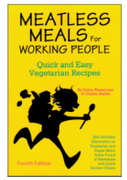
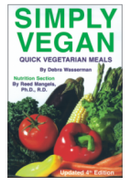
MEATLESS MEALS



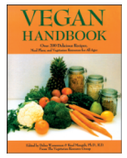
This 192-page book contains over 100 quick and easy recipes and tells you how to be a vegetarian within your hectic schedule using common, convenient foods. Includes information on quick service restaurants. ($12)

SIMPLY VEGAN



This excellent resource contains 160 quick and easy vegan recipes and an extensive vegan nutrition section by Reed Mangels, PhD, R.D. covering topics such as protein, fat, calcium, iron, vitamin B12, pregnancy and the vegan diet, feeding vegan kids, and a nutrition glossary. Also featured are sample menus and meal plans. An additional section on shopping by mail or online tells you where to find vegan clothes and shoes, cosmetics, household items, etc. 224 pages. ($15)

VEGAN HANDBOOK



Over 200 vegan recipes including A Bit O' Irish Cooking, Wholesome Vegetarian Dishes of North Africa, A Vegetarian Thanksgiving, Cooking with Non-Wheat Flours, Feeding Children, Vegan Pancakes, and Vegan Birthday Cakes, plus Alternatives to Leather, and Linkages Between Business, Ethics, and the Environment in this 256-page book. ($20)

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SAVE OUR WATER

THE VEGETARIAN WAY

We all need clean water.

No doubt about it. HOW to get it and keep it running clean and plentiful is becoming a problem almost everywhere. In fact, the United Nations' Food and Agricultural Organization (FAO) predicts in a report titled Livestock's Long Shadow, that by 2050, two-thirds of people worldwide will lack clean water to meet even their basic needs.

The good news is that one part of the solution is easy and close at hand! It all starts with your fork.

"Livestock are one of the most significant contributors to today's most serious environmental problems. Urgent action is required to remedy the situation."

H. Steinfeld, senior author,
Livestock's Long Shadow,
A report from the
United Nations

THE VEGETARIAN RESOURCE GROUP

Saving Earth's Water By Eating a Vegetarian Diet

Did you know that the largest user of fresh water is the livestock industry? Water is *directly* needed for drinking and cleaning of animals. And that's a lot of water when we're talking about over *10 billion* animals raised for food in the United States alone *every year.*

But the biggest way animal agriculture consumes water is *indirectly.* A large amount of fresh water is used to grow the feed that livestock animals eat.

By comparison, it takes *a lot less* water to grow the grains, beans, legumes, fruits, and vegetables that make up a typical vegetarian diet. Here's how the numbers stack up according to researchers whose work is cited in the U.N.'s *Livestock's Long Shadow:*

Table 1. Estimated Amount of Water In Liters Used to Produce One Kilogram of Food in the U.S.

(Note: One liter (L) is approximately the same as one quart. One kilogram (kg) is approximately the same as 2.2 lbs.)

Food Item	Hoekstra & Chapagain L/kg	Zimmer & Renault L/kg	Pimentel, Berger, Filiberto, et al. L/kg
Corn	500	700	650
Wheat	850	1,200	900
Soybeans	1,900	--	2,000
Rice	1,600	1,400	1,600
Cow's Milk	700	800	--
Eggs	1,500	2,700	--
Beef (feedlot)	13,000	13,500	43,000
Beef (rangeland)	12,000 *	--	120,000-200,000
Pork	3,900	4,600	6,000
Poultry	2,400	4,100	3,500

Note: *Values taken from Chapagain A, Hoekstra A (2004)* Water Footprints of Nations Volume One: Main Report. *Value of Water Research Report Series No.16. Delft (The Netherlands): UNESCO – IHE Institute for Water Education. Asterisked value is based on Canadian data taken from Chapagain A, Hoekstra A (2003)* Virtual Water Flows between Nations in Relation to Trade in Livestock and Livestock Products. *Value of Water Research Report Series No.13. Delft (The Netherlands): UNESCO – IHE Institute for Water Education.*

Zimmer D, Renault D (2003) Virtual water in food production and global trade: Review of methodological issues and preliminary results in *Hoekstra, A. (ed.)* Virtual Water Trade: Proceedings of the International Expert Meeting on Virtual Water Trade. *Value of Water Research Report Series No.12. Delft (The Netherlands): UNESCO – IHE Institute for Water Education.*

Pimentel D, Berger B, Filiberto D, et al. (2004) Water Resources, Agriculture, and the Environment. *Ithaca (NY): New York State College of Agriculture and Life Sciences, Cornell University. Environmental Biology Report No. 04-1.*

Table 2. Global Averages of the Quantity of Water Required to Produce Certain Food Products (Liter)

Note: One liter (approximately one quart) equals 1,000 milliliters (ml). One pound equals 454 grams (g).

Food Item	Water Needed for Production (Liter)
1 cup of coffee (125 ml)	140
1 glass of milk (200 ml)	200
1 slice of bread (30 g)	40
1 slice of bread (30 g) with cheese (10 g)	90
1 potato (100 g)	25
1 bag of potato chips (200 g)	185
1 tomato (70 g)	13
1 apple (100 g)	70
1 glass of apple juice (200 ml)	190
1 egg (40 g)	135
1 hamburger (150 g)	2400
Dry pasta (made in Italy; 1 kg)*	1900
Cheese pizza (made in Italy; 725 g)*	1200 (or 248 L per 150 g = ~1/4 pizza)
Tomato pizza (made in Italy; 600 g)*	300 (or 75 L per 150 g = ~1/4 pizza)

Note: Values taken from Chapagain A, Hoekstra A (2004) Water Footprints of Nations Volume One: Main Report. *Value of Water Research Report Series No.16. Delft (The Netherlands): UNESCO – IHE Institute for Water Education.*

Asterisked values taken from Aldaya M, Hoekstra A. (2009) The Water Needed to Have Italians Eat Pasta and Pizza. *Value of Water Research Report Series No.36. Delft (The Netherlands): UNESCO – IHE Institute for Water Education.*

Animal Waste

Besides using all that clean, fresh water, animal agriculture pollutes a lot more of it. *Livestock's Long Shadow* states that tons of animal wastes are discharged into waterways each year. The report says that in most of the developing world, *untreated* manure enters water used by people for drinking, washing and bathing.

Along with the manure flow lots of other undesirables including pesticides, antibiotics, hormones, and their breakdown products, not to mention the surplus of nitrogen and phosphorus coming from fertilizers placed on the feed crops. All of this livestock-related influx upsets balance in nature.
It can lead to fish kills and algal blooms which can

Poor Grain-Meat Conversions

To produce meat for people, animals need to eat. In most cases, a significant portion of their feed is grains. The grain-to-meat conversion process is not perfect: "one pound of grain in" does ***not*** equal "one pound of meat out."

Here's how various agencies and researchers calculate the grain-to-meat conversion:

Table 3. Quantity of Grains* (kg) Eaten by U.S.** Livestock to Produce One Kilogram of Meat

Livestock type	CAST (1999)	EPA (2007)	USDA (2009)	Pimentel (2003)
Beef	2.6	6.5	~4	13
Pork	3.7	3.0	–	5.9
Chicken	2.2	1.9	~1.9	2.3

*Note: *Components of corn, soybean and other foods are included in "grains" for CAST, USDA, and Pimentel. EPA provided no specification.*

***CAST (Council for Agricultural Science and Technology) numbers are for the "developed world" (including the United States) as described in their report Animal Agriculture and the Global Food Supply (1999).*

The EPA values were accessed at www.epa.gov/oecaagct/ag101/poultrynutrition.html in March 2009.

The USDA values for beef and poultry were from personal email communications with employees of the Economic Research Service (ERS) branch of the USDA. (~ means approximately). Pimentel D, Pimentel, M (2003) Sustainability of meat-based and plant-based diets and the environment. American Journal of Clinical Nutrition 78:660S-663S. (Reprinted in their 2008 book titled Food, Energy, and Society, 3rd ed.). See www.vrg.org for a few reasons behind the differences in some of the numbers. Note that meat may mean "live weight," not "consumable food."

During grain-to-meat conversions, there are water losses along the way. First, there's water loss when the feed crops lose water through evapotranspiration, a natural process that's part of a plant's normal growth. *Livestock's Long Shadow* estimates that this loss accounts for ***15%*** of all freshwater loss on a global basis.

Inefficient irrigation contributes to water runoff from cropland and to further evaporation loss. In 2008, approximately ***50%*** of the corn crop and ***60%*** of the soybean crop were fed to US livestock according to the United States Department of Agriculture. That's a lot of **indirect** water used by livestock, not to mention the topsoil erosion that occurs.

Vegetarians eating a variety of grains and legumes ***directly*** as the basis of their diet conserve water by eliminating meat, the middle part of the grain-to-meat conversion process.

How Your Food Choices Impact the AIR and the LAND

Livestock's Long Shadow states that the ***#1*** contributor of greenhouse gases is not vehicle emissions, but raising livestock which accounts for **18%** of all carbon dioxide equivalents. And between the methane, ammonia, and nitrous oxide, the situation is really heating up (literally!) on a global level.

Livestock's Long Shadow reports that raising livestock is responsible for **70%** of forests cleared for grazing and feed crop production in the Amazon Rain Forest. Breathe easier and help keep the earth green by going vegetarian.

One Simple Step

So that's how easy it is for **YOU** to make a difference. A simple step to keeping water clean and keeping it plentiful for generations to come. And while you're at it, you'll be helping to keep the air clean, the forests green, and biodiversity thriving. The really cool thing about it all is that you can start **TODAY** with your next trip to the store. Contact *The Vegetarian Resource Group* to find out all the specifics about going vegetarian.

VISIT WWW.VRG.ORG FOR INFORMATION ON A VEGETARIAN DIET

To sign up for the VRG e-mail newsletter, go to http://www.vrg.org/vrgnews
For more information on the environment and diet, go to www.vrg.org/environment
Thank you to Jeanne Yacoubou for researching the information in this brochure. At www.vrg.org, also see the Vegetarian Solution to Water Pollution by Jeanne Yacoubou.