

(Bull, 1982)

HANDOUT #16, continued

(To accompany lesson 4.5)

#9

Stockpiles of obsolete pesticides, stored near towns, waterways and environmentally sensitive areas, have accumulated to alarming levels in many Third World countries, posing urgent environmental and public health risks. Lack of good storage creates conditions for rapid deterioration of the pesticide containers, particularly in harsh tropical climates. Labels may become worn or illegible, and large quantities become outdated if they are not rotated in storage.

Why do many Third World countries have such large stockpiles of obsolete and unusable pesticides? Sometimes, imported pesticides are donated by governments of industrialized countries. Many donations come tied to aid or trade packages, and far exceed what can reasonably be used.

There are differing views on how best to handle this situation. Proposals range from incineration, to returning the chemicals to the countries in which they were produced. Regardless of what plan is chosen, one unavoidable cost will be the repackaging of vast quantities of materials currently stored in broken and corroded containers.

#10

Europe and the U.S. export not only pesticides to developing countries, but also the production technology and facilities that allow these countries to produce and export their own pesticides. United Nations statistics show that Asia, Latin America, and Africa together export slightly more pesticides than they import.

In his book, The Bhopal Syndrome, David Weir describes the desperate attempts of Javan villagers to control emissions from a plant that produces DDT powder. Local environmental organizations had documented 25 pesticide poisoning-related deaths in the area. As well, the manager of a neighboring plant where paraquat is produced admitted to Weir that his facility posed a health threat to the hundreds of slum dwellers whose houses lined the plant fence.

(Weir, 1987)

#11

Chlordane and heptachlor, like many other pesticides, have made their way up the food chain, poisoning even polar bears thousands of miles away from the point of application. In fact, they have been found in animals all the way from the Arctic to the Antarctic. Most recently, scientists have detected chlordane and heptachlor in the coral reefs off the coast of Florida. They are believed to be residues returning on ocean currents from as far away as Africa and Latin America.

HANDOUT #16, continued
(To accompany lesson 4.5)

#12

As residues on imported beef, cheese, beans, carrots, pineapples, and pickles come back to haunt U.S. consumers of these products, people today are more concerned than ever over food safety. Sometimes tainted foods are caught by border inspectors; more often, however, foods get to the supermarket unchecked. For example, the Food and Drug Administration (FDA) is responsible for screening imported fruits and vegetables for illegal residues. However, they are only able to sample 1-2% of all shipments, and then only test for less than 40% of the pesticides that are on the market. As well, the U.S. Department of Agriculture (USDA) is responsible for testing meat, eggs and poultry. Their policy, though, is to not screen for residues of unregistered pesticides on imported foods, even if these pesticides are U.S.-made and exported. According to the National Resources Defense Council (NRDC), imported fruit and vegetables account for 25% of all produce eaten by U.S. citizens. An estimated 5% of this imported produce is contaminated with banned pesticides.

(Javna, 1992)

HANDOUT #17

SOLVING THE CIRCLE OF POISONS PROBLEM

(To accompany lesson 4.5)

The following list includes some proposals for solving the circle of poisons problem. Discuss these, then choose two to analyze in terms of their pros and cons, possible impacts, and feasibility.

1. Demand multinational companies to a) provide suitable protective gear to their agricultural workers; b) pay for medical expenses of pesticide poisoning victims; c) provide safety education to pesticide handlers; and d) stop producing, promoting, and selling chemicals that are banned in the country of origin.
2. Amend FIFRA to prohibit the export of pesticides that cannot be sold in the U.S., thus legislating the elimination of banned chemicals.
3. Require chemical companies to be responsible for decontaminating sites made toxic through pesticide use worldwide, as well as the super-fund sites in the U.S.
4. Change the emphasis of U.S. development efforts that encourage exports and pesticide use.
5. Provide educational and/or media campaigns to counter chemical companies' advertising and promotion of pesticide use in the Third World.
6. Build technology capabilities of developing countries so that they have more leverage in deciding which pesticides to import and produce.
7. Re-orient agricultural production systems, which require heavy pesticide use, so that they are more sustainable.
8. Provide educational programs on pesticide misuse, overuse, poisoning, and environmental contamination.

HANDOUT #18

THE DEVELOPMENT OF AUTOMOBILES

(To accompany lesson 5.1)

A man, 29 years of age, travels from Malawi to South Africa to work in the gold mines to earn some income for his family. South Africa is some 1,100 miles away from the man's home. He has no money, so he can not take a bus. In any case, there are no buses between his home and South Africa. So he follows the same method others have followed before; he walks for several months to travel the 1,100 miles.

A man arrives from working in the gold mines in South Africa. He has brought a bicycle. It is the pride of the village. A lot of young men come to this man, offering to work for him in his garden in exchange for learning how to ride the bicycle.

A Chinese man has developed a cart which is drawn by animals. It is a useful means for transporting agricultural produce as well as people, but it is slow and depends very much on the conditions of the animals that pull it. The Chinese then develops a steam-turbine to propel the cart.

Using the steam-powered system, a British scientist improves on it to create more power, thereby inventing the first passenger carrying vehicle powered by steam.

Improving the steam-powered vehicle further, a Frenchman develops a two-stroke internal combustion engine powered by illuminating gas.

A German, also concerned with improving land transport system, designs a three-wheeled, gas driven motor vehicle.

Faced with the problem of traffic congestion in a city, an American is working on how a computer system in a car can be connected to a traffic monitoring system in the city to tell drivers how to avoid traffic congestion.

HANDOUT #19

THE DEVELOPMENT OF AGRICULTURE

(To accompany lesson 5.1)

Life is a free lance adventure. People survive on hunting and gathering wild fruits and edible leaves. Seeing wild dogs, they domesticate them, which helps with the hunting.

In the Near East, hunting and gathering peoples domesticate wild goats and sheep as they settle down to horticultural activities. Women use digging sticks to plant seeds of wild grasses.

Great civilizations arise in places near rivers. The most well known are those of the Nile, Tigris, and Euphrates. The Egyptians on one part of the Nile use the shaduf to irrigate their crops.

In the Tigris and Euphrates River Valleys, cattle are domesticated mainly for meat purposes. Villagers cooperate to build irrigation canals and ditches.

To ease agricultural work, Sumerians in the Near East harness domesticated cattle to plows. Other people in the Near East region begin to raise cattle for meat and milk.

In China, among the Shang Dynasty, water buffaloes, along with several species of fowl, are domesticated. This is regarded as the beginning of poultry production.

Romans use blood and bones as fertilizer. They grow clover and alfalfa to maintain soil structure and texture but disdain the use of human excreta as manure despite the fact that it seemed very nutritional to the soil.

A United States farmer successfully interbreeds two strains of corn. This is the earliest recorded hybridization of corn.

Combines, cultivators, and other steam-powered machines are invented mostly in the United States, displacing a lot of farm labor by machines.

A computer-based program for analyzing the nutrient requirement of soils for various crops is developed in the United States. Similarly, a computer-based program for analyzing insect and disease infestation on crops is developed.

HANDOUT #20

THE DEVELOPMENT OF FOOD STORAGE AND PRESERVATION PROCESSES

(To accompany lesson 5.1)

A family has just harvested its corn and bean crops in Zimbabwe. The village has no electricity; wood is the main source of energy. The ash from firewood is mixed with the beans and stored in a mud storage bin. The corn, enough to last some twelve months, is also stored in a mud grain store. The family always grows flint corn because it is harder and weevils cause little damage to it when stored.

Shima, as the Bemba of Zambia call it, is the staple carbohydrate for most Zambians. It is prepared from corn, cassava, millet, sorghum or other types of flour. To process the corn into flour, women take the ears from a grain store, shell it, then pound it in a mortar to remove the outer coat of the grain. Thereafter, they soak the pounded corn for some three to five days and pound it into flour in a mortar.

In Lusaka, a city in Zambia, shima is still the main source of carbohydrate. Unlike in the villages, both the first and second pounding, which turn the corn into flour, are done with grinding mills.

In Uganda, a lot of millet is grown. Ugandans process the millet into flour used for cooking shima, or ugali, as the Swahili call it there. To process the millet into flour, women use a big and a small stone, grinding the millet between the two.

An African student at one of the United States universities would like to prepare an African dish that requires use of groundnut powder. If she were in her home country, she would use the mortar to grind the peanuts into powder. However, she has the privilege of using a blender to grind the nuts.

A wheat farmer in Whitman county has huge grain silos for storing her crop before marketing it. This enables the farmer to store the wheat until a time when she can sell it for a good price.

It is almost mandatory for every home in the United States to have a refrigerator for storage of food. It seems a fridge is a necessity not a luxury.

HANDOUT #21

THE DEVELOPMENT OF MEDICINE

(To accompany lesson 5.1)

A child is sick in a remote village in the Amazon area in Brazil. The family is worried. They visit a medicine woman who prescribes something. She goes into the forest to collect some roots to make the needed medicine for the sick child.

A young man has broken his arm in a Chinese village. The village's eldest man goes into the forest and collects some herbs. He boils them, and using tree bark and strings, he bandages the arm.

In about 3,000 B.C., Sumerian physicians practiced a mixture of primitive medicine and magic.

By 1,550 B.C., the Egyptians were said to have developed a cure for a malady of the "king's nostrils." They also are recorded to have developed the earliest known cures for baldness.

By 500 B.C., a Greek physiologist is said to have performed the first dissection of a human body for research purposes. He identified the brain as the center for intelligence.

The first cataract operations are performed in India with the earliest hospital being built in Sri Lanka (Ceylon).

By 100 B.C., Chinese physicians had developed an accurate theory of blood circulation in the human body.

A South African physician performs the first heart transplant; the patient lives for nearly three weeks. Soon after, the same physician performs a second heart transplant; this patient survives much longer.

The first glass eyes are invented in the United States and come into use there.

United States scientists develop the first radiography equipment that can be used to view a fetus of a pregnant woman.

HANDOUT #22

THE DEVELOPMENT OF COMPUTERS

(To accompany lesson 5.1)

A German builds the first known mechanical calculator.

An Englishman devises the first known analytical engine to help with mathematical problems.

The first large-scale analog computer is built at MIT.

A prototype digital computer, 50 feet long, is built at Harvard. The computer uses electro-mechanical switches.

An American physicist invents the transistor. It is seen as the invention that revolutionized the computer industry.

An American designs the first computer that is used for commercial use. The computer, 15 feet long with 1.5K memory, uses magnetic tape for data storage.

An American invents the micro-processor. It is a step to the production of the first desktop micro-computer that became available in 1975.

An advanced super-computer that can perform 1.72 billion computations per second is produced in the United States.

HANDOUT #23

EXAMPLES OF STATISTICS FROM AFRICAN COUNTRIES

(To accompany lesson 5.2)

(World Bank, 1991)

	<u>ANGOLA</u>	<u>SOMALIA</u>	<u>CHAD</u>
AREA (1,000 square km.)	1247	638	1284
POPULATION (millions)	9.7	6.1	5.5
POPULATION DENSITY (per square km.)	8	10	4
DAILY CALORIE SUPPLY (per capita)	1725	1736	1852
DAILY CALORIE SUPPLY AS % OF DAILY CALORIE REQUIREMENT	75	73	74
% OF POPULATION WITH FOOD SHORTAGE*	40	65	48
MEAN YEARS OF SCHOOLING	1.5	0.2	0.2
ADULT LITERACY RATE	42%	24%	30%
GNP PER CAPITA (US\$)	610	170	190
GNP GROWTH RATE (1980-88)	-2.5	-1.3	0.3
% OF POPULATION LIVING BELOW POVERTY LINE			
URBAN:	30*	40	30
RURAL:	50*	70	56

* = ESTIMATED FIGURE

HANDOUT #24

SUBSISTENCE VS. COMMERCIAL AGRICULTURAL PRODUCTION

(To accompany lesson 5.3)

SUBSISTENCE

- . Labor Intensive: Cultivation and harvest done by hand or with use of animals
- . Compost and manure used for fertilizer
- . Diversified cropping patterns: "polycultures"
- . Reliance on natural cycles for pest control
- . Local markets
- . Greater number of farmers per capita; lower production per farmer

COMMERCIAL

- . Not labor intensive: Much of the work is done with machinery
- . Chemical fertilizers used
- . Large acreage of single crops: "monocultures"
- . Pesticides and integrated pest management and control
- . International markets
- . Fewer farmers per capita; greater production per farmer

HANDOUT #25

"ZIMBABWE POSED FOR HUGE LAND REFORM"

(To accompany lesson 5.3)

Zimbabwe Poised for Huge Land Reform

Government to buy white-owned land for peasant farmers; but will this happen soon?

By Colleen Lowe Moran

Special to The Christian Science Monitor

HARARE, ZIMBABWE

DANI MUTSOTO is a communal farmer in the stony hills of Chikukwa, close to Zimbabwe's east-border with Mozambique.

Farming on eight acres of communal, government-owned land, Mr. Mutsoto grows sufficient corn for his family, and in a good year, has a surplus to sell. He also finds space to grow wheat, citrus fruit, coffee, and 4,000 gum trees, amid which he keeps 17 beehives.

The productivity of his plot results in part from a concerted government program to assist communal farmers with better farming methods and marketing and credit services. Yet such proud achievements mask the growing disgruntlement in the rural areas of this southern African nation. Thanks to the slow pace of a post-independence resettlement program, coupled with population growth of 3.2 percent a year, the fragile communal areas where the majority of Zimbabweans live are bursting at the seams.

One in 12 Zimbabweans is said to be a "squatter" living illegally on land owned by the country's 4,500 white commercial farmers. Their big farms occupy about half of Zimbabwe's best land and contribute 80 percent of the nation's agricultural production. Export crops, mostly from these farms, account for 40 percent of foreign-exchange earnings for the nation of 10 million.

Zimbabwe thus stands at a crossroads as it tries to balance its strength as a food exporter against political pressure to divide up land more equitably.

In March, the government passed a far-reaching Land Acquisition Act that may finally make good on President Robert Mugabe's long-standing promise to redistribute land to peasant farmers.

Two years ago, the government announced its intention to acquire about 10 million acres (or about half) of white-owned farmland for resettlement by the year 2000.

As chairman of the local coffee growers association, Mutsoto visited a 3,500-acre white commercial farm in the neighboring Chipinge district. He left impressed but enervated at the small size of his own holding, which will pass on to three sons.

"Where communal farmers have shown that they are capable," he says, "they should be given a chance to expand."

Commercial farmers here achieve yields comparable to those in the industrialized world. Yet the growers privately concede that the land — much of which they in-

or obtained cheaply — is not optimally used.

In Chipinge, for example, a coffee farmer who asked not to be named said that prime commercial farmland that should be intensively cultivated is being used for ranching. He acknowledged that 30 to 40 percent of commercial land in the area is underutilized, a figure in keeping with national estimates.

The Land Acquisition Act does not target underutilized farms. Instead it allows the government to designate areas it wants to purchase, based on the rationale that it is cheaper to resettle peasant families in big blocs rather than piecemeal.

Moreover, the government will for the first time fix the price of the land and pay that price in local currency over a 10-year period. At the last minute, under pressure from human rights groups and Western donors, the government inserted a clause in the controversial act that permits disputes

for resettlement. Zimbabwe has acquired only about 8 million acres out of 23 million the government intended to purchase by 1990. This has provided new homes for 51,000 families, compared with a target of 185,000 families.

These land schemes involve carving up commercial farms into individual holdings of about 10 acres each. These small farms are not as efficient as the large scale-farms. But when provided with extension facilities and proper infrastructure, the program has improved the lot of peasant farmers.

Esther Kashiri and her husband are among 320 peasant families who have moved since independence to the Bumpa resettlement scheme in southeast Zimbabwe. Before, in crowded and stony communal lands, the couple produced 10 bags of surplus corn each season. Now when the rains are good they have 200 surplus bags.

"For the first time we have money to spend," she says.

At the opposite extreme are Zimbabwe's numerous squatters — peasant farmers who moved onto white land either because their ancestors owned it before white settlers arrived in 1890, or because it was temporarily abandoned by white farmers at independence. The law says squatters must move, often back to communal lands.

Somewhere in between these extremes are the industrious communal farmers who — though usually less productive than their resettled counterparts — have shown enterprise and ingenuity.

In a good year communal farmers now grow half the country's marketed corn. This year a severe drought has caused Zimbabwe, which always used to have enough food to feed itself and even export to its neighbors, to seek food aid.

Adverse pricing policies have also hurt corn production. In an effort to keep food affordable to urban consumers during an austerity program encouraged by the World Bank, the price paid to farmers here slipped to about half the world market price.

Later the government boosted producer prices. But the damage was done. Commercial farmers reduced the area they devoted to food crops to one-third of previous levels.

Since the passage of the new Land Acquisition Act, the government has so far designated only 13 farms in the Mutare area for resettlement. These are for peasant farmers being moved to make way for a new dam. The time it is taking for the government to work out a compensation package has given some white farmers hope.

Nonetheless, numerous white farmers are reported to be contemplating moving to neighboring Zambia, which is wooing agricultural investment after years of ignoring agriculture in favor of mining.



FARMER: He works communal, government-owned land in eastern Zimbabwe.

to be taken to court. But farmers will only be able to contest whether the correct procedure has been followed in determining the price they receive for their land, rather than the price itself.

Privately, white farmers are not as worried by the policies as one might assume.

"There is a certain amount of political posturing in all this," says a farmer in the northeast Bindura district, sipping a cup of tea in a palatial farmhouse that has been in the family for several generations.

The constitution that ushered in Zimbabwe's independence from white settler rule in 1980 stipulated that, for at least 10 years, land could only be acquired on a "willing buyer, willing seller" basis, at market prices, and in foreign currency (enabling white farmers to emigrate).

Curry due to these restrictions, and partly because Britain and the United States bowed on various pledges to provide money

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HANDOUT #26

TOUGH DECISIONS (To accompany lesson 5.4)

(Lesson adapted from Cotterell, Fred. 1991. "Decisions for a Developing Nation." In A Sustainable Development Curriculum Framework for World History and Cultures. Union, NJ: Global Learning, Inc.)

You are a member of the national legislative assembly of either Brazil or Senegal. Your government has allocated US\$ 8,500,000 in the budget for development projects, and you must decide which programs are to be funded. Identify those projects you believe should be funded, and why, specifying how the project activities would involve and impact the physical, technological and human resources.

- \$3,000,000 1. Build primary schools to accommodate 200 students in 50 villages.
- \$2,000,000 2. Import irrigation equipment and teach farmers in three regions of the country how to irrigate to improve agricultural production of export crops.
- \$2,500,000 3. Build a highway for carrying lumber from a forest to a seaport from which it can be exported.
- \$2,000,000 4. Install systems to purify water in 200 villages.
- \$3,000,000 5. Conduct a nationwide campaign to immunize all children under 5 against smallpox, measles, whooping cough, and polio.
- \$1,500,000 6. Conduct training seminars for women throughout the country on how to construct and use more heat-efficient cooking "stoves."
- \$1,000,000 7. Send 50 agricultural extension agents for courses in the US on how to train their constituents on proper agroforestry techniques.
- \$500,000 8. Train 100 high school graduates to teach literacy in village schools.
- \$500,000 9. Train 50 village field workers and pay their salaries for a year; each of the field workers will teach 100 farmers to use a new kind of seed and improved farming techniques.
- \$1,000,000 10. Establish a family planning program throughout the nation, with regional information centers.
- \$2,500,000 11. Build dams along the country's rivers to siphon off water for irrigation.

HANDOUT # 26, continued
(To accompany lesson 5.4)

- | | |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------|
| \$1,500,000 | 12. Establish a small grants program for NGOs to develop community-based plans to promote sustainable use of forests. |
| \$3,000,000 | 13. Fund a public works project to create a proper sewage and waste water treatment system in one of the suburbs of the capital city. |
| \$500,000 | 14. Develop a pilot leadership program that will train women and men in how to make community-wide decisions. |

HANDOUT #27

SENEGAL COUNTRY PROFILE

(To accompany lesson 5.4)

(Wright, 1992)

Senegal has an area of 75,955 square miles (about the size of Nebraska) with a population of 7 million people, creating a population density of 92 people per square mile. Its annual population growth rate is 2.8%. The average rate of adult literacy is 38%, with adults having achieved only 0.8 means years of schooling. About 40% of Senegal's population has access to health services, and 54% has access to safe water. Senegal has an under-five mortality rate of 185 per thousand, mainly due to diseases that can be prevented through immunization. The GNP per capita is \$650. Growth of the GNP was 4% per year during 1981-85, but declined to 2.9% per year during 1985-89, just keeping pace with the population growth rate.

Senegal became independent from France in 1960. It has had a stable government, initially under President Senghor, but in more recent years under President Diouf. This is one of the most peaceful countries in Africa.

Senegal has a varied climate with 4 to 5 months of rainfall amounting to some 65 inches in some areas. Agriculture comprises about 10% of the GNP, but employs more than 70% of the working population. The majority of the remaining GNP comes from manufacturing and services.

The total arable and permanent crop land is 5,226,000 hectares. Fifty thousand hectares of forest are cleared every year. The Senegal River is a major resource for fishing and transportation. As of 1988, 220 km of the river were navigable. Plans were to increase this distance to 924 km. The river is also a source of a variety of fish including shrimp. Dams have been constructed on the Senegal to supply hydro-electric power. The river, emptying into the Atlantic ocean, forms a wide flood plain that characterizes most of the country. The plain is a rich agricultural area but the delta soils are saline and not very suitable for agriculture. However, the delta gives rise to a broad belt of live dunes rich in calcium, aluminum phosphates, and a small amount of petroleum.

Senegalese herd cattle, sheep, and goats, which are produced mainly for internal consumption. In addition, in 1990, Senegal produced 700,000 metric tons of sugarcane, 698,000 of groundnuts, and 661,000 of millet/sorghum. Groundnuts are the main cash and export crop. Their cultivation takes up about 40% of Senegal's arable land. Output of groundnuts declined from 1,168,000 tons in 1965 to 678,753 tons in 1990/91, mainly due to droughts and international price fluctuations. The government is trying to diversify its export crops into cotton and rice, and to grow more sugarcane, but international market opportunities are limited. Droughts have affected food supply. This has led the government to import food for its population. Financial problems have led to the closure of a number of factories, as government has had to allocate more resources to importing food.

HANDOUT #28

STATISTICS ON SENEGAL

(To accompany lesson 5.4)

(Jazairy et al., 1992)

Food Staple Self-Sufficiency Ratio:	67%
Food Aid in Cereals (% of Total Cereal Import):	23.6%
Food Imports (% of Total Imports):	40%
GNP/Capita:	\$650
GNP/Capital Annual Growth:	-0.80%
Rural Population Below Poverty Line:	70%
Life Expectancy at Birth:	48
Adult Literacy:	28%
Primary School Enrollment (% of age group):	60%
Infant Mortality (per 1,000 live births):	129
Under-Five Mortality (per 1,000):	220
Rural Population with Access to Health Services:	40%
Safe Water:	38%
Sanitation:	2%
Rural Population (% of Total):	62%
Agricultural Population (% of Total):	79%
Rural Female-Headed Families:	36%
Annual Deforestation (1,000 hectares):	50
Salinity (1,000 hectares):	765
Arable Land Per Head of Population (hectares):	0.95
Irrigated land:	3%
Share of Agriculture in GDP:	22%
Share of Agriculture in Total Labor:	78.8%
Annual Crop Growth Rate	
Rice:	-0.92
Maize:	-0.93
Sorghum:	-0.96
Groundnuts:	-1.00
Cotton:	-2.19
Sugarcane:	-3.92
Maternal Mortality (per 100,000 births):	530
Women Using Contraceptives:	4%
Female Adult Literacy:	19%
Gross Primary Female Enrollment:	49%
Gross Secondary Female Enrollment:	10%
Female Agricultural Labor Force:	88%
Female Non-Agricultural Labor Force:	12%

HANDOUT #29

BRAZIL COUNTRY PROFILE

(To accompany lesson 5.4)

(Global Food Web Project, 1989; Sorese, 1986; Wright, 1992)

Brazil has an area of 3,286,488 square miles (about the size of the Continental U.S.). Seven percent of this land is arable, 1% is used for permanent crops, 19% comprises meadows and pastures, and 67% is forest and woodland. Brazil's water resources include the Iguazu Falls, which actually numbers 275 falls the size of Niagara Falls, and the Amazon River, which carries one-fifth of the world's freshwater supply. Brazil is nearly self-sufficient in agriculture, except for wheat. Major crops include coffee, rice, corn, sugarcane, cocoa, and soybeans.

Brazil is a two-tiered society where wealth is concentrated in the hands of a few, and the majority of its 155.5 million inhabitants are poor. The average per capita income is about \$1,750. Seventy percent of Brazilians are under the age of 30. Its annual population growth rate is 2% , and life expectancy is 65 years. For every 1,000 babies born alive, 64 die as infants. The maternal mortality rate is 150 per 100,000 live births. Twenty-five percent of Brazil's population lives in rural areas. Of these, only 21% have access to health services, 56% to safe water, and 1% to sanitation. The average rate of adult literacy is 78%, although this figure is much lower for rural areas.

When the Portuguese arrived in Brazil in 1500 A.D., the native Tupians quickly established economic relations with the Europeans who were interested in the valuable dye wood, "pau-brasil," that was so abundant in the region. Brazil then gained its independence from Portugal in 1822. It was ruled by the military from 1964 until 1985. The first Brazilian president to be chosen through direct elections since the military rule, Fernando Collor de Mello (1989), resigned from office on December 29, 1992. During the course of that year, investigation and impeachment processes had been undertaken in response to allegations of Collor's misuse of funds.

In order to enhance economic growth and finance its multi-billion dollar debt, the Brazilian government has supported the increase of agricultural and industrial production for exports. The increase in large-scale agricultural production has displaced thousands of smallholder farmers, forcing them to migrate to urban areas and the Amazon Basin. In fact, between 1969 and 1977, the Brazilian government set up sixteen colonization projects in the Amazon Basin, giving land and providing incentives to those who would settle there. The opening of the Transamazonia Highway in 1984 led to more migration, increased logging and cattle ranching, and buying of the rainforest lands by large companies for land speculation.

These changes have severely damaged the forests of the Amazon Basin. As much as 20% of the rain forest may have already been destroyed, and 2,323,000 hectares of forest land continue to be cleared annually.

HANDOUT #30

STATISTICS ON BRAZIL

(To accompany lesson 5.4)

(Jazairy et al., 1992)

Food Staple Self-Sufficiency Ratio:	88%
Food Aid in Cereals (% of Total Cereal Import):	1.5%
Food Imports (% of Total Imports):	14%
GNP/Capita:	\$2,160
Rural Population Below Poverty Line:	73%
Life Expectancy at Birth:	65
Adult Literacy:	78%
Primary School Enrollment (% of age group):	103%
Population per Physician:	1,100
Infant Mortality (per 1000 live births):	64
Under-Five Mortality (per 1000 live births):	87
Rural Population with Access to Health Services:	21%
Safe Water:	56%
Sanitation:	1%
Rural Population (% of Total):	25%
Agricultural Population (% of Total):	26%
Rural Female-Headed Families:	14%
Annual deforestation (1,000 hectares):	2,323
Salinity (1,000 hectares):	4,503
Arable Land Per Head of Population (hectares):	1.80
Irrigated Land:	4%
Share of Agriculture in GDP:	9%
Annual Crop Growth Rate	
Rice:	.31
Wheat:	.81
Maize:	-4.01
Sorghum:	-6.58
Groundnuts:	-.73
Coffee:	-7.48
Cotton:	1.21
Long-term external debt (% of GNP):	29%
Maternal Mortality Rate (per 100,00 live births):	150
Women Using Contraceptives:	65%
Female Adult Literacy:	76%
Gross Primary Female Enrollment:	99%
Gross Secondary Female Enrollment:	45%
Female Agricultural Labor Force:	12%
Female Non-Agricultural Labor Force:	88%

HANDOUT #31

THE STORY OF THE TORTOISE

(To accompany lesson 6.3)

(Told by Oyibo Afoaku)

The story is about an event that took place in the animal kingdom. It involved a tortoise and some birds of the kingdom who were supposed to attend a marriage celebration in heaven.

The tortoise had to beg the birds to lend him some feathers in order for him to be able to fly along with them. So, he borrowed the feathers and was more beautiful than the rest of the birds because he looked very colorful.

The tortoise convinced the birds that each member of the group should adopt a special name for the occasion. The birds thought that it was a good idea, and agreed. Everybody adopted a new name and tortoise's name was "All of you." The tortoise and the birds all proceeded to heaven for the marriage celebration.

When they arrived at their host's house in heaven, the tortoise was posing as the leader on behalf of the group. Since the marriage celebration was a special one, the host had prepared a lot of food and drink for the guests. As everybody got ready to eat, the tortoise asked them to wait a minute, as he had something to say to the host. He asked the host, "For whom did you prepare these foods and drinks?" The host answered, "All of you."

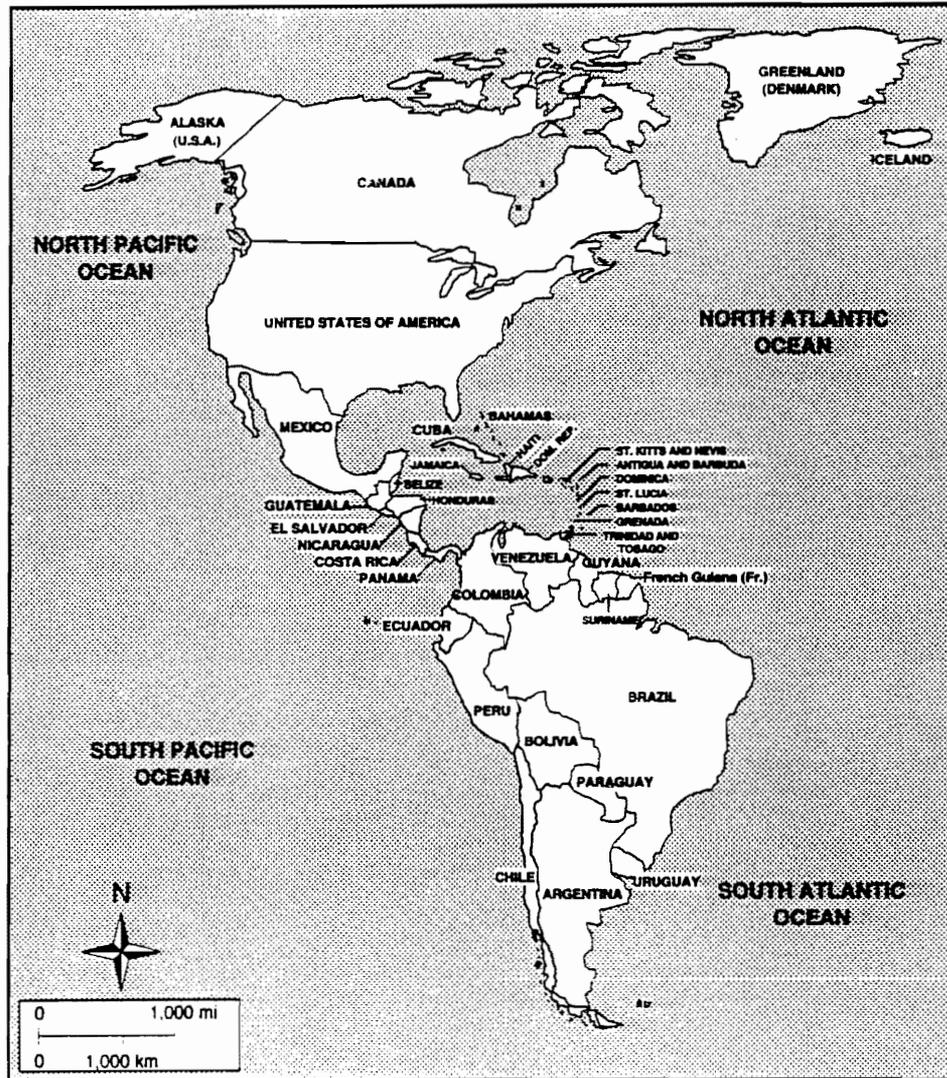
The tortoise told the birds they should wait for their own food because this was his alone. The birds became angry, and promptly took back their feathers from the tortoise. The tortoise begged the eagle to ask members of his family to bring out all kinds of soft objects outside his house so he could land without being hurt. The eagle did the opposite. He asked them to bring out stones, pieces of iron, knives, and all kinds of sharp objects.

When the tortoise left heaven and jumped back to earth, he landed and broke into pieces. He had to find a special medicine man to help put him back together. This is why the tortoise shell is usually rough and patchy.

APPENDIX B

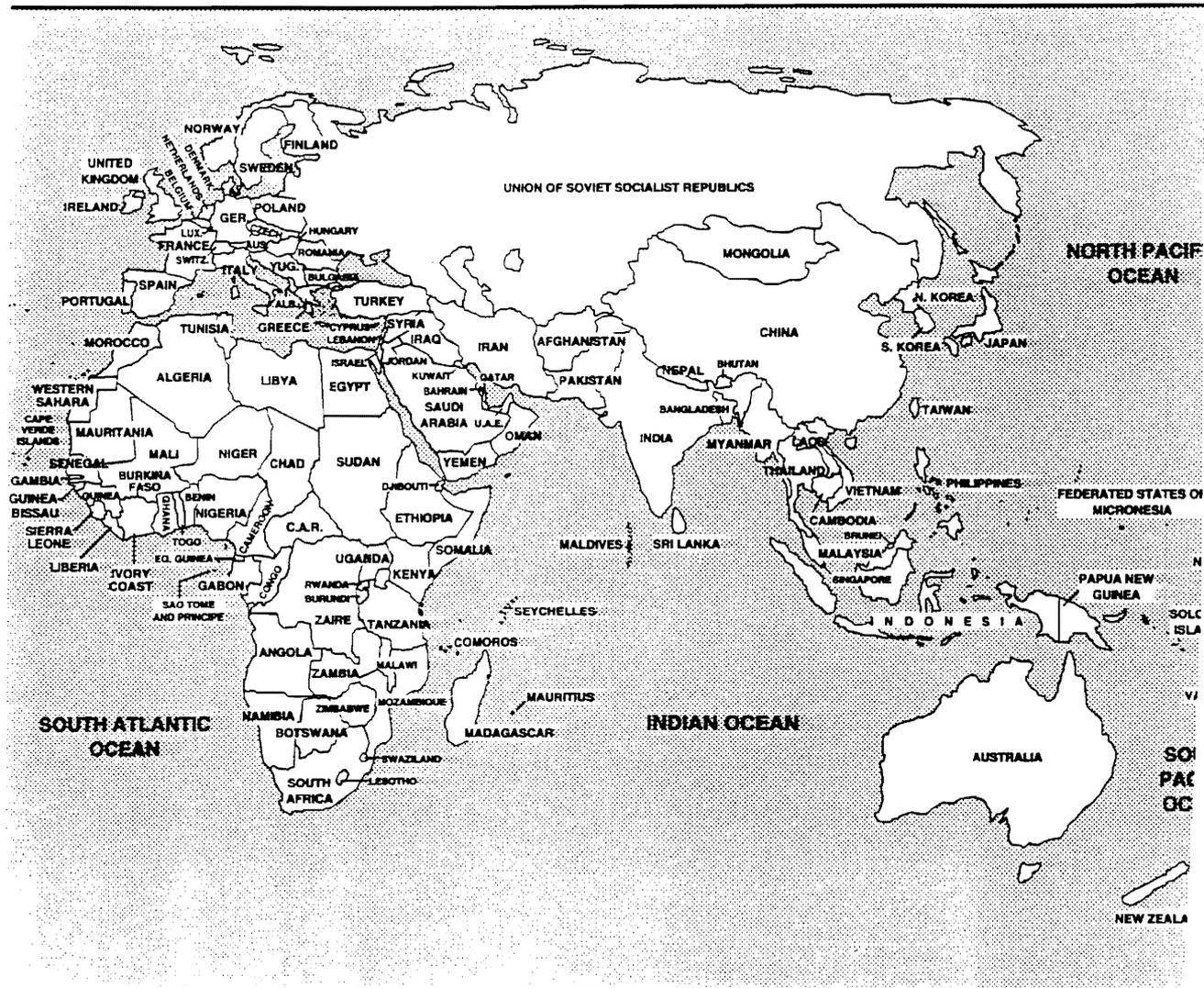
MAPS

THE WORLD



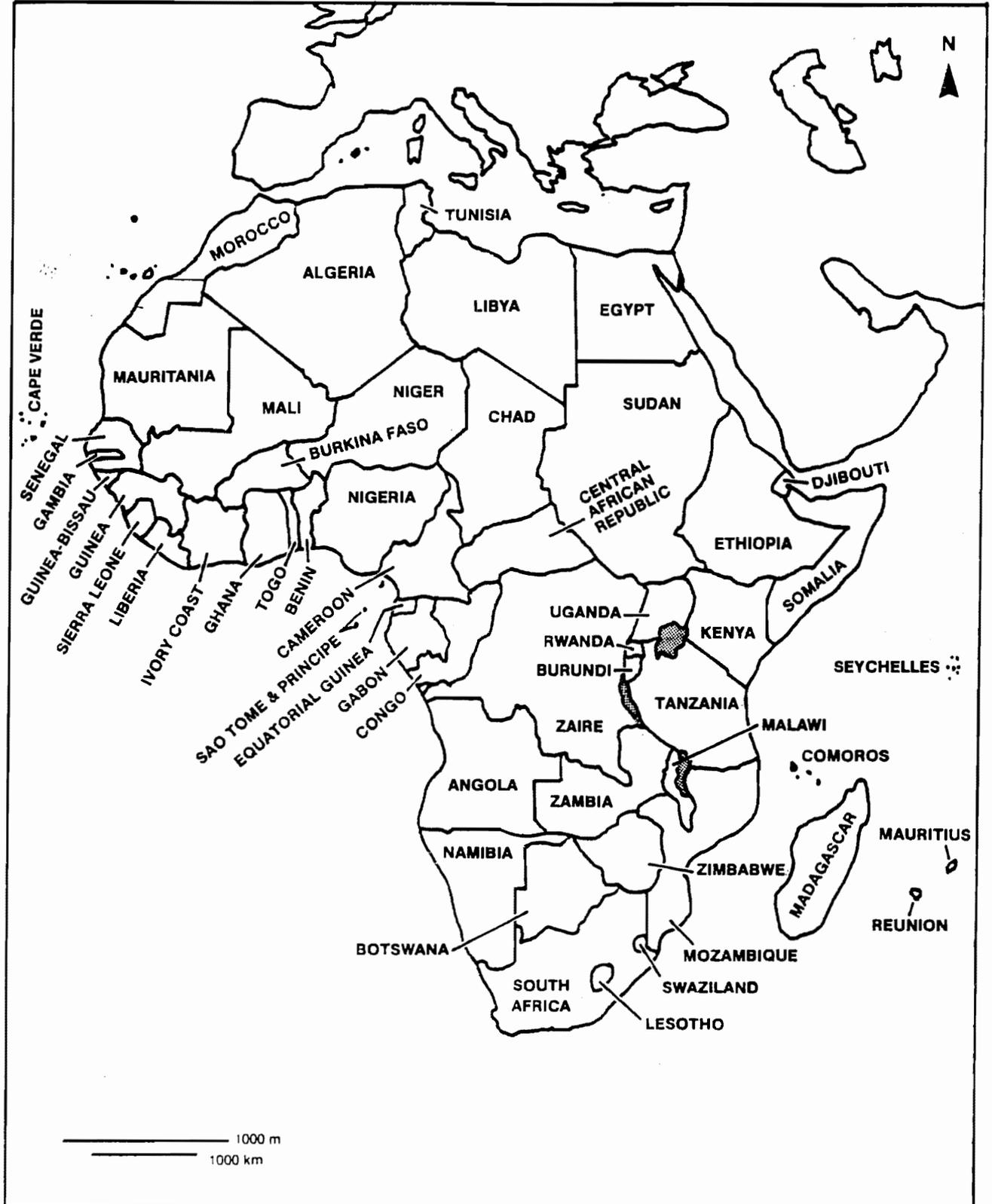
- ALB.-- Albania
- AUS.-- Austria
- C.A.R.-- Central African Republic
- CZECH.-- Czechoslovakia
- GER.-- Germany
- LUX.-- Luxembourg
- SWITZ.-- Switzerland
- U.A.E. - United Arab Emirates
- YUG.-- Yugoslavia

THE WOR

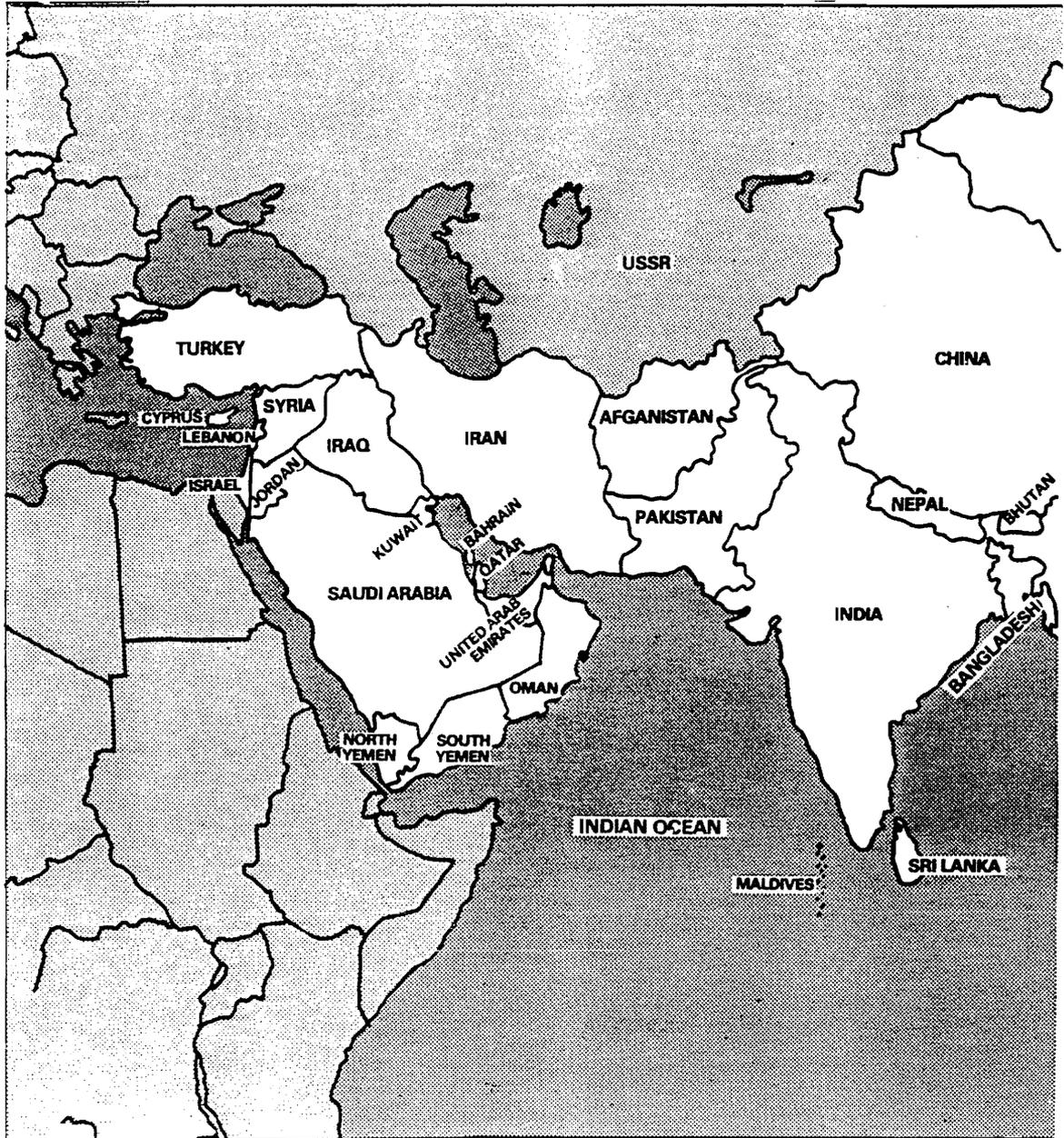


Countries not labeled or represented:
 ANDORRA
 FIJI
 KIRIBATI
 LIECHTENSTEIN
 MONACO
 ST. VINCENT AND THE GRENADINES
 TONGA
 TUVALU
 WESTERN SAMOA

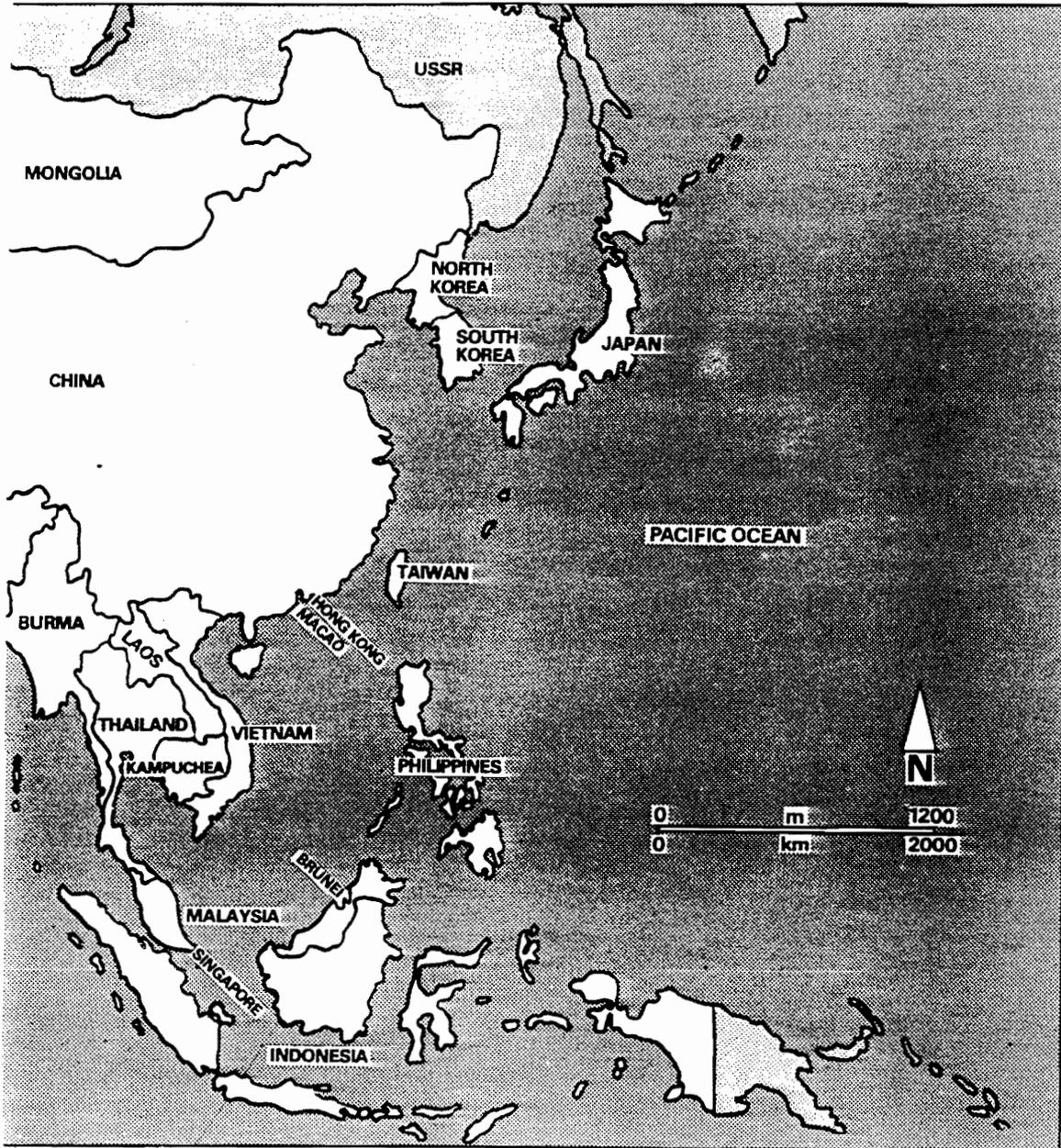
AFRICA



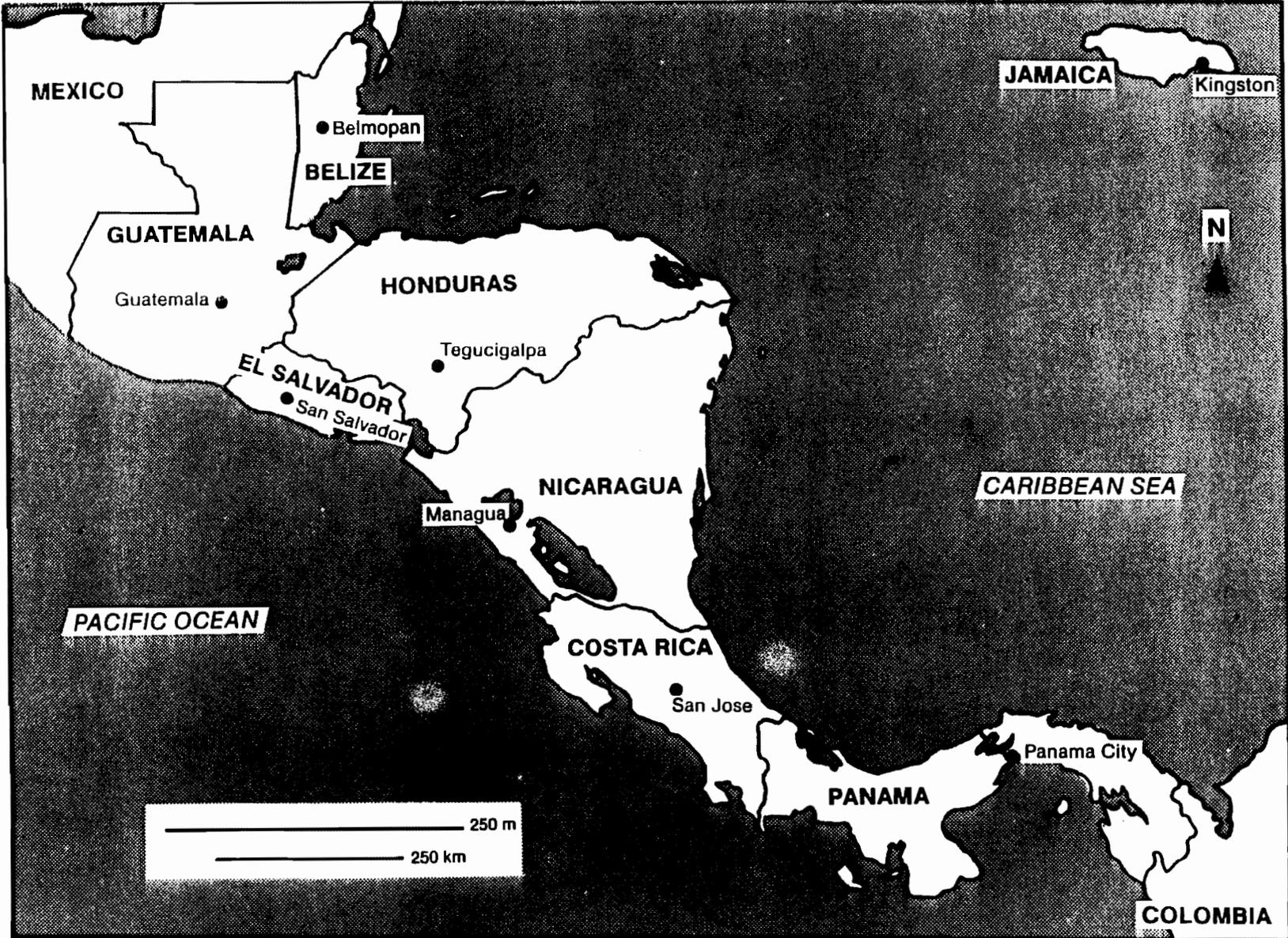
ASIA AND THE PACIFIC



ASIA AND THE PACIFIC



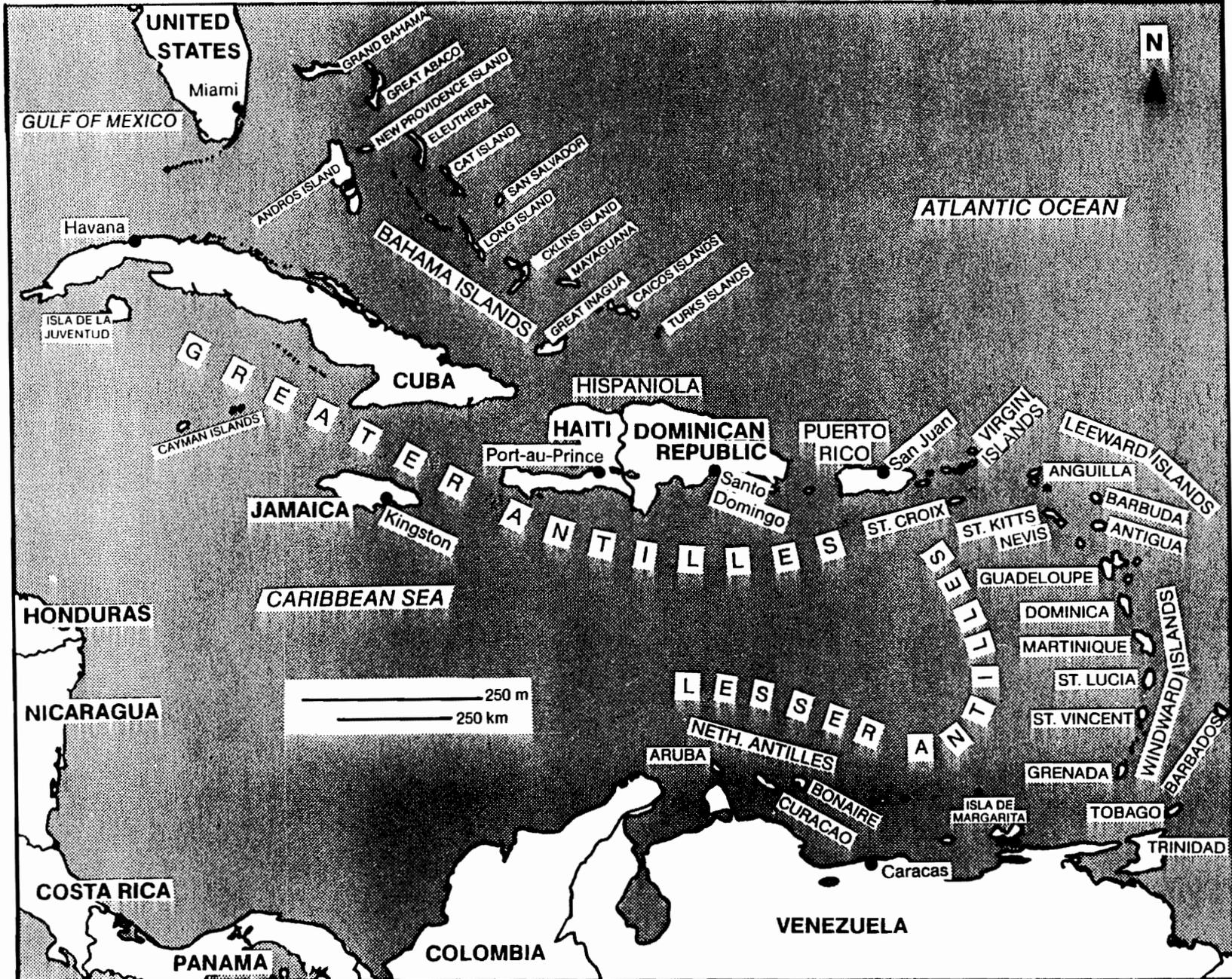
CENTRAL AMERICA



THE CARIBBEAN

MAPS ON FILE™

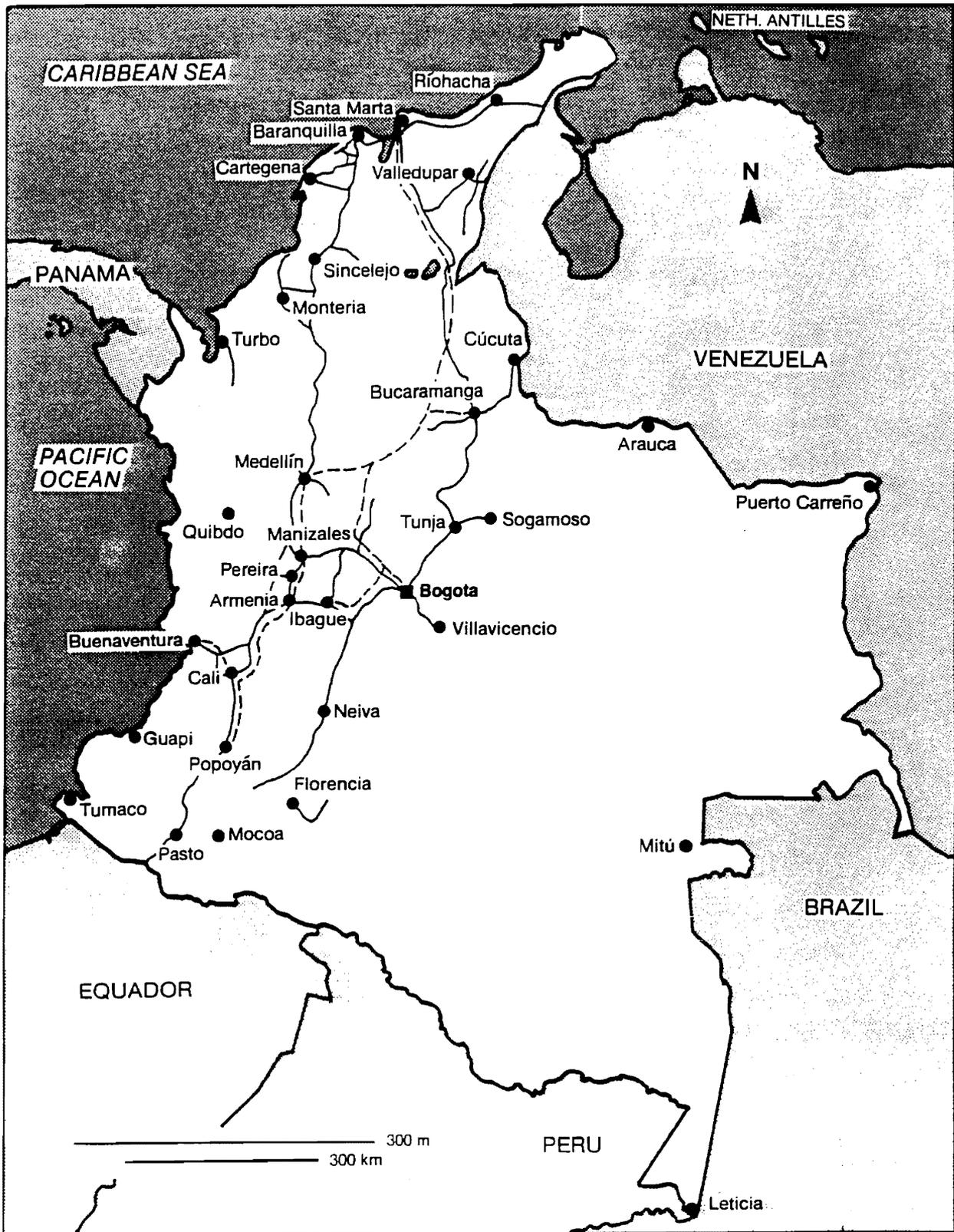
THE CARIBBEAN
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SOUTH AMERICA



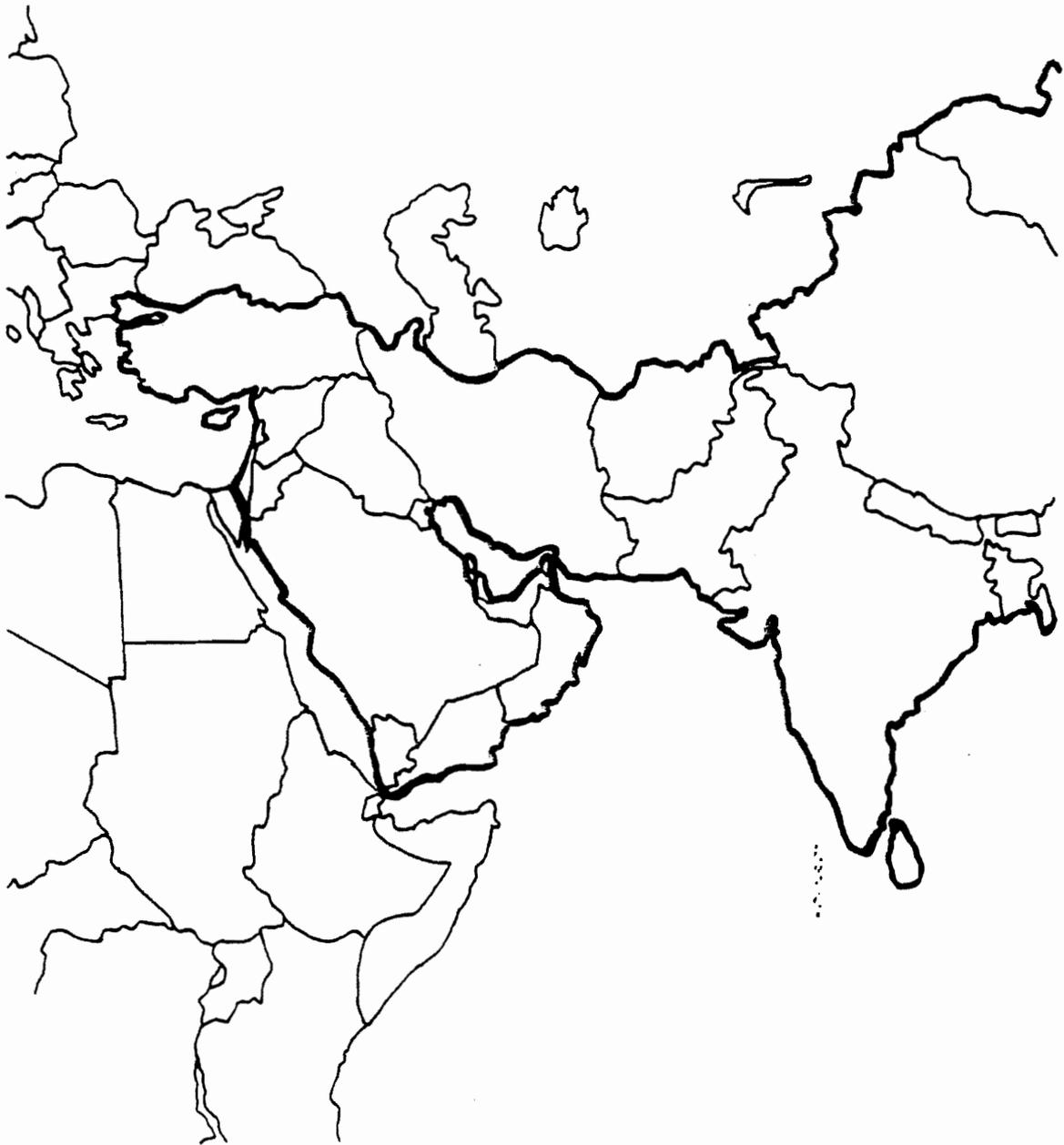
COLOMBIA



AFRICA



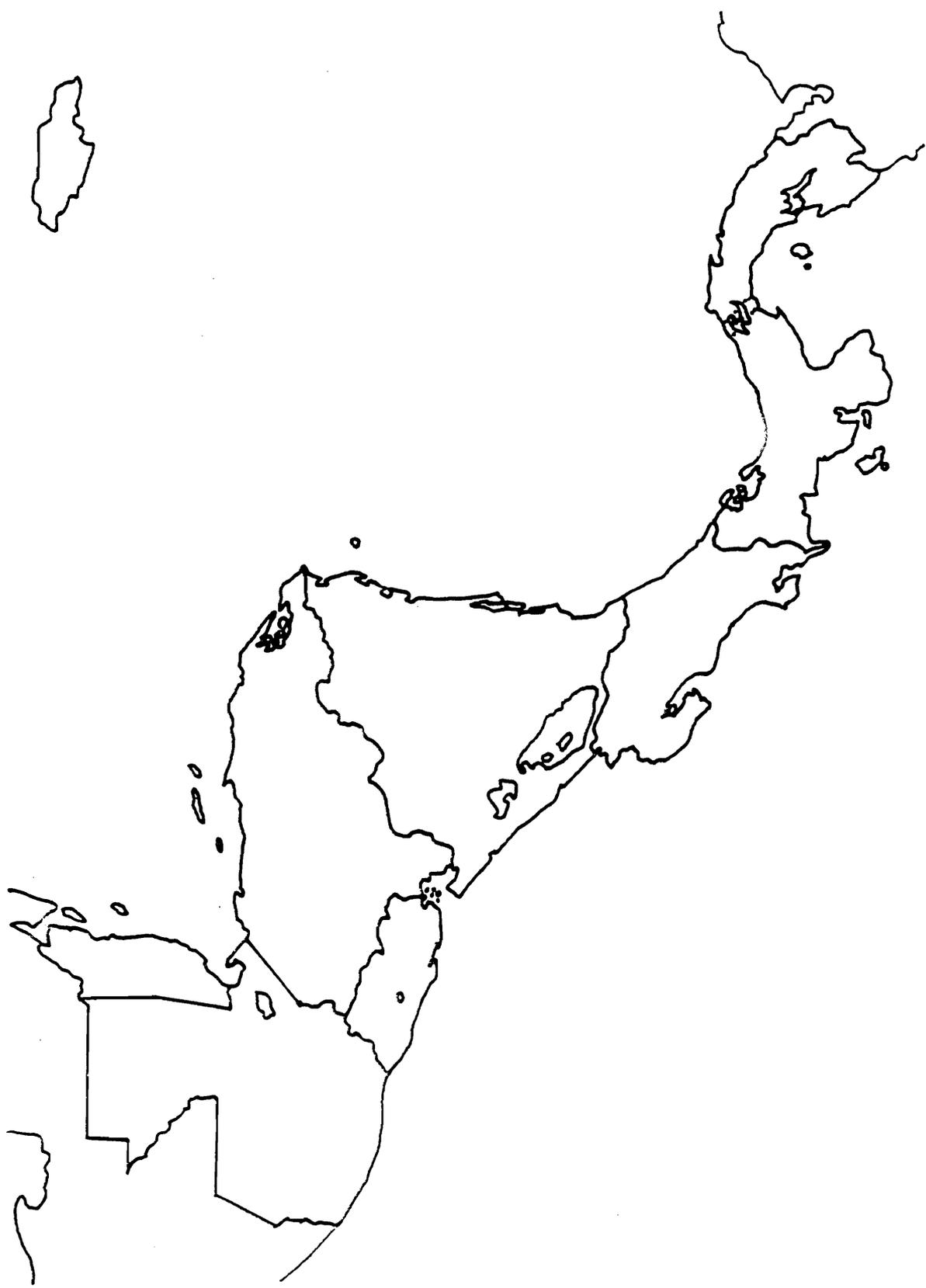
ASIA AND THE PACIFIC



ASIA AND THE PACIFIC



CENTRAL AMERICA



SOUTH AMERICA



APPENDIX C
SLIDES AND SLIDE SCRIPTS

SCRIPT TO SLIDE SET #1

GEOGRAPHY OF AFRICA

(To accompany lesson 1.5)

1. Sunrise at Camp Lengano: Welcome to Africa! If you left the U.S. from the East Coast, what ocean did you cross to reach Africa's western shores? [*Atlantic*].
2. Camels: What do you see here? In the hotter, drier parts of Africa, camels are often used to transport goods to and from markets. What sub-Saharan countries form part of the Sahara Desert? [*Mauritania, Mali, Niger, Chad, Sudan, Somalia, Eritrea, and Ethiopia*].
3. Aggaro Jungle: Believe it or not, this scene is also from Ethiopia. It is the Aggaro Rain Forest. This shows the great diversity that exists, not only throughout the African continent, but also within single countries. Where is a major rain forest area in Africa? [*In the Congo Basin*].
4. Zebra: What climatic zone is represented here? [*Savanna*]. This was taken in Kenya. Do you notice any other physical geographic features?
5. Fields - Egypt: What do you notice here? What kind of activity is common in this type of area? [*Grazing is common in the Sahel*].
6. Cocoa Pods: What are these? [*Cocoa Pods*]. In the richer agricultural areas of Africa, crops are grown for home consumption as well as for export. In some places, like South Africa, the climate is cool enough to grow apples. Here in Ghana, however, the warm tropical climate is better suited for cocoa production.
7. Woman cooking injera: What's this woman doing? [*She is cooking injera, a typical bread made from millet flour and eaten in Ethiopia*]. What energy source is she using to cook with? [*Wood is used as a primary source of fuel throughout 80% of Africa*]. In many parts of Africa, women and children trek many miles to gather scarce fuel wood.
8. Mt. Kilimanjaro - Does anyone know the name of this famous mountain found in Tanzania? [*Mt. Kilimanjaro*]. It is the highest peak in Africa - over 19,000 ft. Another African mountain, Mt. Kenya, near Nairobi, is snow-capped.
9. Lesotho: Another important mountain range is found in South Africa and Lesotho. It is called the Drakensburg Mountains. This picture was taken in Lesotho.
10. Blue Nile: What rivers do you know of in Africa? This is a shot of the Blue Nile. How many Niles are there? [*Three - Blue Nile, White Nile, Nile*]. What countries does the Nile run through? [*Uganda, Sudan, Ethiopia, Egypt*].

SCRIPT TO SLIDE SET #1, continued
(To accompany lesson 1.5)

Another major river is the Congo, or the Zaire. It is the fourth largest river in the world. Can you locate it on the map?

In what part of Africa do you find the Niger? *[West]*. It drains the areas forming the Niger Basin. What countries does the Niger run through? *[Guinea, Mali, Niger, Nigeria]*.

11. Zambezi River: This picture was taken on the Zambezi River, down from Kariba Dam. Can you locate the Zambezi River on your map? It originates in Mozambique. Then, where does it run? *[Along the border of Zambia and Zimbabwe, Botswana, and Namibia]*.
12. Victoria Falls: This is Victoria Falls, found on the Zambezi. It drops 325 feet (about the length of a football field).
13. Lake Kariba (gathering fish): Africa also has many lakes. This is Lake Kariba. How does geography influence how people make a living? *[Different geographies provide and sustain different natural resources which people use for their livelihood]*.
14. Lake Shalla: This is Lake Shalla - one of the larger lakes in the Rift Valley system in Eastern Africa. What is Africa's largest lake? What countries does it border? *[Lake Victoria: Uganda, Kenya, Tanzania]*.

What other lakes can you find in Africa? Take a look at your maps. *[Tanganyika, Malawi, Chad, Volta]*.

15. Sunset: With that, we will now leave the physical features of Africa. But, we'll look into and under the diverse lands we've just seen to see some of Africa's energy and mineral resources.











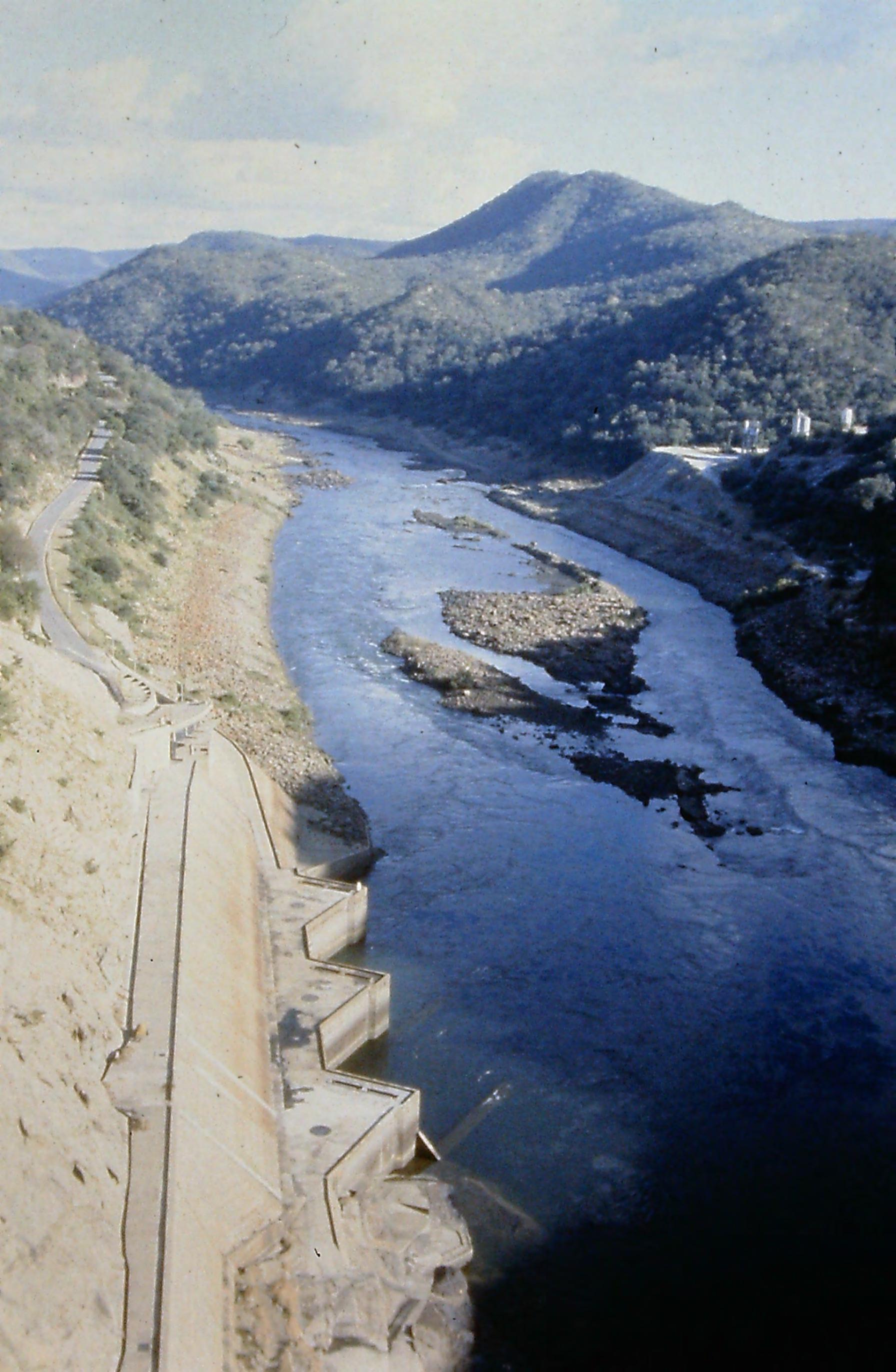




















SCRIPT TO SLIDE SET #2

AGRICULTURAL SYSTEMS IN AFRICA

(To accompany lesson 5.3)

1. People hoeing: What are these people doing? *[Preparing the ground for planting]*. What tools are they using? *[Hoes, shovels]*.
2. Threshing wheat: What does this picture show? *[People threshing wheat]*. How do we thresh wheat in the U.S.? *[With combines]*. How might the two different technologies influence production? *[With machines, agricultural work is much faster, so production can take place on a larger scale]*. Africans practice both small and large scale grain production.
3. Drying maize: Here, maize (corn) is being dried. It may be stored in something like this (next slide).
4. Grain Store: With this grain store, families can safely keep their grain until they need it for home consumption.
5. Market: Alternatively, surplus maize might be sold at a nearby market. What kinds of things are being sold at this market? *[Fruits, vegetables, spices, sugar cane, etc.]*.
6. Tractor: This type of small-scale or what is sometimes called subsistence farming can be contrasted with commercial agriculture production, in which mechanization is used, and large plots/fields are planted.
7. National Granary: Commercial agricultural production, such as that of grain, involves large scale production and storage processes. Here, the national granary can be sharply contrasted with the grain store used for storing a family's own harvest.
8. Cocoa Research Institute: One good example of commercial agricultural production in Africa is that of cocoa. This is the Cocoa Research Institute in Ghana.
9. Seedlings: Here, delicate seedlings are meticulously cared for until they are strong enough to be transplanted.
10. Cocoa Trees: What do you notice about this picture? *[The cocoa trees are transplanted to areas that are heavily shaded by the canopy or tops of other trees]*.
11. Cocoa Seeds: The cocoa seeds, within the pods, look something like this.
12. Cocoa on ground: After it is harvested, the cocoa is left to ferment.
13. Cocoa being dried: What do you think is happening here? *[Finally, the cocoa is dried and ground before it is exported]*.

















1938

W.A.C.R.I.

TARO CACAO RESEARCH STATION









